



This course of study outlines the sequence of learning activities needed to develop skills in the subject area of Database III Administration. After completing this course, you will take the Oracle Exam 1Z0-042 (AMV1) assessment to evaluate your ability in the outlined competencies for Database 10g Administration I. This course of study will require up to 11 weeks to complete, depending on your database experience and time commitment. Consult with your mentor if you wish to accelerate through this course of study. This course of study is designed for independent learning, paced by your mentor.

The PDF version will not include the FAQs. FAQs for each topic are available through this web-enabled course of study.

## Introduction

### Overview

Did you know that Oracle Database 10g is the first database designed for grid computing? That means it can access several computers at the same time to solve problems and access large amounts of data. In this course of study, you will learn to install Oracle DB 10g and create databases, interfaces, and control storage structures. You will also learn to manipulate user privileges, manage schema objects, and backup and recover databases. All of these skills are immediately applicable in a DBA job role. When you successfully pass the ALV1 and the AMV1 assessments, you will have earned your Oracle Database 10g Administrator Certified Associate certification.

Competence is measured by the Oracle Database 10g Administration I exam, which is Oracle Exam 1Z0-042 (AMV1) assessment. The Oracle Exam 1Z0-042 (AMV1) assessment includes a random selection of 84 questions that must be completed within 120 minutes. To achieve a passing score on the exam, you must score at least a 68% (approximately 58 of 84). Once you have submitted your passing score, you will receive a "pass" on your Degree Plan for the assessment.

This course of study may take up to 11 weeks to complete depending on your educational background, work experience, and the number of hours you are able to dedicate to your studies. Consult with your mentor if you wish to accelerate through this course of study. It is important that you follow the activities sequentially as you prepare for your assessment. This tool is also designed to help you become an independent learner by providing multiple learning methods.

The Database III Course of Study focuses on the practices of Oracle 10g database administration. This component of your studies at WGU is designed to help you gain a broad overview of the field of database administration and management with a fundamental understanding of some key concepts and principles.

Watch the following video for an overview of this course:



Watch the following video for information on how to get started in this course:

The following are the 16 competencies covered by the Database III Course of Study:

**Competency: Database Structure**

The graduate identifies, describes, and explains the structure and architectural components of a database management system (DBMS).

**Competency: Database Installation and Configuration**

The graduate selects appropriate tools and application software for installation on host machines.

**Competency: Maintain Control Tools**

The graduate can demonstrate how to maintain control tools.

**Competency: Server Configuration and Task Management**

The graduate configures servers and manages tasks associated with server functions.

**Competency: Application, Secure Access, Authentication Management, and Single Sign-on Deployment**

The graduate identifies application software, configures secure access, manages authentication, and deploys single sign-on technology.

**Competency: Tablespace Management**

The graduate manages tablespaces and data files.

**Competency: Data and Database Management**

The graduate identifies and applies appropriate techniques for managing data within databases.

**Competency: Create a Database**

The graduate creates and manages databases.

**Competency: Management of Log Files**

The graduate manages redo log files.

**Competency: Storage Structures and Relationships**



The graduate identifies storage structures and relationships within databases.

**Competency: Data Integrity**

The graduate demonstrates how to undo data changes and maintain data integrity.

**Competency: Index Management**

The graduate manages various indexes.

**Competency: Data Dictionary**

The graduate Identifies content, usage, and profiles for data dictionaries.

**Competency: User Management**

The graduate describes how to create and manage users, privileges, and password security in databases.

**Competency: User Security**

The graduate manages user security on a database.

**Competency: Backup and Recovery**

The graduate performs database backup and recovery operations for a given database.

**Learning Resources:**

Watson, J. & Bersinic, D. (2005). *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*. Oracle Press. ISBN: 0070072257903

Dawes, C., Bryla, B., Johnson, J. C., & Weishan, M. (2005). *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*. Oracle Press. ISBN: 9780782143676

## **Preparing for Success**

To successfully complete the Database III Course of Study, you will need the appropriate learning resources. You should also prepare a calendar to schedule times devoted to your studies. Share your calendar with family and friends so they are aware of your obligations.

### **Acquire Learning Resources**

Arrange to obtain the learning resources listed below so there will be no delays in your studies. These items are essential for you, as they will be used weekly in your assignments. Some of these items must be shipped to you, so be sure that your mailing address information is current. If you click your name on your Degree Plan, you can check your contact information.

### **Automatically Enrolled Resources**



You will be automatically enrolled at the activity level for the following learning resources. Simply click on the links provided in the activities to access the learning materials.

E-texts are available to you free of charge, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBNs listed to ensure that you receive the correct edition.

### **SkillSoft and Books 24x7**

You will access the following SkillSoft items within this course of study. For more information on accessing SkillSoft items, please see the "[Accessing SkillSoft Learning Resources](#)" page.

- Watson, J. & Bersinic, D. (2005). *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*. New York: Oracle Press. ISBN: 0-07-007225790-3

This book is organized into two parts: Part I reflects competencies and objectives covered on the Oracle Database 10g Administrative I Exam; Part II reflects competencies and objectives covered on the Oracle Database 10g Administrative II Exam. Most of the reading you will be doing in this book will be within Part I. However, there are a few places in the course of study where you will be directed to Part II for more comprehensive coverage of a topic area.

- Dawes, C., Bryla, B., Johnson, J.C., & Weishan, M. (2005). *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*. New York: Oracle Press. ISBN: 978-0-7821-4367-6

This book is organized into 11 chapters. Each chapter is divided into the following main sections:

- Exam objectives covered in the chapter
- Sub-topics covered in the chapter
- A chapter summary—this is an excellent place to review the content. If there is something in it that does not sound familiar or make sense, you should go back and review.
- Exam Essentials—It presents an overview of what you should know and be able to do after completing the chapter. Again, if you find something that does not make sense or look familiar, go back and re-read that section.
- Review questions—these are an excellent way of challenging yourself to see if you are learning the material. We recommend that you do not skip this.

The chapters contain information covering multiple exam categories. On the first page of every chapter, you will see an overview of which exam objectives are covered in the chapter.

We recommend that you create sections in your notebook that reflect the specific exam objectives. As you are reading through the textbook, take notes and file them accordingly. This will help when you review the sections you may have difficulty with as you progress through this assessment.

### **Hands-on Exercises**



The hands-on exercises will require use of an Oracle database. If you do not have access to an installed Oracle database (preferably 10g), follow the instructions below for installation. [Chapter 2](#) of the e-book covers installation. If you prefer, you can wait until you reach that point in the COS to install Oracle 10g Express Edition.

1. Download Oracle 10g Express Edition from [CNET](#).
2. If needed, read installation instructions on [Oracle.com](#), or read [Chapter 2](#) of Oracle Database 10g OCP Certification All-in-One Exam Guide.
3. Install Oracle 10g Express Edition.
4. Once installed, you will log in using SQL\*Plus (use the user ID "Scott" and the password "tiger").

Note from Oracle's Wiki: "Scott" is the database user used for demonstration purposes containing the famous EMP, DEPT, BONUS and SALGRADE tables. According to legend, this account was named after Bruce Scott (one of the original Oracle employees) and the password was the name of his daughter's cat, Tiger.

