ORACLE
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Cloud Curriculum

Oracle Cloud Infrastructure (OCI) leads cloud computing with a deep and broad platform of cloud services that enables customers to build and run a wide range of applications in a scalable, secure, highly available and high-performance environment.

Now, students can learn about cloud from the cloud leader.

Oracle Academy Cloud Infrastructure Foundations I and II curriculum helps students build core knowledge of cloud computing by focusing on OCI concepts and terminology. OCI Foundations I introduces students to foundational OCI concepts and terminology, focusing on the four main areas of 'Core Infrastructure', 'Database', 'Solutions, Platform and Edge', and 'Governance and Administration.' With Foundations I as a prerequisite, OCI Foundations II curriculum delves deeper into these same topics.

FREE ACCESS TO ORACLE CLOUD

Before beginning the course, we recommend that member educators sign up for and allow time for access to the free Oracle Academy Cloud Program if they have not yet done so, so learners can complete all course modules.

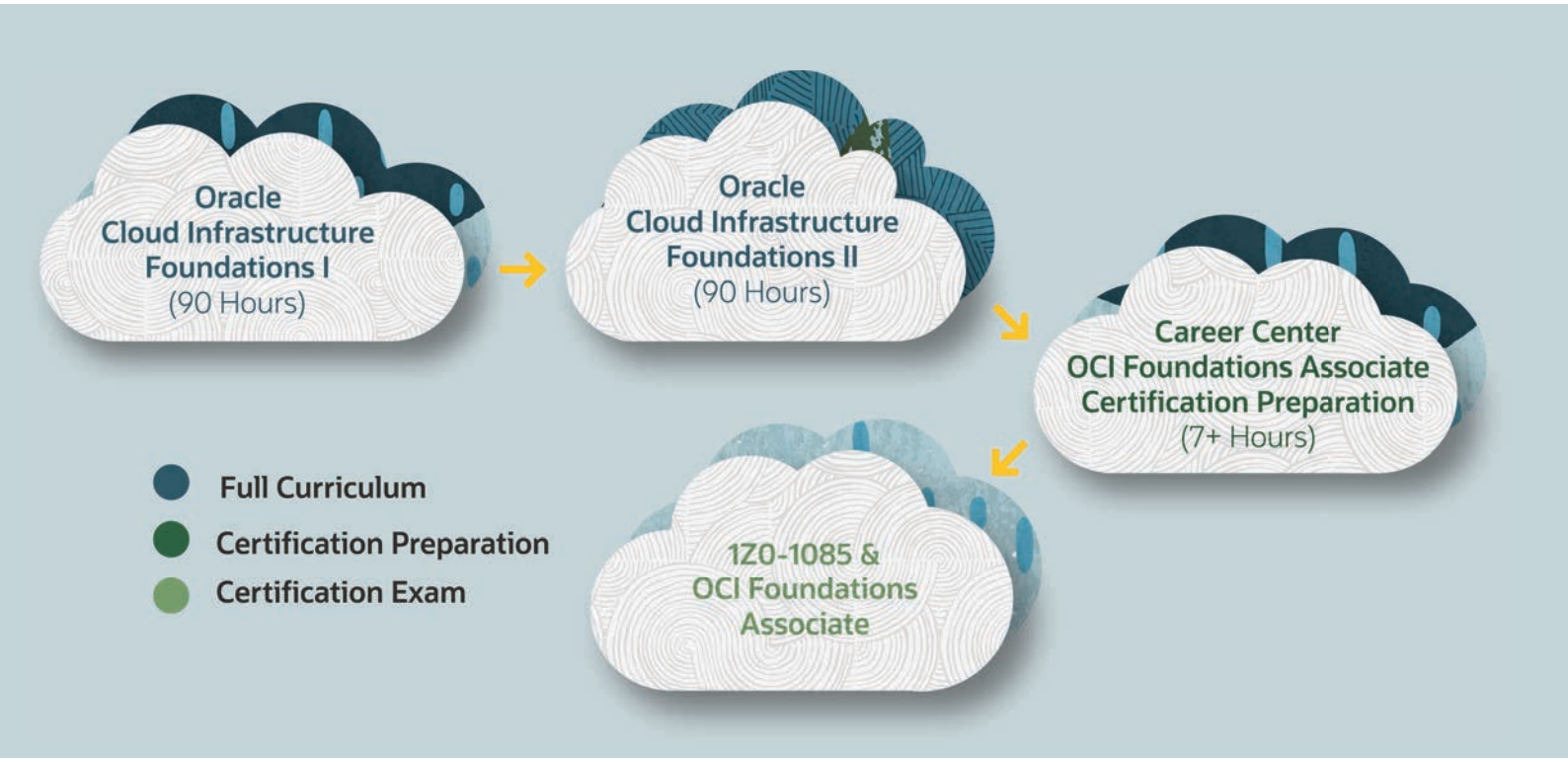
The program provides access to Oracle Cloud Free Tier, a comprehensive, standards-based combination of Oracle and open source technologies that enable users to efficiently build, deploy, integrate, secure, and manage enterprise applications.

