This course of study (i.e., sequential lesson plan) outlines the sequence of learning activities needed to develop your skills in the subject area of Database Fundamentals I. The competencies outlined in the course will be evaluated by assessment 1D0-541, CIW v5 Database Design Specialist. This course of study will require up to nine weeks to complete, depending on your database experience and time commitment. Consult with your mentor if you wish to accelerate. This course of study is designed for independent learning, paced by your mentor, and supported by the content expertise of the course mentor. It is important that you follow the activities sequentially as you prepare for your assessment.

Introduction

To prepare you for the WDV1 Database Fundamentals I assessment (CIW v5 Database Design Specialist), you will learn how to plan and design relational databases. You will learn the theory behind relational databases, relational database nomenclature, and relational algebra. The course provides technical information about Structured Query Language (SQL) and teaches you how to optimize databases through normalization. You will use your knowledge to explore the intricacies of database design methodology. Hands-on labs will develop your skills in secure database design and the construction of database management systems.

Database administrators, managers, and related job roles manage the storage and distribution of data in organizations; they also help collate, analyze and present data in a way that is useful for decision makers. Databases must be carefully designed to accommodate the millions of bits of entering data, and to scale to match the demands of growing and changing organizations.

Database knowledge and design are in high demand in the workplace. This course of study will help to supplement your current IT knowledge, as well as take full advantage of your previously gained IT skills and abilities. Databases account for a large majority of the development, application, and administrative functions in IT organizations. Database skills, coupled with certain other technical skills such as Web technology, project management and networking will qualify you to design and administer databases in such diverse industries as finance, medicine, online retailing and many others. These skills, acquired at WGU, along with others will combine to increase your skill set for success in your degree and in the workplace.

There are several academic competencies associated with this course of study. These will be addressed in the coming weeks.

Competency: Relational Database FundamentalsThe graduate distinguishes between basic database terms and concepts, their usage, and the types of database languages.

Competency: Relational Database Design and ApplicationThe graduate demonstrates ability to review, select appropriate database designs, and identify the solution to address the application needs.

Competency: NormalizationThe graduate demonstrates ability to apply normalization techniques.
Competency: Database Design
The graduate follows appropriate database design practices when creating conceptual, logical, enterprise, and physical database design models.

Competency: Structured Query Language (SQL)
The graduate applies and describes appropriate structured query language (SQL) concepts in given scenarios.

Competency: Relational Algebra and Databases
The graduate uses relational algebra for identified database operations in given scenarios.

Competency: Transactions, Currency Control and Database Security
The graduate recommends appropriate security-related configuration activities on a database system for given scenarios.

Learning Resources:

ComputerPrep textbook: CIW v5 Database Design Specialist
vCampus Online Learning Access
MySQL Tools installed on PC for labwork
Notebook
Preparing for Success

To successfully complete WDV1, 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.

Topics

Acquire Learning Resources

Arrange to obtain the learning resources listed below so there will be no delays in your studies. This document will guide you in the use of these materials. 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 AAP, you can check your contact information.

Resources

Order Computer Prep Textbook
Enroll through the "Learning Resource" tab of your AAP.

The ComputerPrep textbook, CIW v5 Database Design Specialist, is shipped directly to your home. The textbook comes with a CD that contains the lab exercises. This book cannot be shipped to a post office box, so let your mentor know if your mailing address needs correction. Enroll through the "Learning Resource" tab of your AAP.

Register for vCampus Online
A key for online registration for Web-based vCampus access is sent via e-mail (to your WGU account) when the ComputerPrep textbook is ordered. NOTE: Be sure to check your "junk mail" folder if you do not receive this e-mail within 1 week of enrolling in the resource. You should receive an e-mail from ComputerPrep after you enroll in the the "ComputerPrep Text Book." If you do not receive an e-mail with your Vcampus login information, contact your mentor and they will help track it down for you.

Install MySQL onto PC
The MySQL installation files are located on the CIW website. Click on each of the URL links listed below and save the files to your PC. Open and install each file. Once you have installed the files, follow the set-up guide located in the ComputerPrep textbook located on page xiv.