### **SkillSoft Pre-Assessment**

Access and complete the following in SkillSoft:

- [TestPrep 1Z0-042 Oracle Database 10g: Administration I Release 2](#)

There are two modes in the TestPrep: Study Mode or Certification Mode. The certification mode will serve you as a pre-assessment. This will give you an indication of which areas you may need to spend more time with. After you've completed the entire course of study, you will take the pre-assessment a second time. This should help you determine if you've filled in the learning gaps. If you are still seeing low scores in certain areas, you should go back and revisit those areas.

Note that this pre-assessment is good as a diagnostic, but not as a study tool. You can later use the study mode to review.

### **Create a Notebook**

It is suggested that you create a paper or digital notebook for your studies of database fundamentals. Use organizers or dividers to separate your work. Suggestions divisions include:

- Glossary
- Study notes
- Competency review notes
- Helpful websites

Under each topic area, you will see a series of activities. We have indicated what you are supposed to do with each activity so that you will know what to expect when you encounter that activity.



The following are suggestions to help you as you work through this course of study:

- **Read It:** Reading for understanding and comprehension is very important. As you are reading, take notes and store them in your notebook. A suggested way of taking notes is to create three columns:

1. Concept you are learning.
2. How you interpret the book's definition.
3. A picture or example of what the concept is and how to apply it.

Also include any notes on things you notice as you are practicing. (*example:* "Database. The book says it's a way to store information-think telephone book. The information is categorized and organized-like a phone book, it's got a place for last name, first name, etc.")

- **Try It:** Do a hands-on activity or exercise outlined in one of the textbooks-do not skip these. If you get stuck, turn to the learning community or e-mail me. It is recommended that you go to the learning community first because other students may be experiencing the same thing or possibly already have, and they can help guide you
- **Watch It:** This course of study includes some supplemental SkillSoft courses that will help you better comprehend this material. These courses are computer based and include sound and some animation. Each of these courses includes test questions and exercises to give you even more engagement in what you are learning. More details about SkillSoft are included later in the course.
- **Review It:** Compare what is in the chapter summaries, exam essentials questions, and your notes. Do you understand everything? If you were asked to do any of these things in a job environment, could you? If you find you need more assistance, go to the message boards or contact the SkillSoft mentors.

It is recommended that you create sections in your notebook reflecting the specific exam objectives. As you are reading through the textbook, take notes and file them accordingly. This will help when you review the sections you may have difficulty with as you progress through this assessment.

If after trying the message boards and SkillSoft mentors you still need help, e-mail your course of study mentor. Contact info can be found in the upper-right corner of this screen.

## Database Structure and Architecture

In this section you will learn to create a database, interface with that database, and manipulate the data within a database.

Competencies covered by this subject

431.3.1 - Database Structure

The graduate identifies, describes, and explains the structure and architectural components of a database management system (DBMS).

### Introduction to Databases, Relational Model, Database Structure,



## and Architecture

This topic focuses on understanding the background and use of relational databases. It also discusses Oracle architecture and main components and the Oracle Instance architecture. As you are working your way through this material, pay attention to the different Oracle tools available and what each of them are used for. There are some specific Oracle architecture components you should become familiar with as well. You should pay attention to the relationships between extents, database blocks, operating system blocks, and segments. Remember, it is important to take notes as you read and explore this material. Creating a reference portfolio to refer back to on the job will make your ability to apply concepts and accomplish tasks much easier!

### **Introduction to Databases and the Relational Model, and Oracle 10g Components and Architecture**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 1 \("Oracle Database 10g Components and Architecture"\)](#)

This chapter discusses the Oracle family, database concepts, and the Oracle architecture.

### **Basic Oracle Concepts**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 1 \("Basic Oracle Concepts"\)](#)

This chapter discusses databases, relational model, database objects, and more on the Oracle family.

### **Migrating to Oracle DB 10g: Oracle DB Architectural Framework**

Complete the following module:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

This course will take about four hours to complete. You may chose to move more quickly or more slowly depending upon your understanding of the content.

This lesson is broken down into many areas. Focus your attention on the Oracle 10g features and architecture.

If you need help with any of the content or examples in the lesson, contact a mentor.

### **Chapter Review**

Complete the chapter review questions for:





- [chapter 1 in Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#)

## Review Exam Essentials

Review the exam essentials, and complete the review questions for:

- [chapter 1 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#)

## Installing and Configuring a Database

In this section you will learn how to install the Oracle 10G database software. You will also learn how to select the appropriate tools, software, and hardware required for creating a database

Competencies covered by this subject

431.3.2 - Database Installation and Configuration

The graduate selects appropriate tools and application software for installation on host machines.

### Installing the Oracle Database 10g

This topic focuses on the installation of the Oracle 10g database with all the associated activities, including environment configuration (variables), selection of tools to assist with installation, and installation logs review. Consider the following questions: How do you start and stop the grid control? How do you start and stop the EM database control? What is the DBCA tool and how do you use it? What are the different startup modes and why are they important? What is the point of understanding the contents of an Oracle alert log? Are these questions that you are able to answer correctly?

#### Installing Oracle Database 10g

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 2 \("Installing Oracle Database 10g"\)](#)

This chapter provides an in-depth discussion and guide for installing the 10g database.

#### Hands-on Exercises

Complete [exercise 2-1 \("Installing Oracle database 10g"\)](#) in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*. Also review the post-installation tasks.

#### End of Chapter Questions

In *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*, read the [chapter 2 review](#) and then answer the questions at the end of the chapter.

#### Installing an Oracle Database

Read the following in *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*:





- ["Installing Oracle Database 10g Software" in chapter 1 \("Oracle Database 10g Components and Architecture"\)](#)

### **Exam essentials and review questions**

Review the exam essentials and review questions in [chapter 1 of OCA Oracle Database 10g: Administration I: Exam Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database installation.

### **Migrating to Oracle DB 10g: Oracle DB Architectural Framework**

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Oracle DB 10g Installation Prerequisites
- Identify prerequisites for Oracle Database 10g installation.
- Sequence the steps for installing Oracle Database 10g

### **Configuring the Oracle Network Environment**

This topic focuses on the creation of net services, creation and control of net listeners, and shared versus dedicated servers with associated listeners. There are many responsibilities associated with the database administrator. Pay attention to what those responsibilities are in terms of network administration. When you are done with this topic area, you should have a strong sense of the options available for Oracle internet connections. You should also be familiar with the Oracle listener and its role, know the differences between static and dynamic service registration, and be able to diagnose and correct network connectivity problems. Because there is so much information in this topic area, we encourage you to take your time, take detailed notes, and do all the hands-on activities!

#### **Oracle Net Services**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 4 \("Oracle Net Services"\)](#)

This chapter highlights the areas that you need to consider when implementing an Oracle network strategy and DBA responsibilities while managing an Oracle database network. This is a very comprehensive discussion of the topic.

#### **Configuring Oracle Networking**

Read the following in *OracleDatabase 10g Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 12 \("Configuring Oracle Networking"\)](#)



This chapter introduces network services and discusses how Oracle implements the client/server paradigm.

### **End of Chapter Questions**

Read [chapter 12 in Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#) and review and answer the questions at the end of the chapter.