Students must be the age of legal majority in their country of residence to access a cloud account.

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

Through this curriculum, learners gain an understanding of the infrastructure of cloud, how it works with databases, and information on security, administration, monitoring, and management.

Curriculum assets include lesson slides, corresponding videos and demonstrations, hands-on labs, and midterm and final exams. The recommended total time for each course is 90 hours*. Educators who complete Oracle Academy professional development training earn 30 continuing professional development credit hours for each course.



Oracle Academy, Oracle's global philanthropic educational program, is open to educators around the world to advance technology education, skills, innovation, and diversity and inclusion. We offer academic institutions and their educators free teaching and learning resources—including curriculum, cloud, software, and professional development—that help them prepare students with knowledge, hands-on practice, and career-relevant skills.

Join Oracle Academy today and access all the benefits of membership.

Learn more about Oracle Academy OCI Foundations curriculum at
academy.oracle.com/curriculum

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Oracle Academy Cloud Program

The **Oracle Academy Cloud Program** provides access to Oracle Cloud to Oracle Academy Institutional members and their students for classroom teaching and learning to prepare students to become tomorrow's technology innovators and leaders.

A simple signup process enables member educators and students access to always free Oracle Autonomous Database, Compute VM, object storage, data egress, and other essential building blocks developers need to create applications on top of Oracle Autonomous Databases and Compute solutions on Oracle Cloud Infrastructure.

In addition to always free services, member educators and their students receive US$300 of free credits for one year to prototype applications, run machine learning models in notebooks, or try software from Oracle Cloud Marketplace.

Supported by Oracle Academy's comprehensive curriculum and hands-on labs, educators and students can teach, build, learn, explore, and develop in the full functionality of Oracle Autonomous Database, Oracle Cloud Infrastructure, Compute VM and other essential building blocks in the classroom.

What are always free cloud services?

Infrastructure

- 2 AMD based Compute VMs with 1/8 OCPU and 1 GB memory each
- 4 Arm-based Ampere A1 cores and 24 GB of memory usable as one VM or up to 4 VMs
- 2 Block Volumes Storage, 200 GB total
- 10 GB Object Storage – Standard
- 10 GB Object Storage – Infrequent Access
- 10 GB Archive Storage
- **Resource Manager:** managed Terraform
- 5 OCI Bastions

Databases

- Your choice of Oracle Autonomous Transaction Processing. Autonomous Data Warehouse, Autonomous JSON Database, or APEX Application Development. Two databases total, each with 1 OCPU and 20 GB storage.
- NoSQL Database with 133 million reads per month, 133 million writes per month, 25 GB storage per table, up to 3 tables.

Observability and Management

- **Monitoring:** 500 million ingestion datapoints, 1 billion retrieval datapoints
- **Application Performance Monitoring:** 1000 tracing events per hour
- **Logging:** 10 GB per month
- **Notifications:** 1 million sent through https per month, 1000 sent through email per month
- **Service Connector Hub:** 2 service connectors

Additional Services

- **Flexible Load Balancer:** 1 instance, 10 Mbps
- Flexible Network Load Balancer
- **Outbound Data Transfer:** 10 TB per month
- **Virtual Cloud Networks (VCN):** Maximum of 2 VCNs, includes IPv4and IPv6 support
- **VCN Flow Logs:** Up to 10 GB per month shared across OCI Logging services
- **Site-to-Site VPN:** 50 IPSec connections
- **Content Management Starter Edition:** 5000 assets per month
- **Certificates:** 5 Private CA and 150 private TLS certificates

Features

- Easy signup from the Oracle Academy Member Hub enables members to request and access Oracle Cloud.
- Educators easily can provision student accounts, and classes are up and running in a cloud environment without the need to download, install or maintain software or databases.
- Access to Oracle Academy database curriculum is available in multiple languages:
  - Database Foundations
  - Database Design and Programming with SQL
  - Programming with PL/SQL
  - APEX – Application Development Foundations
- Teachers and students enjoy always free access to tools including Oracle APEX for low code application development, SQL Developer Web for working with Oracle Autonomous Databases, SQL Notebooks for Machine Learning, Oracle REST Data Services for web interfaces, and Oracle Instant Client for the most popular programming languages.
- Quickly start cloud services and learn new technologies including Autonomous Database, Compute VM, Linux, AI/ML, and digital assistants, and develop in SQL, NoSQL, APEX, Java, Node.js, Python, PHP, and Ruby.