For the MySQL 5.0 Server:ftp://WGUDB:WGUstc33@64.128.206.136/mysql-essential-5.0.90-win32.msi

For the MySQL 5.0 Browser:ftp://WGUDB:WGUstc33@64.128.206.136/mysql-gui-tools-5.0-r17-win32.msi

The MySQL GUI tool must be loaded onto your PC for completing the lab work after studying
each lesson. The lab work will support your studies in the ComputerPrep textbook, and allow you to create a work sample that can be used in your portfolio later in your degree program-or as a source of ideas for your culminating capstone project.

Note: The lab work can be found at the end of the textbook and on the accompanying CD.

The mock business used in this on-going laboratory study is called ProAudio-a business that sells audio compact disks. The first issue at hand is to design a database that will allow customers and employees to search for a particular CD by title, artist or producer. The management also wants to be able to track store locations, distributors, and employees in the database. Your goal is to come up with a viable database design that is based on the requirements listed above. As you continue to work on this database in the lab, you will learn about the database technologies and concepts.

Download Notepad++
URL: http://notepad-plus.sourceforge.net/uk/site.htm

You will need an editor to write SQL scripts. Notepad++ is a free and color-coded text editor that you can use.

Create 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. Suggested divisions include:

Glossary
Study notes
Competency review notes
Helpful Web sites
MeasureUp Pre-Assessment

This pre-assessment is supplied by MeasureUp and provided to you by your mentor.

Topics

MeasureUp Pre-Assessment

Take the pre-assessment and use the results to further focus your studies on those topics where you may have less skill and experience.

Resources

Request MeasureUp Pre-Assessment
Request a MeasureUp pre-assessment exam for the WDV1 from your mentor. The registration key and instructions will arrive by e-mail.

Take the MeasureUp Pre-Assessment
Take the MeasureUp pre-assessment exam and watch for the results to arrive by e-mail immediately after exam completion.
Relational Database Fundamentals

This will help you to understand the concepts and design methodologies behind relational databases; basic database types and management systems; common database languages and their purposes; language subsets of Structured Query Language (SQL); and relational data modeling schemas, characteristics, and manipulation.

Topics

Relational Database Fundamentals - Introduction to Databases

This topic focuses on defining the terms database and relational database. It also looks at different types of databases and defines database management systems (DBMS). The database skills link to all other areas in the IT degree. Acquiring knowledge of database technology will boost your individual marketability and applicability. As you complete the readings and tasks for this topic, ask yourself these questions:

Can I define file-based databases?
Can I explain the evolution of databases?
Do I know the origins of relational databases?
Can I present a brief explanation of database architecture?

Resources

Read Introduction to Databases
While reading the Lesson 1 text material in your ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #1 - Using a Flat File
In this lab, you will examine and use a file-based database. You will examine a DOS batch program written to access the file and extract a particular dataset from the database file. This lab will demonstrate the inflexibility of programs used to access flat-file databases, as well as the problems that might occur when trying to further manipulate a result set from such a database. The lab work can be found at the end of the textbook and on the accompanying CD.

Note: You do not need to actually run the batch program to understand the objective of this lab. If you cannot or do not want to run the DOS batch program, follow the steps of the lab and study the screen captures provided. Following the steps of the lab will allow you to grasp the lab's
Relational Database Fundamentals - Database Fundamentals

This topic covers the concepts of views, database languages, and data dictionaries. As you complete the readings and tasks for this topic, ask yourself these questions:

Can I explain the characteristics of relations?
Can I explain the use of a data model in database design?
Can I describe entities and data relationships in a DBMS?
Can I explain the need for relational integrity in database development?
Can I use of database languages in a DBMS?
Do I know what a data dictionary is?

Resources

Read Relational Database Fundamentals
While reading the Lesson 2 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #2 - Using MySQL Query Browser
This lab provides a brief introduction to the DBMS used in this course. Though not formally introduced to the course until a later lesson, this lab will provide an opportunity to familiarize you with MySQL AB's MySQL 5.0 Community Server DBMS and the MySQL 5.0 Query Browser.

Specifically, you will learn how to log on to the DBMS, create a schema, create a simple table, and load and manipulate sample data. You will then view the metadata that the MySQL 5.0 DBMS maintains for its databases. The lab work can be found at the end of the textbook and on the accompanying CD. Now that you have completed Lab #2, complete the exercises in Activity 3.