### **Hands-on Exercises**

Do the following exercises in [chapter 12 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 12-1: Creating a Listener with Database Control
- Exercise 12-2: Creating an Oracle Net Service Alias
- Exercise 12-3: Configuring Dynamic Service Registration

### **Exam Essentials and Review Questions**

Review the exam essentials and complete the review questions in [chapter 4 of OCA Oracle Database 10g: Administration I: Exam Guide \(Exam 1Z0-042\)](#).

When you have finished reading this chapter, be sure to complete the "Exam Readiness Checklist," mark "Exam Watch" notes in your notebook, take the self-test, and challenge yourself with the lab questions at the end of each self-test section.

## **Creating a Database**

This subject will provide more in-depth investigation into the DBCA tool that you learned about in the previous material. You will also learn how you can use it.

Competencies covered by this subject

431.3.8 - Create a Database

The graduate creates and manages databases.

### **Creating an Oracle Database**

This topic focuses on creating an Oracle database using the Database Configuration Assistant (DBCA) and understanding the database creation scripts that the DBCA uses. Make sure you do the practice exercise in this section. It will give you first-hand experience with using the DBCA tool. Your goal is to learn how to create, configure, drop, and manage a database and templates with the tool. When you are done with this topic area, you should have a solid understanding and skill set with the DBCA tool.

### **Creating an Oracle Database**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 3 \("Creating an Oracle Database"\)](#)

This chapter provides an in-depth discussion and guide for creating a database using the DBCA creation scripts.



## Hands-on Exercises

Complete exercise 3-1 ("Creating a Database with Database Configuration Assistant (DBCA)") in [chapter 3 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#).

### End of Chapter Questions

In [chapter 3 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#) textbook, read the chapter 3 review and then answer the questions at the end of the chapter.

### More on the Creation of a Database

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 2 \("Creating and Controlling a Database"\)](#)

We will discuss startup and shutdown later in the course, so don't be concerned with this section now. Review the storage, management, and file location sections.

### Exam Essentials and Review Questions

Review the exam essentials and complete the review questions in [chapter 2 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### Migrating to Oracle DB 10g: Oracle DB Architectural Framework

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Oracle DB Organization
- Match Oracle database objects with their features.
- Oracle Instance Management
- Match Oracle instance components with their features.
- Oracle DB: Creating
- Identify options used to create an Oracle database using the database configuration assistant.

## Managing the Database Environment

This subject area will introduce you to structured query language (SQL) and the ways you can use it to manipulate data. This newly acquired skill will help you learn the skills required to maintain a database management system (DBMS).

Competencies covered by this subject



### 431.3.3 - Maintain Control Tools



The graduate can demonstrate how to maintain control tools.

## Interfacing With the Oracle Database

This topic focuses on using SQL to interface with the Oracle database. SQL is used to manipulate data (i.e., insert, delete, and update), load data, import data, and export data using the SQL pump. iSQL uses the same syntax as SQL but uses a different GUI interface. Oracle also uses something called SQL\*Plus and iSQL\*Plus for accessing and manipulating data. When you are done with this section, you should feel comfortable with the following statements: select, update, insert, delete, create, alter, and drop. Make sure to do the exercises associated with this to gain hands-on experience.

### Interacting with the Database

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 4 \("Interfacing with the Oracle Database"\)](#)

This chapter provides an in-depth discussion and guide for manipulating and selecting data from an Oracle database.

### Hands on Exercises

Complete the following exercises in [chapter 4 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 4-1: Working with SQL Plus
- Exercise 4-2 Working with iSQL Plus

### End of Chapter Questions

In [chapter 4 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 4 review and answer the questions at the end of the chapter.

### More on the Database Interaction

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 7 \("Managing Data with SQL, PL/SQL and Utilities"\)](#)

This topic covers in additional detail, SQL loader, the data pump, and data manipulation.

### Exam Essentials and Review Questions

In [chapter 7 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#), review the exam essential and complete review questions. Review only those parts that discuss database creation.

### Migrating to Oracle DB 10g: Oracle DB Architectural Framework



Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- SQL\*Plus
- Identify ways to access a database using SQL\*Plus.
- iSQL\*Plus
- Sequence the steps to access a database using iSQL\*Plus.

## **Proactive Maintenance**

The 10g database infrastructure can be used to automate a significant amount of the DBA's day-to-day work by using the workload repository and the diagnostic monitor.

### **Database Maintenance**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*.

- [chapter 15 \("Monitoring Oracle"\)](#)

This chapter provides an in-depth discussion and guide for manipulating and selecting data from an Oracle database.

### **Hands-on Exercises**

Complete the following hands-on exercises in [chapter 15 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 15-1: Generating an ADDM Report
- Exercise 15-2: Configuring Alerts

### **End of Chapter Questions**

In [chapter 15 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 15 review and then answer the questions at the end of the chapter.

### **More on Database Maintenance**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 9 \("Proactive Database Maintenance and Performance Monitoring"\)](#)

This topic covers optimization statistics, tuning, baseline metrics, and the use of the ADDM.

### **Exam Essentials and Review Questions**

Review the exam essentials and complete the review questions in [chapter 9 of OCA Oracle](#)



[Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### **Migrating to Oracle DB 10g: Oracle DB Architectural Framework**

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Memory Components: Managing
- Identify key aspects of managing memory components.
- Alert Log
- Identify features of the alert log.

## **Maintaining and Configuring the Database Environment**

This section will teach you how to manage Oracle processes. Part of those processes includes configuring and managing tasks for a DBMS.

Competencies covered by this subject

431.3.4 - Server Configuration and Task Management

The graduate configures servers and manages tasks associated with server functions.

### **Managing Oracle Processes**

This topic focuses on managing Oracle processes. This includes using Enterprise Manager (EM), initialization files, the startup and shutdown of instances, and the viewing of log files. Consider if you would be able to train someone to do the following tasks: start and stop iSQL\*Plus; start and stop EM Database control; start/stop the Oracle Listener; start/stop Oracle Database 10G; Handle parameter files; and locate and view database alert logs. Once you have completed this section, you should feel very confident that you would be able to instruct your new assistant to take on this new role.

### **Using SQL or EM to Control the Database**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 5 \("Managing Oracle Processes"\)](#)

This chapter discusses the starting and stopping (controlling) of SQL Plus and EM, the listener and the database. SQL Plus is also used to view control and activity logs.

### **Hands-on Exercises**

Complete the following exercises in [chapter 5 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):





- Exercise 5-1: Starting Up and Shutting Down Your Database with SQL Plus
- Exercise 5-2: Starting Up and Shutting Down Your Database with Database Control
- Exercise 5-3: Viewing Parameters with Database Control

### End of Chapter Questions

In [chapter 5 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 5 review and then answer the questions at the end of the chapter.

### More on the Database Control

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 2 \("Creating and Controlling a Database"\)](#)

This provides additional information and reinforces the processes and tools used to control the database.

### Exam Essentials and Review Questions

Review the exam essentials and complete the review questions in [chapter 2 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### Migrating to Oracle DB 10g: Oracle DB Architectural Framework

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Oracle DB 10g Startup and Shutdown
- Identify key aspects of Oracle DB instance startup and shutdown.
- Initialization Parameter Files
- Identify features of initialization parameter files.