In your global classroom, take advantage of Oracle Cloud technology for teaching and learning for your anytime/anywhere students—with a one-time setup, access to the latest cloud services, and with no maintenance, patching or upgrades needed, saving hours of time.

Your Oracle Academy Cloud Program access is always available, in and out of the classroom, using only an Internet browser.

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academy.oracle.com/cloud

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Database Curriculum

Capitalizing on Oracle's leadership in database, Oracle Academy offers educators rigorous, engaging database curriculum that employs industry-leading technologies to spark student curiosity and imagination and teach critical technology knowledge and skills.

Institutions and their educators can use our free modular curriculum and learning pathways to help learners expand knowledge, develop career-ready skills, and innovate. Our curriculum and resources are created by educators for educators, to offer computing education course pathways spanning from one semester to three years. Member educators receive access to professional development, curriculum, software, and teaching resources.

Our database curriculum is designed for secondary school and higher education learners. Students are able to learn and practice in Oracle Autonomous Database with the Oracle Academy Cloud Program and with Oracle APEX cloud-enabled practice environments.

With Oracle Academy curriculum, students engage in hands-on learning and develop both database and skills such as problem solving, collaboration, and critical thinking. The knowledge and practical skills students gain help them become career ready across industries.

DATABASE CURRICULUM

Database Foundations
Students with little database experience learn database design techniques, design databases using a modeling tool, and are introduced to SQL to implement and query databases using hands-on, engaging activities.

90 Hours

Applied Database Systems
Students develop a range of skills and the building blocks required to build Oracle Database solutions, including systems development with a focus on basics, applications, data integration, database resiliency and security, machine learning, and data management.

90 Hours

Database Design
Students learn to analyze complex business scenarios and create a data model (a conceptual representation of an organization's information), culminating with a project that challenges them to design a database solution for a business or organization.

90 Hours

Database Programming with SQL
Students implement database designs by creating physical databases using SQL. The curriculum introduces basic SQL syntax and the rules for constructing valid SQL statements.