Complete vCampus Exercises for Lesson 2
After finishing the reading and lab work, complete the vCampus online exercises listed below to strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of study mentor.
Exercise 2-1: Entity-relationship (ER) modeling terms

Exercise 2-2: User views

Exercise 3-1: Identify database information

Exercise 4-1: Entity-relationship (ER) models

**Complete vCampus Practice Exams for Lesson 2**
After the previous activities, complete the vCampus Practice Exams, Quizzes, and Reviews below to assess your comprehension of the topic. The answers for these practice materials will be provided online after completion. If you find that you still need more time to study some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of study mentor.

Domain 1 Practice Exam-random selections of 30 questions from the Relational Database Fundamentals domain with a 55-minute time limit.

Domain 1 Self-Assessment-Relational Database Fundamentals

Domain 1 Reinforcement Test-Relational Database Fundamentals

Objective 1.1 Quiz & Objective 1.1 Review (16 questions)

Objective 1.2 Quiz & Objective 1.2 Review (14 questions)

Objective 1.3 Quiz & Objective 1.3 Review (50 questions)
Relational Database Design and Application

This lesson will help you to understand how to identify the steps of the database planning life cycle, and how to identify the activities in the conceptual design phase of creating a database.

Topics

Relational Database Design and Application - Database Planning

This topic defines the lifecycle of a database design project and planning a successful database design project. As you complete the readings and tasks for this topic, ask yourself these questions:

Do I know the role of database planning in the lifecycle of a database design project?

Can I explain the steps in a database design life cycle?

Resources

Read Database Planning

While reading the Lesson 3 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #3 - Starting the ProResumes Database

This lab will begin a database project for a company named ProRésumés. ProRésumés is a résumé service for the IT industry. The database will track employers, customers and their references. It will contain tables that represent specific portions of the customer's résumé such as software and hardware skills, and employment opportunities. The database will also track interviews for customers, including such information as the interview date, the employer involved and whether the candidate was hired. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have competed Lab #3, move on to Topic 4.

Relational Database Design and Application - Database Design Methodology

This topic covers the concept of entity-relationship modeling, and conceptual design. As you complete the readings and tasks for this topic, ask yourself these questions:
Can I explain database design methodology?

Can I list the database design phases?

Can I explain the difference between logical and conceptual database design?

Do I know how to develop an entity-relationship (ER) model?

Resources

Read Overview of Database Design Methodology
While reading the Lesson 4 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #4 - Creating ERD for ProResumes
This lab provides another opportunity for you to create an ER diagram. At this point, your ER diagram should contain the entities and attributes identified in the database requirements document created in Lab #3, as well as the types of relationships and their cardinality. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #4, complete the exercises in Activity 3.

Complete vCampus Exercises for Lesson 4
After the reading and lab work, complete the vCampus online exercises below to help strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of study mentor.

Domain 2 Practice Exam-random selections of 20 questions from the Relational Database Design and Application domain with a 35-minute time limit.

Domain 2 Self-Assessment-Relational Database Design and Application

Domain 2 Reinforcement Test-Relational Database Design and Application

Objective 2.1 Quiz & Objective 2.1 Review (18 questions)

Objective 2.2 Quiz & Objective 2.2 Review (22 questions)
Normalization

This lesson will help you to understand normalization techniques and processes; as well as initial logical database design steps and practices.

Topics

Normalization - Normalization processes

Normalization is a difficult, but important part of the logical design phase. This topic covers the normalization process. As you complete the readings and tasks for this topic, ask yourself these questions:

Can I describe the process of normalization?

Can I identify the different normal forms?

Can I explain the use of the normal forms in database design?

Resources

Read Normalization
While reading the Lesson 5 text material in the ComputerPrep Textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #5 - Normalizing the ProResumes Database
This lab provides another opportunity for you to apply normalization techniques to a database. Remember that normalization is a process designed to reduce or eliminate data redundancy in a database. In most cases normalization improves database structure, but it can cause performance problems. The database designer and database stakeholders must find the middle ground between manageable data and database performance. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #5, complete the exercises in Activity 3.