### Managing the Performance of the Database

This topic focuses on managing database performance. Using Enterprise Manager (EM), you can identify performance and tuning and the changes made to increase speed and performance. Automatic memory management is discussed along with the use of memory advisor to change the memory buffer size. Consider the following questions: Could you figure out invalid and unusable objects slowing down the DBMS and react to performance issues if you were asked to? Could you come up with a proactive approach to identifying some potential issues before they become a problem? When you are done with this topic area, you should feel confident that you can handle these challenges.

### Managing the Performance of an Oracle Database



Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 14 \("Managing Database Performance"\)](#)

This chapter discusses how to troubleshoot invalid and unusable objects, gather optimizer statistics, view performance metrics, and react to performance issues.

### Hands-on Exercises

Complete the following exercises in [chapter 14 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 14-1: Repairing Invalid Objects
- Exercise 14-2: Repairing Unusable Indexes
- Exercise 14-3: Automating Statistics Collections

### End of Chapter Questions

In [chapter 14 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 14 review and then answer the questions at the end of the chapter

### More on the Database Performance

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 9 \("Proactive Database Maintenance and Performance Monitoring"\)](#)

This provides additional information and reinforces the database performance issues.

### Exam Essentials and Review Questions

Review the exam essentials and complete the review questions in [chapter 9 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### Migrating to Oracle DB 10g: Oracle DB Architectural Framework

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Memory Components: Managing
- Identify key aspects of managing memory components.

## Maintaining Database Tablespaces and Segments



Tablespaces are locations where underlying database objects are stored. This subject area will introduce you to skills used in managing database tablespaces and segments.

Competencies covered by this subject

431.3.6 - Tablespace Management

The graduate manages tablespaces and data files.

## Managing Oracle Storage Structures

This topic focuses on managing Oracle storage and structures. The goal in this topic area is to learn how to create, manage, drop, and obtain tablespace information. The reason you would want to know these things is because you don't want to under-allocate space or over-allocate disk space for your database. Understanding the management of both logical and physical storage is a key skill required of a DBA.

### Using Tablespaces for Oracle Storage

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 6 \("Managing Oracle Storage Structures"\)](#)

This chapter defines the purpose of tablespaces and datafiles, and explains how to create and manage tablespaces. The chapter also covers obtaining tablespace information from EM and the data dictionary.

### Hands on exercises

Complete the following activities in [chapter 6 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 6-1: Using Enterprise Manager to Create a Tablespace
- Exercise 6-2: Using Enterprise Manager to Alter a Tablespace
- Exercise 6-3: Using Enterprise Manager to Drop a Tablespace

### End of Chapter Questions

In [chapter 6 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 6 review and then answer the questions at the end of the chapter.

### More on the Tablespaces

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 3 \("Database Storage and Schema Objects"\)](#)

This chapter provides more in-depth information on segments, extents, and data blocks. These are the basic and critical elements on which tablespaces are built.

### Exam Essentials and Review



Review the exam essentials and complete the review questions in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## Migrating to Oracle DB 10g: Oracle DB Architectural Framework

Access the following module in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following areas:

- Tablespaces: Overview
- Identify key aspects of tablespaces and data files.
- Tablespaces: Creating
- Sequence the steps to create a new tablespace.
- Tablespaces: Storage
- Identify key aspects of storage for locally managed tablespaces.
- Tablespaces in Preconfigured Databases
- Match tablespaces in the preconfigured database with their descriptions.
- Tablespaces: Altering
- Identify ways to alter a tablespace.
- Tablespaces: Managing
- Identify tasks that can be performed with tablespaces.

## Storage Structures and Database Relationships

Learn how to manage storage structures within the Oracle database and explain key features and benefits of ASM.

Competencies covered by this subject

431.3.10 - Storage Structures and Relationships

The graduate identifies storage structures and relationships within databases.

### Key features and benefits of ASM

Automatic Storage Management (ASM) is what Oracle database provides for managing your disks. This section will cover the key features and benefits of ASM in an Oracle environment. When you have finished this section, you should understand how to set up initialization parameter files, execute SQL commands, and start up and shut down for ASM instances.

### What Is ASM?

Read the sections listed below from [chapter 33 \("Managing Storage with Automatic Storage Management"\) from Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#).

- Overview
- The Purpose of a Logical Volume Manager
- The ASM Architecture



*Note: This chapter covers the ASM architecture in great depth. The Oracle 10g Administrator I exam only requires that you are familiar with the key features and benefits, not that you can actually set up initialization parameters files, execute SQL command, or shut down ASM instances. Thus, as you are reading through this chapter, read to learn what the key features and benefits of ASM are.*

## Data Dictionary and Its Place in the Oracle Database

This section will help you understand what a data dictionary is, how it relates to the creation of a database, when one is created, and about the overall management of the Oracle Database data dictionary.

Competencies covered by this subject

431.3.13 - Data Dictionary

The graduate Identifies content, usage, and profiles for data dictionaries.

### The Database Data Dictionary

In this section, you will learn about what a data dictionary is, what is stored in it, how it is used, and what the different types of profiles associated with a data dictionary are.

#### Review of the Data Dictionary

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 3 \("Creating an Oracle Database"\)](#)

[This chart](#) will tell you which sections and aspects to pay attention to as you read this chapter.

## Creating a Secure Database Environment

Identify and create the necessary measures to secure a database. This includes authentication, user security, and table level access by users. One of the safest principles to follow when deciding what level of access to provide to a computer system is that of least privilege. This section will cover how to apply that principle and how to manage and implement different security features in an Oracle database.

Competencies covered by this subject

431.3.5 - Application, Secure Access, Authentication Management, and Single Sign-on Deployment

The graduate identifies application software, configures secure access, manages authentication, and deploys single sign-on technology.

### Securing the Database

This topic focuses on managing database constraints, views, and sequences. These database objects assist in maintaining data integrity, limiting direct access to data and providing consistency in assigning sequential numbers. This topic also focuses on application, secure access, and authentication management. As you are working your way through this topic area, be sure to take note of the best practices that should be applied toward applying the tightest security levels possible.

#### Database Security, Privileges, Passwords, and Auditing



Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 11 \("Securing the Oracle Database"\)](#)

This chapter discusses the application of least privilege, default accounts, password security measures, and audit activity.

### **Hands-on Exercises (1)**

Complete the following exercises in [chapter 11 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 11-1: Creating and Using Password Profiles
- Exercise 11-2: Enabling Auditing

### **End of Chapter Questions**

In [chapter 11 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 11 review and then answer the questions at the end of the chapter.

### **More on the Database Security and Control**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 6 \("User Administration and Security"\)](#)

This chapter deals with user administration and database security. It also addresses topics such as applying the principle of least privilege, managing default accounts, implementing standard, understanding password security features, auditing database activity, and registering for security updates.

### **Hands-on Exercises (2)**

Review the various examples and experiment with the syntax for the constraints in [chapter 6 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 322-349.

### **Exam Essentials and Review Questions**

Review the exam essential and complete the review questions in [chapter 6 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## **Setting Up and Managing Database Users**

This subject introduces you to the enterprise manager and how to identify and create the necessary measures to secure users in a database.