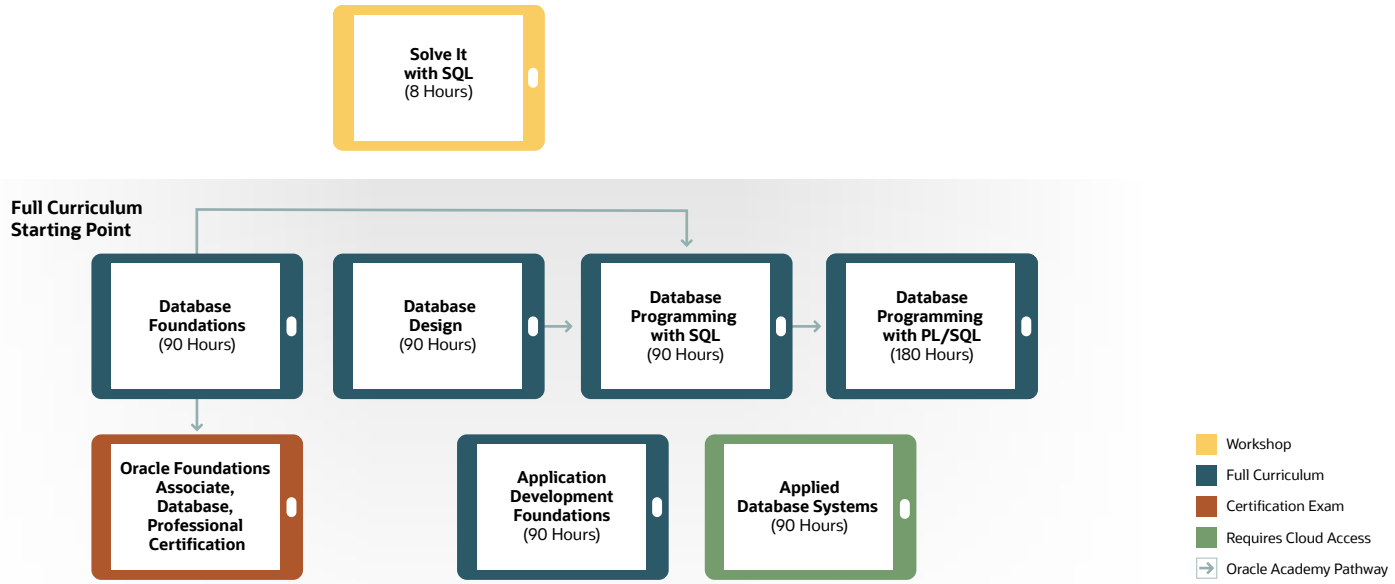
90 Hours

Database Programming with PL/SQL
Students are introduced to PL/SQL and explore how it extends and automates SQL in administering the Oracle database, and create projects to design, implement, and demonstrate a database solution for a business.

180 Hours

Application Development Foundations
Students learn techniques and tools required to develop database-driven web applications as well as how to design, develop, and deploy them using Oracle APEX.

90 Hours



DATABASE CURRICULUM LANGUAGE AVAILABILITY

Course	Arabic	Chinese (Simplified)	English	French	Indonesian	Japanese	Portuguese (Brazil)	Russian	Spanish
Database Foundations	✓	✓	✓	✓	✓	✓	✓	✓	✓
Applied Database Systems			✓						
Database Design		✓	✓		✓		✓		✓
Database Programming with SQL		✓	✓		✓		✓		✓
Database Programming with PL/SQL			✓						
Application Development Foundations			✓						

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Learn more about Oracle Academy database curriculum at **academy.oracle.com/curriculum**

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Java Curriculum

Oracle Academy offers educators rigorous, engaging computing education curriculum that employs industry-leading technologies to spark student curiosity and imagination and teach critical technology knowledge and skills.

Institutions and their educators can use our free modular curriculum and learning pathways to help learners expand knowledge, develop career-ready skills, and innovate. Our curriculum and resources are created by educators for educators, to offer computing education course pathways spanning from one semester to three years. Member educators receive access to professional development, curriculum, software, and teaching resources.

For object-oriented programming (Java), Oracle Academy courses Java Fundamentals, Java Foundations and Java Programming are designed for secondary school and higher education learners.

Artificial Intelligence with Machine Learning in Java is suited for more advanced students who have gained fundamental knowledge of object-oriented concepts, data structures, recursion, and Java terminology and syntax from those previous courses.

With Oracle Academy curriculum, students engage in hands-on learning in Java and also develop problem-solving, collaboration, and critical-thinking skills to help them become career ready across industries.

JAVA CURRICULUM

Oracle Academy Java for AP Computer Science A
Introduces secondary/high school students to Java knowledge, skills, and hands-on practice and prepares them for the College Board AP Computer Science A exam and Oracle Foundations Associate, Java, professional certification.

180 Hours

Java Fundamentals
Engages students who have little or no programming experience. They are introduced to object-oriented programming concepts, terminology, and syntax using hands-on, engaging activities on easy to use

basic Java programs.

90 Hours

Java Foundations
Engages students who have little Java programming experience using a standard Java editor. They are introduced to object-oriented programming concepts, terminology, and syntax, and the steps required to create basic Java programs.