Complete vCampus Exercises for Lesson 5
After finishing the reading and lab work, complete the vCampus online exercises below to help strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the
message board, or contact the course of studies mentor.

Exercise 5-1: The normalization process

Exercise 5-2: Normal forms
Database Design

This lesson will help you understand how to interpret logical data models and how a physical data model can be implemented into by a particular database management system (DBMS).

Topics

Database Design-Logical Database Design

This topic covers the methodology used during the logical design phase. As you complete the readings and tasks for this topic, ask yourself these questions:

Can I describe a logical database design?

Do I understand the logical data model?

Do I understand the use of database definition language in DBMS?

Can I explain the use of integrity constraints in database development?

Do I understand the enterprise data model?

Resources

Read Logical Database Design
While reading the Lesson 6 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #6 - Refining & Validating the Database
In this lab, you will finalize the logical data model for the ProRésumés database. You will apply any normalization techniques that may have been needed to refine the data model. You will create DBDL statements to document the various entities and their attributes. You will then validate that model against the requirements document for the enterprise and create referential integrity constraints and add them to the DBDL statements for the ProRésumés database. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #6, complete the exercises in Activity 3.

Complete vCampus Exercises for Lesson 6
After finishing the reading and lab work, complete the vCampus online exercises below to help strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies mentor.

Exercise 6-1: Integrity constraints

Exercise 7-1: CHECK constraints

**Database Design-Physical Database Design**

This topic covers the physical database design phase. This is the final phase in creating the relational database. As you complete the readings and tasks for this topic, ask yourself these questions:

- Do I know the difference in logical and physical database design?
- Do I understand enterprise constraints?
- Can I explain how secondary indexes work in a DBMS?
- Can I explain denormalization?

**Resources**

**Read Physical Database Design**

While reading the Lesson 7 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

**Complete Lab #7-Base Relations, Constraints, Views**

In this lab you will create a schema and the base relations for the ProRésumés database. You will also create constraints and views for the data. You will use the knowledge you gained in this lesson to continue designing the ProRésumés database. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #7, complete the exercises in Activity 3.
Complete vCampus Exercises for Lesson 7
After finishing the reading and lab work, complete the vCampus online exercises below to help strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies mentor.

Domain 3 Practice Exam—a random selection of 20 questions from the Normalization and Database Design domain with a 35-minute time limit

Domain 3 Self-Assessment—Normalization and Database Design

Domain 3 Reinforcement Test—Normalization and Database Design

Objective 3.1 Quiz & Objective 3.1 Review (9 questions)

Objective 3.2 Quiz & Objective 3.2 Review (32 questions)

Objective 3.3 Quiz & Objective 3.3 Review (19 questions)
**Query Language**

This lesson will help you to understand how to identify SQL commands and syntax, statements using Data Definition Language (DDL), form commands using Data Manipulation Language (DML), Data Control Language (DCL) statements to control the access to data in a database, and how to grant users permissions for data operations.

**Topics**

**Query Language-Structured Query Language (SQL)**

This topic covers the Data Definition Language (DDL), Data Manipulation Language (DML), Data Query Language (DQL), and Data Control Language (DCL). As you complete the readings and tasks for this topic, ask yourself these questions:

- Am I able to use SQL basics to write queries?
- Can I define data definition language?
- Can I define data manipulation language?
- Can I define data control language?

**Resources**

**Read Structured Query Language**

While reading the Lesson 8 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

**Complete Lab #8-Manipulating Data in the Database**

In this lab you will have the opportunity to manipulate data in the ProRésumés database. You will use SQL INSERT statements to add data to the database. You will use UPDATE and DELETE statements to alter the data in the database. Finally, you will create queries to retrieve data from the database. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #8, complete the exercises in Activity 3.

**Complete vCampus Exercises for Lesson 8**

After finishing the reading and lab work, complete the vCampus online exercises below to help
strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies.