Competencies covered by this subject



## 431.3.14 - User Management





The graduate describes how to create and manage users, privileges, and password security in databases.

## User Setup and Database Interaction

This topic focuses on user roles, privileges, profiles and password changes once the user has been created. As a DBA, you will be responsible for administration of database users. Part of the responsibility includes granting and revoking privileges, creating and managing roles of users, and using profiles to control resource usage. Be sure to try the exercises included in the readings. They are helpful in familiarizing you with what it takes to lock down your database.

### Taking Care of the User

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 7 \("Administering Database Users"\)](#)

This chapter discusses the creation and management of database user accounts, roles, privileges, and resource control.

### Hands-on Exercises (1)

Complete the following exercises in [chapter 7 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 7-1: Using Enterprise manager to create a database user.
- Exercise 7-2: Using Enterprise manager to grant system privileges.
- Exercise 7-3: Using Enterprise manager to grant object privileges.
- Exercise 7-4: Using Enterprise manager to create and manage roles.
- Exercise 7-5: Using Enterprise manager to create and manage profiles.

### End of Chapter Questions

In [chapter 7 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 7 review and then answer the questions at the end of the chapter.

### More on the Use and Care of Database Users

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 6 \("User Administration and Security"\)](#)

This chapter deals with user administration and database security. In this topic we will deal only with user administration:

- Creating and managing database user accounts
- Creating and managing roles
- Granting and revoking privileges



- Controlling resource usage by users

## Hands-on Exercises (2)

Review the various examples and experiment with the syntax for the constraints in [chapter 6 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 311-322.

## Exam Essentials and Review Questions

Review the exam essentials and complete the review questions in [chapter 6 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

# Creating a Secure Database Environment by Managing Tables

In this section you'll be introduced to proper creation and management of database tables, including users, schemas, and schema objects. You will also be introduced to datatypes, creating tables, constraints, indexes, and views.

Competencies covered by this subject

431.3.15 - User Security

The graduate can demonstrate creating and managing tables.

## Creating and Securing Tables Through User Ownership

This topic focuses on user interaction with the database at the table level. This includes fine-grained auditing, least privileges and monitoring user table/database activity. Creating tables can sometimes be confusing especially as you are naming different types of objects. Pay attention to which objects share the same namespaces and appropriate table names. Also be sure to review the areas within this section that discuss views, DML, and what the relationship between views and user permissions is.

## Taking Care of the User Tables

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 8 \("Managing Database Objects"\)](#)

This chapter discusses the creation and management of tables, views, indexes, and constraints. We will review how tables relate users and ownership.

## Hands-on Exercises

Complete the following exercises in [chapter 8 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 8-1: Creating Tables and Constraints

## End of Chapter Questions



In [chapter 8 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 8 review and then answer the questions at the end of the chapter for items related to tables and user ownership.

## Managing Database Data and Files

This area adds on concepts from Maintaining Database Tablespaces and Segments. Now that you know how to create database files, you will learn how to identify and apply techniques for managing database files and data.

Competencies covered by this subject

431.3.7 - Data and Database Management

The graduate identifies and applies appropriate techniques for managing data within databases.

## Administering Database Constraints, Views and Sequences

This topic focuses on managing database constraints, views, and sequences. These database objects assist in maintaining data integrity, limiting direct access to data and providing consistency in assigning sequential numbers. We covered many of these concepts last week. This week, we want you to dig a little deeper and read a little more. Be sure to do all of the exercises to ensure you have understood these concepts.

### More on the Use of Tables and User Ownership

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 3 \("Database Storage and Schema Objects"\)](#)

This chapter deals with multiple topics, and we will review the section on tables. In this chapter you will be reviewing storage structures and managing schema objects. Be sure to navigate to the "Exam Objectives" area in the chapter.

### Hands-on Exercises (1)

Review the various examples and experiment with the syntax for the constraints in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 158-165.

### Exam Essentials and Review Questions (1)

Review the exam essential and complete review questions in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### Hands-on Exercises (2)

Complete the following exercises in [chapter 8 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 8-2: Using Constraints, Views, and Sequences

### Hands-on Exercises (3)



Review the various examples and experiment with the syntax for the constraints in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 165-172.

### **Exam Essentials and Review Questions (2)**

Review the exam essential and complete review questions in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## **Recovering Oracle Databases**

This topic focuses on database recovery. We will discuss in more detail the performing of backup and recovery. Did you know that it is impossible to corrupt an Oracle database? This topic will introduce you to recovery techniques for varying issues that you may run into when working with Oracle databases. Pay close attention to how to recover from the loss of control files, redo log files, system-critical datafiles, and nonsystem-critical datafiles.

### **Managing Database Recovery**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 20 \("Recovering Oracle Databases"\)](#)

This chapter discusses the recovery of lost control files, redo logs, system-critical datafiles, and nonsystem-critical datafiles.

### **Hands-on Exercises (1)**

Complete the following exercises in [chapter 20 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 20-1: Recovering from loss of a multiplexed controlfile
- Exercise 20-2: Recovering from loss of a multiplexed lof online file
- Exercise 20-3: Recovering from loss of a noncritical datafile

### **End of Chapter Questions**

In [chapter 20 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 20 review and then answer the questions at the end of the chapter.

### **More on the Database Recovery**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 11 \("Implementing Database Recovery"\)](#)

This chapter deals specifically with recovery concepts and recovery. We will deal only with the following concepts in this topic:



- Types of failure that may occur
- Tuning for instance recovery
- Working with primary key constraints
- Checkpoints, redo logs, and archived logs

### Hands-on Exercises (2)

Review the various examples and experiment with the syntax for the constraints in [chapter 11 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 544-548.

### Exam Essentials and Review Questions

Review the exam essential and complete review questions in [chapter 11 of OCA Oracle Database 10g: Administration I: Exam Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## Recovery and Managing Redo Logs

This section will introduce you to ways of identifying and applying techniques for managing database redo logs.

Competencies covered by this subject

431.3.9 - Management of Log Files

The graduate manages redo log files.

### Learning to Manage Database Redo Logs

Part of database recovery includes recovering from the loss of redo logs. In order to understand the importance of redo log files, it is important to remember that to open a database three things must be true:

- All control files should be synchronized and present.
- All online datafiles should be synchronized and present.
- At least one member of each redo log group should be present.

Why are these things so important when it comes to managing redo logs? When you have completed this topic area, you should be able to comfortably answer that question.

### Managing Redo Recovery

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 26 \("Recovering Oracle Database Redo Logs"\)](#)

This chapter discusses the recovery of lost redo logs. What happens if a member of a redo log file group is lost? What if that group still has at least one member? What steps should you take to perform the recovery of a lost redo log file?

### Hands-on Exercises (1)

Review the logfile configurations on page 615 in [chapter 26 of Oracle Database 10g OCP](#)



[Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\).](#)

## End of Chapter Questions

In [chapter 26 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 26 review and then answer the questions at the end of the chapter.

## More on the Database Redo Log Recovery

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 11 \("Implementing Database Recovery"\)](#)

This chapter deals specifically with recovery concepts and recovery. We will deal only with redo logs and archived logs.