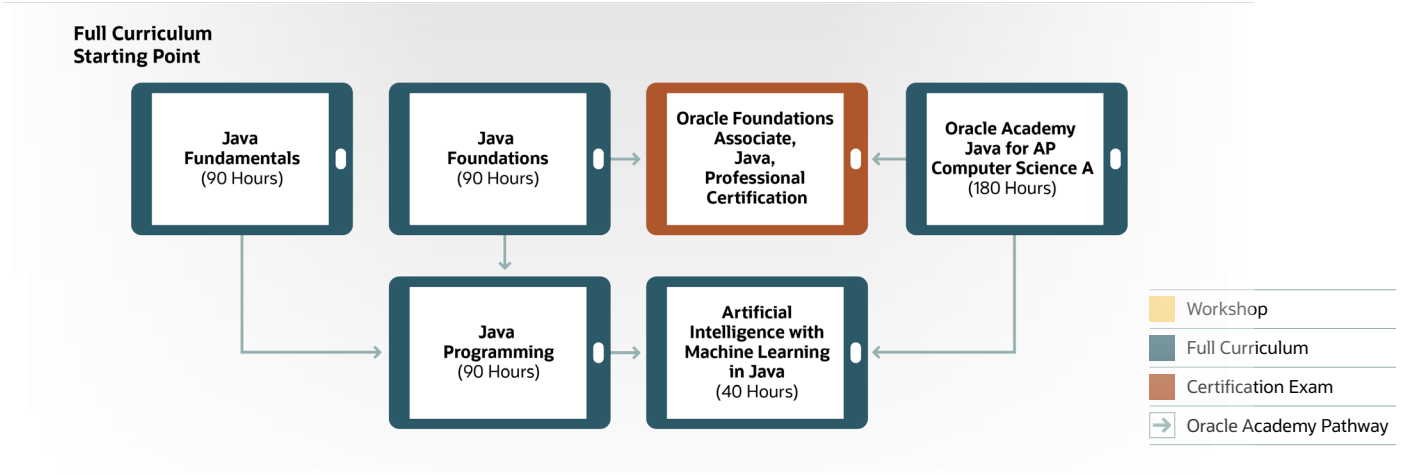
90 Hours

Java Programming
Builds on the skills gained in Java Fundamentals or Java Foundations to help students advance their Java programming skills. Participants design object- oriented programming applications and programs with Java using hands-on, engaging activities.

90 Hours

Artificial Intelligence with Machine Learning in Java
Building on the skills gained in Java Foundations and Java Programming, students learn and practice machine learning concepts within artificial intelligence. They are introduced to the terminology, syntax, and steps required to create a machine learning solution in Java using hands-on, engaging activities.

40 Hours



JAVA CURRICULUM LANGUAGE AVAILABILITY

Course	Arabic	Brazilian Portuguese	Chinese (Simplified)	English	French	Indonesian	Japanese	Russian	Spanish
Oracle Academy Java for AP Computer Science A				✓					
Java Fundamentals	✓	✓	✓	✓	✓	✓	✓		✓
Java Foundations	✓	✓	✓	✓	✓	✓	✓	✓	✓
Java Programming				✓					
Artificial Intelligence with Machine Learning in Java				✓					

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Learn more about Oracle Academy database curriculum at **academy.oracle.com/curriculum**

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Oracle Academy Java for AP Computer Science A – Course Description

Overview

This curriculum prepares students for the College Board AP Computer Science A exam, and the Oracle Java Certified Foundations Exam (1Z0-811). 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.

In addition to this course, students are expected to sign into AP Classroom (https://account.collegeboard.org) as assigned by the instructor, and explore these resources:

- AP Daily videos
- Topic Questions
- Progress Checks
- My Reports
- The Question Bank

Available Curriculum Languages:

- English

Duration

- Recommended total course time: 180 hours*
- Professional education credit hours for educators who complete Oracle Academy training: 60

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

Target Audiences

Educators

- Educators at secondary, technical, vocational, or post-secondary institutions who prepare students to take the AP Computer Science A exam

Students

- Students at secondary, technical, vocational, or post-secondary institutions who are preparing to take the AP Computer Science A exam

Prerequisites

Suggested

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

Suggested Next Courses

- Oracle Academy Java Programming

Lesson-by-Lesson Topics

Introduction

- About the Course
- A Brief History
- Computer Career Research
- 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
- Number Systems
- Textual Data
- Converting Between Data Types
- Keyboard Input

Java Methods and Library Classes

- What is a Method?
- The `import` Declaration and Packages
- Java API Documentation
- The `String` Class
- The `Random` Class
- The `Math` Class

Decision Statements

- Boolean Expressions and `if`/`else` Constructs
- Understanding Conditional Execution
- Relational Operators, Truth Tables, and De Morgan's Law
- `switch` Statement

Loop Constructs

- `for` Loops
- `while` and `do-while` Loops
- Tracing Java Loops
- Using `break` and `continue` Statements

Creating Classes

- Creating a Class
- Instantiating Objects
- Constructors

- Overloading Methods
- Java String Project
- 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`

Java AP Computer Science A Advanced Topics

- Inheritance
- Polymorphism
- Inheritance and Polymorphism Project
- Two-dimensional Arrays
- Arrays Projects
- Sorting and Searching
- Big O Notation
- Data Structures
- Sort and Search Project
- Recursion
- Computer Social, Ethical, and Risk Impacts

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Java for AP Computer Science A Curriculum

Java is a top programming language. It reduces costs, shortens development timeframes, drives innovation, and improves application services. With millions of developers running more than 51 billion Java Virtual Machines globally, Java continues to be the development platform of choice for enterprises and developers.