Exercise 8-1: Structured Query Language (SQL)

Exercise 8-2: Database-creation commands

Exercise 8-3: Insert, delete and update records

Exercise 8-4: The IN, BETWEEN, and LIKE operators

Exercise 8-5: The IN, BETWEEN, and LIKE operators

Exercise 8-6: Grant privileges

Exercise 9-1: The JOIN binary operation

**Complete vCampus Practice Exams for Lesson 8**

After finishing the previous activities, complete vCampus practice exams, quizzes, and reviews below to assess your comprehension of the topic. The answers for these practice materials will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies mentor.

Domain 4 Practice Exam—a random selection of 20 questions from the Structured Query Language domain with a 35-minute time limit.

Domain 4 Self-Assessment—Structured Query Language

Domain 4 Reinforcement Test—Structured Query Language

Objective 4.1 Quiz & Objective 4.1 Review (2 questions)

Objective 4.2 Quiz & Objective 4.2 Review (5 questions)

Objective 4.3 Quiz & Objective 4.3 Review (36 questions)

Objective 4.4 Quiz & Objective 4.4 Review (6 questions)
Relational Algebra and Databases

This lesson will help you understand how to define and describe the use of relational algebra in order to create new relationships from existing database relations and how to compose joins in a database.

Topics

Relational Algebra and Databases-Relational Algebra

This topic explains relational algebra. By successfully passing Quantitative Literacy, you have the background skills necessary to study this topic and do well. The topic also covers the algebraic symbols that represent the various operations that can be performed with relational algebra. As you complete the readings and tasks for this topic, ask yourself these questions:

- Do I know the role of selection in the maintenance of a DBMS?
- Can I define projection in relation to a database?
- Do I understand a Cartesian product?
- Can I explain the use of a union in retrieving data from a DBMS?
- Can I explain the use of joins in retrieving data from a DBMS?

Resources

Read Relational Algebra

While reading the Lesson 9 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

Complete Lab #9-Using Relational Algebra

This lab provides another opportunity for you to work with relational algebra. Remember that relational algebra is the theoretical basis for all relational database functionality. Relational algebra provides an alternative syntax to expressing the operations that can be performed on tables within an RDBMS. As your understanding of relational databases grows, you can further investigate this important aspect of relational database design and methodology. The lab work can be found at the end of the textbook and on the accompanying CD.

Once you have completed Lab #9, complete the exercises in Activity 3.
Complete vCampus Exercises for Lesson 9
After finishing the reading and lab work, complete the vCampus online exercises below to help strengthen the knowledge gained in the previous activities. The answers for these exercises will be provided online after completion. If you find that you still need more time to study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies mentor.

Domain 5 Practice Exam-a random selection of 15 questions from the Relational Algebra and Databases domain with a 25-minute time limit

Domain 5 Self-Assessment-Relational Algebra and Databases

Domain 5 Reinforcement Test-Relational Algebra and Databases

Objective 5.1 Quiz & Objective 5.1 Review (19 questions)

Objective 5.2 Quiz / Objective 5.2 Review (5 questions)
A proper Web site is critical to doing business on the Internet. This lesson will help you to understand how to define and describe the use of relational algebra in order to create new relationships from existing database relations and how to compose joins in a database.

**Topics**

**Transactions, Currency Control and Database Security**

This topic discusses transactions, concurrency control, and security considerations in a database management system (DBMS). As you complete the readings and tasks for this topic, ask yourself these questions:

Do I understand Database transactions?

Can I list database security considerations?

Can I explain the role concurrency control in database transactions?

**Resources**

**Read Transactions and Database Security**

While reading the Lesson 10 text material in the ComputerPrep textbook, pay particular attention to the Skills Review and answer the questions at the end of the lesson. Compare your responses with the answers in the book. If you answered 75% of the questions correctly, move on to the lab. If not, review the textbook material that you answered incorrectly.

**Complete vCampus Practice Exams for Lesson 10**

Complete the vCampus practice exams, quizzes, and reviews below to assess your comprehension of the topic. The answers for these practice materials will be provided online after completion. If you find that you still need more study on some of the topics, you may return to the reading material, review the vCampus online material, visit the message board, or contact the course of studies mentor.

Domain 6 Practice Exam—a random selection of 15 questions from the Transactions, Currency Control and Database Security domain with a 25-minute time limit.