## Hands-on Exercises (2)

Review the various examples and experiment with the syntax for the constraints in [chapter 11 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 566-569.

## Exam Essentials and Review Questions

Review exam essential and complete review questions in [chapter 11 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## Performing Database Backup and Recovery

As a DBA you need to be able to identify different types of failures that might occur in a database, know how to tune an instance recovery, and understand how to manage and perform database backup and recovery. This section will introduce you to all of these concepts.

Competencies covered by this subject

431.3.16 - Backup and Recovery

The graduate performs database backup and recovery.

## Learning to Perform Database Backup and Recovery

One of the most critical elements in database maintenance and management is having in place the necessary procedures and steps to backup and then, should problems arise, to restore data to your database. This topic provides information and common sense techniques to assist you in keeping data safe. How do you backup your database without shutting down? How do you create incremental backups? How do you make the automatic backups monitor the flash recovery area? When you have completed this topic area, you should feel confident in your responses to those questions.

## Managing Database Backup and Recovery

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams*



#1Z0-042 and #1Z0-043):

- [chapter 18 \("Configuring the Database for Backup and Recovery"\)](#)

This chapter discusses the basics of backup and recovery, types of database failure, archivelogs, and the method of configuring the database for recovery.

### **Hands-on Exercises (1)**

Complete the following activities in [chapter 18 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 18-1: Instance Recovery and the MTTR
- Exercise 18-2: Multiplexing the Redo Log
- Exercise 18-3: Transition the Database to Archivelog Mode

### **End of Chapter Questions**

In [chapter 18 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 18 review and then answer the questions at the end of the chapter.

### **More on the Database Backup and Recovery**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 10 \("Implementing Database Backups"\)](#)

This chapter deals specifically with implementing backup procedures. We will deal only with the following concepts in this topic:

- Consistent backups
- Backing up without shutting down
- Incremental backups
- Automatic backups
- Image copies vs. backup sets
- Different types of backups
- Control file to trace
- Managing backups
- Using flash recovery areas

### **Hands-on Exercises (2)**

Review the various examples and experiment with the syntax for the constraints in [chapter 10 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 521-533.

### **Exam Essentials and Review Questions**

Review the exam essentials and complete the review questions in [chapter 10 of OCA Oracle](#)





[Database 10g: Administration I: Exam Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## Maintaining Data Integrity

Maintaining integrity of database files includes managing data using SQL, administering and identifying PL/SQL objects, resolving and monitoring locking conflicts, and understanding triggers and triggering events.

Competencies covered by this subject

431.3.11 - Data Integrity

The graduate demonstrates how to undo data changes and maintain data integrity.

### Administering Database Triggers and triggering events

This topic focuses on managing database triggers and the associated events. These are created in SQL (PL/SQL) syntax, and then placed in procedures and packages. This is a great way to automate many routine events in a database. Did you know that there are many types of PL/SQL database objects? What are they, and how are they related to each other? By the time you finish this topic, you should know the differences between package, package body, type body, procedures, functions, and triggers.

#### Creating Database Triggers and Events.

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 10 \("Programming Oracle with PL/SQL"\)](#)

This chapter discusses triggers, a special category of PL/SQL objects. It involves inserting, updating, and deleting data from tables, etc.

#### Hands-on Exercises (1)

Complete the following exercise in [chapter 10 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 10-2: Using DML Triggers.

#### End of Chapter Questions

In [chapter 10 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 10 review and then answer the questions at the end of the chapter that apply to triggers.

#### More on the Database Triggers

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 7 \("Managing Data With SQL, PL/SQL and Utilities"\)](#)

This chapter deals with many topics but we are interested in the creation, maintenance, and the



use of triggers. The chapters topics on triggers are:

- Working with DML Event Triggers
- Working with DLL Event Triggers
- Working with Database Event Triggers

### **Hands on exercises (2)**

Review the various examples and experiment with the syntax for triggers in [chapter 7 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 367-371.

### **Exam Essentials and Review Questions**

Review the exam essentials and complete the review questions in [chapter 7 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## **Administering Database Locks and Resolving Lock Conflicts**

This topic focuses on managing database lock and managing conflicts with having multiple users accessing the same data. The purpose of locks is to prevent multiple sessions from changing or updating your database at the same time. After you are done working in this topic area, you should be able to explain to someone why you would lock a database and how a database lock works. You should also be able to explain what the locking mechanism is, what requires a lock and what does not. You should also know what data concurrency is. By the time you are done with this topic area, you should have a solid understanding of these things!

### **Monitoring and Understanding Locks**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [chapter 17 \("Dealing with Locking"\)](#)

This chapter discusses the detection, resolution, and management of deadlocks. It explains the relationship between transactions and locks and also lock modes. Read the entire chapter.

### **Hands-on Exercises (1)**

Complete the following exercises in [chapter 17 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#):

- Exercise 17-1: Automatic and Manual Locking
- Exercise 17-2: The SELECT...FOR UPDATE Command
- Exercise 17-3: Detecting and Resolving Lock Conte
- Exercise 17-4: Automatic Deadlock Resolution

### **End of Chapter Questions**



In [chapter 17 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#), read the chapter 17 review and then answer the questions at the end of the chapter that apply to triggers.

### **More on the Database Locks**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [chapter 8 \("Managing Consistency and Concurrency"\)](#)

This chapter deals with many topics but we are interested in the use of locks. The chapter topics on locks are:

- Understanding Locks and Transactions
- Maximize Data Concurrency
- Detecting and Resolving Lock Conflicts

### **Hands-on Exercises (2)**

Review the various examples and experiment with the syntax for locks in [chapter 8 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). The samples are located on pages 416-421.

### **Exam Essentials and Review Questions**

Review the exam essentials and complete the review questions in [chapter 8 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

## **Maintaining Database Indexes**

Indexes actually have dual purposes: to enhance performance in row retrieval, and to enforce constraints. You have previously been introduced to the concept of managed database indexes. In this section, we provide a bit more detail and hands-on practice to help you really grasp the concept!

Competencies covered by this subject

431.3.12 - Index Management

The graduate manages various indexes.

### **Administering Indexes**

This topic focuses on managing database indexes. This competency deals with the creation, changes, and overall management of database indexes. Your goal for this topic is to really get comfortable with when and how to use indexes to improve the performance of data update and retrieval.

Remember, the two most common forms of indexes are B-trees and bitmap. As you work through this section, be sure you understand the difference between the two and when you would use one over the other. Also, be sure to pay close attention to the different index options available: unique index, order of index, reverse key index, composite index, function-based



index, and compressed index.

### **Bitmap vs. B\*Tree indexes**

The "[Bitmap Index vs. B-tree Index: Which and When?](#)" article linked above provides an excellent overview of when to use a bitmap index versus a B\*Tree index. This article provides many examples and explains what they call "optimizer decisions," common between both types of indexes.

You can find more about B\*Tree and bitmap index by reading the section entitled "Alternative Table Storage Structures" in [chapter 32 of the Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#).

### **Creating Database Indexes**

Read the following in *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*:

- [pp. 225-226 of chapter 8 \("Managing Database Objects"\)](#)

This is a very short discussion of how to create an index.

#### **Hands-on Exercises (1)**

Complete and enter the sample index creation scripts in [chapter 8 \(p. 225\) of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#).