Learn Java from the experts

Now, students can learn Java knowledge and skills and get hands-on practice as early as secondary school with the new Oracle Academy Java for AP Computer Science A curriculum.

Through hands-on, engaging activities, this curriculum introduces learners to object-oriented programming concepts, terminology, syntax, and the steps to create basic Java programs, and provides them with the opportunity to design object-oriented applications with Java.

Get students ready for the AP test and more

This new curriculum prepares high school/secondary school students for the College Board AP Computer Science A exam as well as the Oracle Certified Foundations Associate, Java exam (1Z0-811). This curriculum also may benefit educators and students who wish to extend their Java knowledge beyond Oracle Academy Java Foundations.

The recommended total course time is 180 hours.* Educators who complete training earn 60 continuing professional development (CPD) credit hours.

While all AP Computer Science A objectives outlined by the College Board are covered in the Oracle Academy course materials, to prepare for the AP exam, students will need to study additional AP resources.

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

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Join Oracle Academy today and access all the benefits of membership.

Learn more about Oracle Academy Java curriculum at **academy.oracle.com/curriculum**

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Database Foundations – Course Description

Overview

This course of 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 date 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 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

Primavera P6 Professional Project Management Fundamentals – Course Description

Overview

This Primavera P6 Professional Project Management Fundamentals curriculum leads students through the entire project life cycle, from planning to execution. Students will develop a thorough understanding of how to plan and schedule.

Available Curriculum Languages:

- English

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 construction or engineering project management or a related subject

Students

- Students who want to understand the basic features and functionality of Oracle Primavera P6, an industry-standard software tool for project management processes

Prerequisites

Required

- None

Suggested

- Oracle Learning Library: Primavera P6 Professional

Suggested Next Courses

- Primavera P6 Professional Advanced

Lesson-by-Lesson Topics

Overview and Creating a Project

- Project Management Life Cycle
- Understanding Data in P6
- Overview and Navigation
- Creating a Project
- Creating a Work Breakdown Structure
- Adding Activities
- Assigning Calendars

Scheduling and Assigning Resources

- Creating Relationships
- Scheduling
- Assigning Constraints
- Creating Layouts
- Understanding Roles and Resources
- Optimizing the Project Plan

Baselining and Executing

- Baselining the Project Plan
- Importing and Exporting Data
- Methods of Applying Progress
- Executing the Project Plan
- Refection Projects
- Analyzing the Updated Project

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Oracle APEX

Give your students hands-on skills in application development

Your students can attain the knowledge and career-ready skills they need to master the same unbreakable no-code platform industry experts use.

Oracle APEX is the world's most popular enterprise cloud-based development platform. It enables users to build scalable, secure enterprise apps with world-class features that can be deployed anywhere — on premises or in the cloud.

Whether it's to build a new cloud and mobile app, or convert a spreadsheet into an app, with APEX, developers can quickly create and deploy apps that solve real problems and provide immediate value. APEX developers have created a wealth of solutions for challenges large and small, turning ideas into compelling apps and solutions.

RELATED COURSE — APPLICATION DEVELOPMENT FOUNDATIONS

Students learn techniques and tools required to develop database-driven web applications as well as how to design, develop, and deploy them using Oracle APEX. Students then can prepare to take the Oracle APEX Cloud Developer professional certification through Oracle University.

