

Database Foundations – Course Description

Overview

This course introduces students to basic relational database concepts. The course teaches students relational database terminology, as well as data modeling concepts, building Entity Relationship Diagrams (ERDs), and mapping ERDs. [Oracle SQL Developer Data Modeler](#) is utilized to build ERDs and The Structured Query Language (SQL) is used to interact with a relational database and manipulate data within the database. [Oracle Application Express](#) is utilized to provide practical, hands-on, engaging activities. Leveraging project-based learning techniques, students will create and work with projects which challenge them to design, implement, and demonstrate a database solution for a business or organization.

Available Curriculum Languages:

- Arabic, Simplified Chinese, English, French, Indonesian, Japanese, Brazilian Portuguese, Russian, Spanish

Duration

- Recommended total course time: 90 hours*
- Professional education credit hours for educators who complete Oracle Academy training: 30

** Course time includes instruction, self-study/homework, practices, projects and assessment*

Target Audiences

Educators

- Technical, vocational and 2- and 4- year college and university faculty members who teach computer science, information communications technology (ICT), data science, business or a related subject
- Secondary and vocational school teachers who teach computer science, ICT, or a related subject

Students

- Students who wish to learn the techniques and tools to design, build and extract information from a database
- Students who possess basic mathematical, logical, and analytical problem-solving skills
- Novice programmers, as well as those at advanced levels, who prefer to start learning the basis for the SQL programming language at an introductory level
- This foundational course is suitable for computer science majors and non-majors alike

Prerequisites

Required

- General knowledge of the purpose of a database

Suggested

- Previous experience with a database application

Suggested Next Courses

- Database Design and Programming with SQL

Lesson-by-Lesson Topics

Introduction

- Introduction to the Course
- Introduction to Databases
- Types of Database Models
- Business Requirements

Databases and Data Modeling

- Relational Databases
- Conceptual and Physical Data Models
- Entities and Attributes
- Unique Identifiers
- Relationships
- Entity Relationship Modeling (ERDs)

Refining the Data Model

- More with Relationships
- Tracking Data Changes
- Normalization and Business Rules
- Data Modeling Terminology and Mapping

Oracle SQL Developer Data Modeler

- Oracle SQL Developer Data Modeler
- Convert a Logical Model to a Relational Model

Mapping to the Physical Model

- Mapping Entities and Attributes
- Mapping Primary and Foreign Keys

Introduction to SQL

- Introduction to Oracle Application Express
- Structured Query Language (SQL)
- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Transaction Control Language (TCL)
- Retrieving Data Using SELECT
- Restricting Data Using WHERE
- Sorting Data Using ORDER BY
- Joining Tables Using JOIN



Prof. Hemanth Uppala <hod-bca@dayanandasagar.edu>

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Hemanth Uppala,

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1 message

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ORACLE Academy

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Your Oracle Academy Institution membership order has been processed.

Order Details

- **Order Number:** 38113331
- **Customer Support Identifier:** 21855284
- **Order Date:** 27-JUL-18
- **Institution Name:** Dayananda Sagar College of Arts, Science and Commerce
- **Faculty Contact:** Hemanth Uppala

Description

- Oracle Academy Software Bundle
- Oracle Premier Support

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Java Foundations – Course Description

Overview

This course of study engages students with little programming experience. Students are introduced to object-oriented concepts, terminology, and syntax, and the steps required to create basic Java programs using hands-on, engaging activities. Students will learn the concepts of Java programming, design object-oriented applications with Java and create Java programs using hands-on, engaging activities.