Domain 6 Self-Assessment—Transactions, Currency Control and Database Security
Domain 6 Reinforcement Test - Transactions, Currency Control and Database Security

Objective 6.1 Quiz / Objective 6.1 Review (20 questions)

Objective 6.2 Quiz / Objective 6.2 Review (7 questions)
Practice Test Review

Your next step is to take the practice exam that is supplied by vCampus online learning.

Topics

**vCampus Database Design Specialist Practice Exam**

The practice exam uses the same format as the CIW exam, and will serve as a review for the WDV1 assessment. You can take this exam through your vCampus online account. It is a random selection of 50 questions from all six Database Design Specialist Knowledge domains with a 90-minute time limit.

Resources

**Take the vCampus Practice Exam**

Take the vCampus Database Design Specialist Practice Exam. This will serve as your final review to gauge your knowledge of the content of the topics of the assessment.

**Review Practice Exam Results**

Review your practice exam results and any notes that you have added to your notebook. Use these to review any necessary items or topics to prepare for the assessment.

ExamForce

ExamForce has two parts: a testing engine and a database. It is a powerful tool because it is adaptive; i.e., it chooses questions from its database based on user weaknesses, while still providing enough questions from strong areas to maintain strength. It divides what is presented into Passes. Once you have completed three Passes, you are ready to sit for the actual exam.

Resources

**Enroll in ExamForce**

Go to the WDV1 Learning Resources tab to enroll on your AAP. You may not enroll until you have completed this COS. Shortly after enrolling, usually within 1-2 business days, you will receive an email from ExamForce with your license key and instructions. Follow them carefully to download both the test engine and the database. NOTE: ExamForce databases are quite large, possibly over 100 MB. After installation, you will occasionally receive the opportunity to download and install updates. Download and install major updates with caution because they erase your History! Minor updates do not do this. Check with your mentor before accepting a major update.

**Take the Pretest**
This is not the same as the pre-assessment that you took at the beginning of your studies. The Pretest Mode sets up initial conditions for the next Activity, Adaptive Drill Mode. Before moving on, though, take a look at the report produced from your Pretest. It will show you which exam objectives represent weaknesses for you. Additionally, it refers you to sections of its built-in review text for additional explanation.

**Adaptive Drill Mode**

Once you have reached the Adaptive Drill Mode, do not install major updates from ExamForce as this will erase your history. This warning will mention the fact that you have chosen to download a major database update. Please do not select the option to update.

You will be given a series of questions to respond to. Passes are units of progress through the ExamForce database that systematically work on your weak areas while maintaining your strengths. The ExamForce learning resource allows you to take notes as you work through the questions. If you get a question incorrect, you will be referenced to the appropriate section and chapter in the included textbook. There is a built in historical analysis system to track and monitor your activities. In order for your assessment referral to be approved, you MUST successfully complete all three phases of assessment readiness within the historical analysis system. Your results must be emailed to your mentor for confirmation.

**Email the Historical Analysis to Your Mentor**

When all three Passes are complete, email the report to your mentor. It is required as part of your record prior to approving a referral for the certification exam. The Historical Analysis report is always available either from the History button at the top of the ExamForce application, or from the Historical Analysis button in the Adaptive Drill tab. You may choose to email it using several formats, but WGU requires a pdf version, so select that option.
Conclusion

Congratulations on successfully completing the activities in this course of study! Upon completion of the practice exam, you should review any items that you may need to study more. You should also review all of the topics that you have listed in your notebook. For more assistance in your study, go back to the item in this course of study and its learning resource, go to the database learning community, or contact me. After further study, you should retake the practice exam. When you have achieved a successful result on the practice exam, you will be ready to refer for the WDV1 assessment.

Topics

Review of Major Points: Competencies for WDV1

As indicated in the introduction, this course of study covered the seven competencies needed for successful completion of WDV1. The seven competencies and their associated portions of the Learning Resources are listed below; more difficult topic which may require more intense study are indicated by an asterisk (*).