90 Hours

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

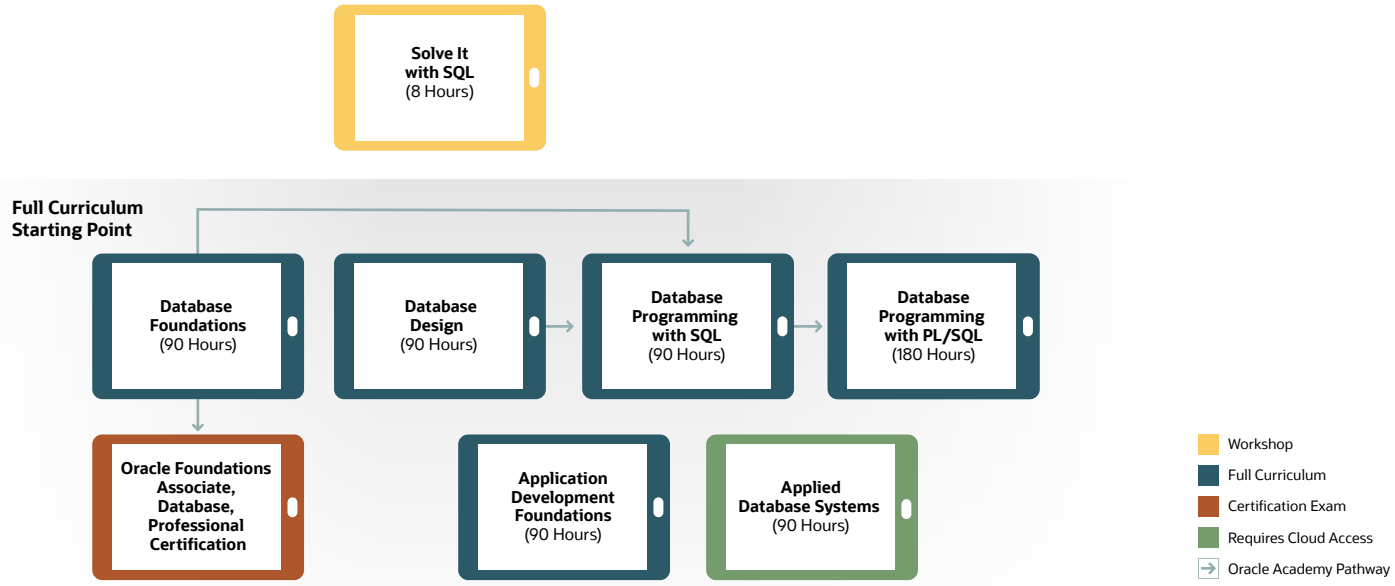
Oracle Academy provides our Institutional members and their educators and students with free access to Oracle APEX for knowledge building and hands-on skills practice. Our Oracle Academy APEX platform enables educators to offer the perfect environment for students to explore and build, supporting practice in our database curriculum and many Oracle Academy Education Bytes hands-on labs.

Plus access to Oracle APEX in the cloud offers more advanced students career-ready experience working in Oracle Autonomous Database within Oracle Cloud Infrastructure. Educators have access to easy 'getting started with' learning materials so they can become fully versed in APEX and share their knowledge with students.

Developers no longer need to be experts in an array of technologies to deliver sophisticated solutions. They can focus on solving problems, using the features of APEX to take care of the rest.

DATABASE CURRICULUM PATHWAY

Oracle APEX is used extensively in our database curriculum for hands-on practice.



Help your student become the next APEX developer with free access to Oracle APEX through Oracle Academy.

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Oracle Cloud Infrastructure Foundations I – Course Description

Overview

This course introduces students to basic Oracle Cloud Infrastructure concepts. This course teaches students Oracle Cloud Infrastructure terminology and focuses on the four main ideas of 'Core Infrastructure', 'Database', 'Solutions, Platform and Edge', and 'Governance and Administration' through lesson slides, corresponding videos and demonstrations, hands on labs, and midterm and final exams. Oracle Academy provides you with free access to the Oracle Cloud Platform which is a comprehensive, standards-based combination of Oracle and open source technologies that enable users to efficiently build, deploy, integrate, secure, and manage enterprise applications. Students must be the age of legal majority in their country of residence to receive a Cloud account.

Available Curriculum Languages:

- English

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, videos 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

Students

- Students who wish to gain a foundational knowledge of the Oracle Cloud Infrastructure
- Novice and advanced level programmers, database administrators, developers and Network architects wishing to learn about utilizing technology in a Cloud environment
- Students interested in Architecture, Operations or development roles in IT

Prerequisites

Required

- Basic understanding of Computing and Networking including IP Addressing, Virtual Machine and Database uses

Suggested

- Previous experience with either database or programming fundamentals and knowledge of networking devices including gateways

Suggested Next Courses

Further study of Oracle Cloud Infrastructure

Section Topics and Content

Core Infrastructure

Section 1 – Getting Started with Oracle Cloud Infrastructure

- Oracle Cloud Infrastructure Overview
- The Global Footprint of the Oracle Cloud Infrastructure
- The Components of a Region
- Physical Network
- Oracle Cloud Infrastructure Services Overview
- OCI Differentiation from Other Offerings
- Video

Section 2 – Virtual Cloud Network

- CIDR (classes inter-domain routing) Basics
- Virtual Cloud Network (VCN) Concepts
- IP Addresses
- Gateways and Routing
- Peering
- Transit Routing
- Security
- Default VCN, Internal DNS
- Putting It All Together!
- Hands-On Lab
- Videos