Available Curriculum Languages:

- Arabic, Simplified Chinese, English, French, Indonesian, Japanese, Brazilian Portuguese, Russian, Spanish

Duration

- Recommended total course time: 90 hours*
- Professional education credit hours for educators who complete Oracle Academy training: 30

** Course time includes instruction, self-study/homework, practices, projects and assessment*

Target Audiences

Educators

- Technical, vocational, and 2- and 4-year college and university faculty members who teach computer programming, information communications technology (ICT), or a related subject at a foundational level
- Secondary and vocational school teachers who teach computer programming

Students

- Students who wish learn Java programming and build their Object Oriented Programming experience using Java
- This course is a suitable foundational class for computer science majors, and when taught in sequence with Java Programming may be used to prepare students for the AP Computer Science A exam

Prerequisites

Required

- Oracle Academy Workshop - Getting Started with Java Using Alice
- Oracle Academy Workshop - Creating Java Programs with Greenfoot

Suggested

- Oracle Academy Course - Java Fundamentals

Suggested Next Courses

- Oracle Academy Course - Java Programming

Lesson-by-Lesson Topics

Introduction

- About the Course
- Brief History
- Setting up Java

Java Software Development

- The Software Development Process
- What is my Program Doing?
- Introduction to Object-Oriented Programming Concepts

Java Data Types

- What is a Variable?
- Numeric Data
- Textual Data
- Converting Between Data Types
- Keyboard Input

Java Methods and Library Classes

- What is a Method?
- The import Declaration and Packages
- The String Class
- The Random Class
- The Math Class

Decision Statements

- Boolean Expressions and if/else Constructs
- Understanding Conditional Execution
- switch Statement

Loop Constructs

- for Loops
- while and do-while Loops
- Using break and continue Statements

Creating Classes

- Creating a Class?
- Instantiating Objects
- Constructors
- Overloading Methods
- Object Interaction and Encapsulation
- static Variables and Methods

Arrays and Exceptions

- One-dimensional Arrays
- ArrayLists
- Exception Handling
- Debugging Concepts and Techniques

JavaFX

- Introduction to Java FX
- Colors and Shapes
- Graphics, Audio and MouseEvents

DAYANANDA SAGAR COLLEGE OF ARTS, SCIENCE AND COMMERCE
Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078

IQAC

Department of Computer Applications

Add-on Course - Online Mode

Oracle Academy - Java Foundations - June - Dec 2022

Course: BCA

Total Hours: 90 Hrs

S.No.	Reg.No	Name	Semester	Date of Completion
1	20CQSB7001	ABHIGNA PRABODH	V	12/27/2022
2	20CQSB7014	CHAITHRA M S	V	12/24/2022
3	20CQSB7015	CHANDANA B	V	12/21/2022
4	20CQSB7022	DARSHAN H	V	12/21/2022
5	20CQSB7023	DARSHAN N	V	12/23/2022
6	20CQSB7025	DEEPIKA M	V	12/26/2022
7	20CQSB7042	KUSHAL BALAJI V	V	12/27/2022
8	20CQSB7044	LANCHANA LOKESH	V	12/29/2022
9	20CQSB7047	MANJUSH G	V	12/30/2022
10	20CQSB7050	MEGHA B K	V	12/30/2022
11	20CQSB7066	PAVANA R N	V	12/22/2023
12	20CQSB7067	PAVITHRA K	V	12/16/2023
13	20CQSB7005	ADITHYA K B	V	12/16/2022
14	20CQSB7010	AYUSH P	V	12/22/2022
15	20CQSB7013	BHOOMIKA R	V	12/25/2022
16	20CQSB7040	KARTHIK P	V	12/25/2022
17	20CQSB7041	KOUSHIK M	V	12/26/2022

V. Sivabala
Oracle Academy
Coordinator

Anand Kumar
Course Coordinator

Mr. Hemant Uppala, M.Sc.
Vice-Principal
Dayananda Sagar College of Arts, Science & Commerce
Shavige Malleshwara Hills, Kumaraswamy Layout
Bengaluru - 560 111



AWARD of COURSE COMPLETION

Java Foundations

PRESENTED TO

KUSHAL BALAJI V

FOR SATISFACTORY COMPLETION OF ALL COURSEWORK

27th December 2022

A handwritten signature in black ink, appearing to read "W McCabe", written in a cursive style.

William McCabe
Vice President, Oracle Academy