Competency 431.1.1: Relational Database Fundamentals

- ComputerPrep textbook chapter 1 ("Introduction to Databases")
- ComputerPrep textbook chapter 2 ("Database Fundamentals")
- vCampus Online Exercises: Database Fundamentals
- vCampus Practice Exams, Quizzes, and Reviews: Database Fundamentals

Competency 431.1.2: Relational Database Design and Application

- ComputerPrep textbook chapter 3 ("Database Planning")
- ComputerPrep textbook chapter 4 ("Database Design Methodology"
- vCampus Online Exercises: Database Design Methodology

Competency 431.1.3: Normalization*Normalization is the process of organizing data into tables so that the database is always used clearly and as intended. It is a refinement process after the initial identification of the data objects that should be in the database, identification of their
relationships, and defining the tables required and the columns within each table. Database normalization is a process that eliminates redundancy, organizes data efficiently, and reduces the potential for anomalies during data operations to improve data consistency and future enhancements.

ComputerPrep textbook chapter 5 ("Normalization processes")

vCampus Online Exercises: Normalization processes

Competency 431.1.4: Database Design

ComputerPrep textbook chapter 6 ("Logical Database Design")

vCampus Online Exercises: Logical Database Design

vCampus Online Exercises: Physical Database Design

Competency 431.1.5: Query Language*SQL (Structured Query Language) is called the language of databases. SQL is a standard interactive and programming language for retrieving information and updating and maintaining a database. It is widely used in both industry and academia, often for enormous, complex databases.

ComputerPrep textbook chapter 8 ("Structured Query Language")

vCampus Online Exercises: Structured Query Language (SQL)

vCampus Practice Exams, Quizzes, and Reviews: Structured Query Language (SQL)

Competency 431.1.6: Relational Algebra and Databases*Your courses in Quantitative Literacy and Quantitative Reasoning have provided a foundation for studying this topic. This is the branch of mathematics that deals with relations, for example, AND, OR, NOT, IS, and CONTAINS. In a relational database, it refers to a collection of rules for dealing with tables, for example, JOIN, UNION, and INTERSECT. The fundamental operations of relational algebra are simple operations involving one or two relations as their operands. The six basic operations of algebra are the selection, the projection, the Cartesian product, the set union, the set difference, and the rename.
Transfer/Application to Work: How Will You Apply This Knowledge?

Successful completion of the WDV1 assessment validates the basic hands-on skills and knowledge that a database professional is expected to understand and use. Skills include basic knowledge of the theory of database design and how it applies to most popular database platforms. The knowledge and skill base that are necessarily acquired to pass this assessment are valuable for individuals working in fields such as IT, database development, application development and other areas that depend on web-enabled systems for productivity.

The receipt of a passing score on the CIW v5 Database Design Specialist certification confirms that you have mastered the basic knowledge and theory of database design that applies to the most popular database platforms, and the ability to troubleshoot poorly designed databases. This vendor-neutral certification focuses on universal database design principles and SQL, along with foundational knowledge of databases in general, such as Oracle, IBM, DB2, MySQL, and others.

Next Steps: Schedule the WDV1 Assessment

Once you have completed all the tasks associated with the competencies (pre-assessments, readings, activities, hands-on practices, and practice exams), you should prepare to schedule the WDV1 assessment at a Prometric or VUE testing center. The 1D0-541 CIW v5 Database Design Specialist exam includes a random selection of 50 items that must be completed within 90 minutes. To achieve a passing score on the exam, you must correctly answer at least 39 of the 50 scored questions to achieve a total score of 75 percent or greater. Once you have submitted your passing score, you will receive a PASS on your AAP for the Database Fundamentals I Assessment.

The following are the steps necessary for making arrangements for the actual assessment:

Refer for the WDV1 assessment through your AAP.

Once your mentor has approved the referral, you will receive a voucher number by e-mail from the Vendor Assessment Department.
Using the voucher number, you will need to arrange for the actual date for the assessment through the Testing Center.

After the exam, scan your test results as a PDF document, and submit them to the Vendor Assessment Department (vendorassessments@wgu.edu) and copy (cc) them to your mentor.

Please contact your mentor if your AAP does not reflect the status of your assessment results in a day or so.

**Feedback**

If you wish to provide feedback on this Course of Study, please contact Gwendolyn Britton at gbritton@wgu.edu.

Click here to review University ADA policy.