#### **End of Chapter Questions**

Read the chapter 8 review and then answer the questions at the end of the chapter in [chapter 8 of Oracle Database 10g OCP Certification All-in-One Exam Guide \(Exams #1Z0-042 and #1Z0-043\)](#).

### **Additional Management of Indexes**

Read the following in *OCA Oracle Database 10g: Administration I: Study Guide (Exam 1Z0-042)*:

- [pp. 172-174 of chapter 3 \("Database Storage and Schema Objects"\)](#)

This chapter deals with creating, dropping, and altering (rebuilding) indexes.

#### **Hands-on Exercises (2)**

Complete and enter the sample index creation scripts in [chapter 3 \(pp. 173-174\) of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#).

### **Exam Essentials and Review Questions**



Review the exam essentials and complete the review questions in [chapter 3 of OCA Oracle Database 10g: Administration I: Study Guide \(Exam 1Z0-042\)](#). Review only those parts that discuss database creation.

### **Migrating to Oracle DB 10g: Oracle DB Architectural Framework**

Access the following modules in SkillSoft:

- [Migrating to Oracle DB 10g: Oracle DB Architectural Framework](#)

Focus your attention on the following area:

- Tablespaces: Altering
- Identify ways to alter a tablespace.

This activity will deal in general terms with tablespace management of indexes. Since indexes normally require separate datafiles and tablespaces, it is important to understand how they work in the tablespace environment.

### **Challenge Yourself**

Do a search on the Internet and see if you can find a diagram of a bitmap index and one of a B\*tree index. If asked to describe the structure and differences between these two types of indexes could you?

### **Review**

This section will help you review for your actual assessment.

### **SkillSoft Practice Test**

The activity in this topic will help you take the SkillSoft Practice Test.

### **Take the SkillSoft TestPrep 1Z0-042**

Access and complete the following in SkillSoft:

- [TestPrep 1Z0-042 Oracle Database 10g: Administration I Release 2](#)

There are two modes in the TestPrep: Study Mode or Certification Mode. Study Mode provides you with feedback for each question. Certification Mode does not allow you to see feedback on your responses as you go through the exam. Certification Mode is a timed exam.

### **Conclusion**



Upon completion of the activities in this course of study, you have successfully accomplished the goals of mastering the competencies set forth by WGU. By studying the chapters, lesson reviews, and the hands-on practice associated with each competency, you have acquired the knowledge and skills necessary for passing the Oracle Exam 1Z0-042 (AMV1) assessment.

## **Review of Major Points**

This course of study covers 16 competencies within the database sub-domain. The competencies and their associated chapters are:

### **Competency 431.3.1: Database Structure**

The graduate identifies, describes, and explains the structure and architectural components of a database management system (DBMS).

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
  1. Read chapter 1: Oracle Database 10g Components and Architecture
  2. Review the chapter 1 exam essentials
  3. Complete the review questions for chapter 1
  
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
  1. Read chapter 1: Basic Oracle Concepts
  2. Review chapter 1 and the review questions
  
- SkillsSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.2 Database Installation and Configuration**

The graduate selects appropriate tools and application software for installation on host machines.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
  1. Read chapter 1: Oracle Database 10g Components and Architecture
  2. Read chapter 4: Oracle Net Services
  3. Review the chapter 2 exam essentials
  4. Review the chapter 4 exam essentials
  5. Complete the review questions for chapter 4
  
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
  1. Read chapter 2: Installing Oracle Database 10g
  2. Read chapter 12: Configuring Oracle Networking



3. Exercise 2-1: Installing Oracle Database 10g
4. Exercise 12-1: Creating a Listener with Database Control
5. Exercise 12-2: Creating an Oracle Net Service Alias
6. Exercise 12-3: Configuring Dynamic Service Registration
7. Review chapter 2 and the review questions
8. Review chapter 12 and the review questions

- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.3: Maintain Control Tools**

The graduate can demonstrates how to maintain control tools.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read Chapter 7: Creating and Controlling a Database Data with SQL, PL/SQL, and Utilities
2. Chapter 9: Proactive Database Maintenance and Performance Monitoring
3. Review the chapter 7 exam essentials
4. Complete the review questions for chapter 7
5. Review the chapter 9 exam essentials
6. Complete the review questions for chapter 9

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 4: Interfacing with the Oracle Database
2. Read chapter 15: Interfacing with the Oracle Database
3. Exercise 4-1: Working with SQL Plus
4. Exercise 4-1: Working with iSQL Plus
5. Exercise 15-1: Generating an ADDM Report
6. Exercise 15-2: Configuring Alerts
7. Review chapter 4 and the review questions
8. Review chapter 15 and the review questions

- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.4: Server Configuration and Task Management**

The graduate configures servers and manages tasks associated with server functions.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read chapter 2: Creating and Controlling a Database-Initialization Files and Startup/Shutdown of Database
2. Read chapter 9: Proactive Database Maintenance and Performance Monitoring
3. Review the chapter 2 exam essentials





4. Complete the review questions for chapter 2
5. Review the chapter 9 exam essentials
6. Complete the review questions for chapter 9

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 5: Managing Oracle Processes.
2. Read chapter 14: Managing Database Performance.
3. Exercise 5-1: Starting up and shutting down your database with SQL Plus
4. Exercise 5-2: Starting up and shutting down your database control
5. Exercise 5-3: Viewing parameters with database control
6. Exercise 14-1: Repairing Invalid Objects
7. Exercise 14-2: Repairing Unusable Indexes
8. Exercise 14-3: Automating Statistics Collections
9. Review chapter 5 and the review questions
10. Review chapter 14 and the review questions

- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.5: Application, Secure Access, Authentication Management, and Single Sign-on Deployment**

The graduate identifies application software, configures secure access, manages authentication, and deploys single sign-on technology.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read chapter 6: User Administration and Security
2. Review the chapter 6 exam essentials
3. Complete the review questions for chapter 6

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 11: Securing the Oracle Database
2. Exercise 11-1: Creating and Using Password Profiles
3. Exercise 11-2: Enabling Auditing
4. Review chapter 11 and the review questions

### **Competency 431.3.6 Tablespace Management**

The graduate manages tablespaces and data files.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*





1. Read Chapter 3: Database Storage and Schema Objects
2. Review chapter 3 exam essentials
3. Complete the review questions for chapter 3

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 6: Managing Oracle Storage Structures
2. Exercise 6-1: Using Enterprise Manager to Create a Tablespace
3. Exercise 6-2: Using Enterprise Manager to Alter a Tablespace
4. Exercise 6-3: Using Enterprise Manager to Drop a Tablespace
5. Review chapter 6 and the review questions

- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.7 Data and Database Management**

The graduate identifies and applies appropriate techniques for managing data within databases.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read chapter 3: Database Storage and Schema Objects
2. Read chapter 11: Implementing Database Recovery
3. Review chapter 3 exam essentials
4. Complete review questions for chapter 3
5. Review chapter 11 exam essentials
6. Complete review questions chapter 11

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 20: Recovering Oracle Database
2. Exercise 8-2: Using Constraints, Views, and Sequences
3. Exercise 20-1: Recovering from loss of a multiplexed controlfile
4. Exercise 20-2: Recovering from loss of a multiplexed online lof file
5. Exercise 20-3: Recovering from loss of a noncritical datafile
6. Review chapter 8 and the review questions
7. Review chapter 20 and the review questions

### **Competency 431.3.8: Create a Database**

The graduate creates and manages databases.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read chapter 2: Creating and Controlling a Database



2. Review chapter 2 exam essentials
  3. Complete the review questions for chapter 2
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
1. Read Chapter 3: Creating an Oracle Database
  2. Exercise 3-1: Creating a database with database configuration assistant (DBCA).
  3. Review chapter 3 and the review questions
- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.9: Management of Log Files**

The graduate manages redo log files.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
1. Read chapter 11: Implementing Database Recovery
  2. Review chapter 11 exam essentials
  3. Complete the review questions for chapter 11
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
1. Read chapter 26: Recovering Oracle Database Redo Logs

### **Competency 431.3.10: Storage Structures and Relationships**

The graduate identifies storage structures and relationships within databases.

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
1. Read chapter 33 ("Managing Storage with Automatic Storage Management")

### **Competency 431.3.11 Data Integrity**

The graduate demonstrates how to undo data changes and maintain data integrity.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
1. Read Chapter 7: Managing Data with SQL, PL/SQL and Utilities.
  2. Read Chapter 8: Managing Consistency and Concurrency
  3. Review chapter 3 exam essentials
  4. Complete review questions for chapter 3



5. Review chapter 7 exam essentials
6. Complete review questions for chapter 7

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 8: Managing Database Objects
2. Read chapter 10: Programming Oracle with PL/SQL.
3. Read chapter 17: Dealing with Locking
4. Exercise 8-1: Creating tables and constraints
5. Exercise 8-2: Using Constraints, Views, and Sequences
6. Exercise 10-2: Using DML Triggers
7. Exercise 17-1: Automatic and Manual Locking
8. Exercise 17-2: The SELECT...FOR UPDATE Command
9. Exercise 17-3: Detecting and Resolving Lock Conte
10. Exercise 17-4: Automatic Deadlock Resolution
11. Review chapter 8 and the review questions
12. Review chapter 10 and the review questions
13. Review chapter 17 and the review questions

### **Competency 431.3.12 Index Management**

The graduate manages various indexes.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*

1. Read Chapter 3: Database Storage and Schema Objects
2. Review chapter 3 exam essentials
3. Complete review questions for chapter 3

- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*

1. Read chapter 8: Managing Database Objects (Indexes)
2. Review chapter 8 and the review questions

- SkillSoft Course: "Migrating to Oracle DB 10g: Oracle DB Architectural Framework"

### **Competency 431.3.13: Data Dictionary**

The graduate identifies content, usage, and profiles for data dictionaries.

- See Competency 431.3.6: Table Management.

### **Competency 431.3.14: User Management**



The graduate describes how to create and manage users, privileges, and password security in databases.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
  1. Read chapter 6 ("User Administration and Security")
  2. Review chapter 6: Exam essentials
  3. Review chapter 6: Complete review questions
  
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
  1. Read chapter 7: Administering Database Users
  2. Exercise 7-1: Using Enterprise manager to create a database user
  3. Exercise 7-2: Using Enterprise manager to grant system privileges
  4. Exercise 7-3: Using Enterprise manager to grant object privileges
  5. Exercise 7-4: Using Enterprise manager to create and manage roles
  6. Exercise 7-5: Using Enterprise manager to create and manage profiles
  7. Review chapter 7 and the review questions

### **Competency 431.3.15: User Security**

The graduate can demonstrate creating and managing tables.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
  1. Read Chapter 3: Database Storage and Schema Objects
  2. Review chapter 3: Exam essentials
  3. Review chapter 3: Complete review questions
  
- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
  1. Read chapter 8: Managing Database Objects
  2. Exercise 8-1: Creating tables and Constraints
  3. Review chapter 8: Chapter review and questions

### **Competency 431.3.16: Backup and Recovery**

The graduate performs database backup and recovery.

- *OCA Oracle Database 10g: Administration I: Exam Guide (Exam 1Z0-042)*
  1. Read Chapter 10: Implementing Database Backups
  2. Review chapter 10: Exam essentials
  3. Review chapter 10: Complete review questions



- *Oracle Database 10g OCP Certification All-in-One Exam Guide (Exams #1Z0-042 and #1Z0-043)*
  1. Read chapter 18: Configuring the Database for Backup and Recovery
  2. Exercise 18-1: Instance Recovery and the MTTR
  3. Exercise 18-2: Multiplexing the Redo Log
  4. Exercise 18-3: Transition the Database to Archivelog Mode
  5. Review chapter 18: Chapter review and questions

## **Transfer and Application to Work**

Acquiring knowledge from textbooks is only part of the learning process. The ultimate goal of learning is to turn knowledge into skills that can be readily applied in the practical field. The following are some recommendations for transferring knowledge acquired through textbooks into practical skills in the real work environment:

### **Emphasis on Course of Study Activities**

Practice makes perfect. Hands-on practices help turn short-term memory into long-term memory. Personal experiences also help reinforce learning outcomes.

### **Research Solutions Through Various Channels**

There are many ways to research solutions on issues associated with continuity planning and disaster recovery, including the use of the internet to look for solutions that are not addressed in textbooks. Since new issues may appear in the real work environment, textbooks are not good enough to cover all of them. Learning through research helps explore new solutions to new problems.

### **Collaborate and Cooperate with Peers or Other Students**

There are different ways of learning, including the use of cooperation and collaboration to facilitate learning processes. Working with your coworkers, fellow classmates, and even with other students in the learning community will definitely exert positive impact on your learning outcomes.

## **Next Steps: Take the Assessment**

Once you have completed all the tasks associated with the competencies, chapters, activities, lesson reviews, hands-on practices, and preassessment(s), you can start scheduling for the actual assessment at a PearsonVue testing center. The following are the steps necessary for making arrangements for the actual assessment:



Request a referral for your Oracle Exam 1Z0-042 (AMV1) assessment for Database 10g administration by logging into your Degree Plan. Then click on the "ALV1" link, and then the "Assessment Referral" tab.

1. Follow the step-by-step procedures necessary for referring your assessment and submit the referral as needed.
2. Once your mentor has approved the referral, you will receive a voucher number from the Vendor Assessment Department.
3. With the voucher number, you will need to contact a PearsonVue Testing Center (<http://www.pearsonvue.com>) to arrange the actual date for the real assessment.
4. Go for the test, scan your test results into PDF format, and then submit it to the Vendor Assessment Department ([vendorassessments@wgu.edu](mailto:vendorassessments@wgu.edu)) and copy your mentor.
5. Please contact your mentor if your Degree Plan does not reflect if you pass your AMV1 assessment Oracle Database 10g Administration I (1Z0-042) exam).

Our best wishes for you in taking the Oracle Exam 1Z0-042 (AMV1) assessment!

## **Feedback**

WGU values your input! If you have comments, concerns, or suggestions for improvement of this course, please submit your feedback using the following form:

- [Course Feedback](#)

## **ADA Requirements**

Please review the [University ADA Policy](#).