Section 3 – Connectivity to On-Premises Networks

- IPsec VPN
- Oracle FastConnect
- Connectivity Demo
- Videos

Section 4 – Compute

- Bare Metal, VM and Dedicated Hosts
- Instance Console Connections
- Images – Import/Export and Bring your own Image
- Boot Volume
- Instance Configuration and Pool
- Autoscaling Policy
- Instance Metadata and Lifecycle
- Hands-On Lab
- Videos

Section 5 – Block Volume

- OCI Storage Service
- Local NVMe Storage
- OCI Block Volume Service
- Meeting your Storage and Application Requirements
- Block Volume Service Support
- Cloning and Policy Based Backups
- Volume Groups
- Hands-On Lab
- Videos

Section 6 – File Storage Service

- OCI File Storage Service
- File Storage Service
- File Storage Service Demo
- File Storage Service Security
- Hands-On Lab
- Videos

Section 7 – Object Storage

- Object Storage Service
- Object Storage Capabilities
- Hands-On Lab
- Videos

Section 8 – Load Balancer

- Overview of Load Balancing
- Public Load Balancer
- Public Load Balancer Demo
- Private Load Balancer
- Policies, Health Checks
- Hands-On Lab
- Videos

Section 9 – Data Migration

- Data Migration to OCI
- Online and Offline Transport
- Data Transfer Service
- Storage Gateway Capabilities and Use Cases
- Storage Gateway Demo
- Videos

Database

Section 10 – Database

- Oracle Cloud Infrastructure Database Service
- Database Systems Available with OCI
- Features of Database Service
- One-Node Database System
- Database Systems Demo
- Videos

Section 11 – Autonomous Database

- Autonomous Database (ADB) and Database System Cloud Offerings in OCI
- Autonomous Data Warehouse Cloud - Serverless and Autonomous Transaction Processing - Serverless
- Autonomous Database Demo
- Autonomous Data Warehouse Cloud - Dedicated and Autonomous Transaction Processing - Dedicated
- Deploy, Use and Manage ADB
- Hands-On Lab
- Videos

Section 12 – Data Safe

- Introduction to Data Safe
- Security Assessment and Demo
- User Assessment and Demo
- Activity Auditing and Demo
- Data Discovery and Demo
- Data Masking and Demo
- Video

Solutions, Platform and Edge

Section 13 – DNS (Domain Name System)

- DNS Zone Management
- Videos

Section 14 – Traffic Management Policies

- Traffic Management
- Health Checks
- Videos

Section 15 – Web Application Firewall

- WAF Concepts and Use Cases
- OCI WAF Service
- OCI WAF Capabilities and Architecture
- OCI WAF Demo
- Videos

Section 16 – Resource Manager

- Components of Resource Manager
- Benefits of Resource Manager
- Terraform Files for Resource Manager
- Resource Manager Demo
- Video

Section 17 – OCI Streaming Service

- OCI Streaming Service
- Streaming Concepts
- Create a Stream and Publish and Consume Messages
- Streaming Demo
- Video

Section 18 – Monitoring

- OCI Monitoring Service
- Metrics, Alarms, Monitoring Query Language
- Metrics Explorer and Triggering an Alarm
- Monitoring Demo
- Video

Section 19 – Oracle Functions

- Overview, Key Features, Core Concepts
- IAM Policies
- Functions and Functions Metrics
- Functions Use Cases
- Oracle Functions Demo
- Videos

Section 20 – OCI Events

- OCI Events Service and Use Cases
- OCI Events Concepts
- Videos

Section 21 – OCI Registry Service

- OCI Registry Service
- Policy Requirements for OCIR
- Manage Repos using OCIR
- Global Image Retention Policies
- OCI Registry Service Demo
- Videos

Section 22 – Oracle Container Engine for Kubernetes

- Containers, Docker Container Engine
- Orchestration Systems on Kubernetes
- Oracle Container Engine for Kubernetes - OKE
- K8s Cluster in OCI using ‘Quickstart’
- Videos

Governance and Administration

Section 23 – Identity and Access Management

- IAM Principals, Authentication (AuthN), Authorization (AuthZ)
- IAM Policies and Advanced IAM Policies
- Compartments
- Policy Inheritance and Attachment for Compartments
- Tags
- OCI Support and Policies
- Hands-On Lab
- Videos

Section 24 – Key Management

- Oracle Cloud Infrastructure Key Management
- Video

Section 25 – Billing and Cost Management

- Billing and Account Management Options in OCI Console
- Cost Analysis
- Budgets
- Usage Reports
- Service Limits and Usage
- Compartment Quotas
- Cost Management Best Practices
- Videos

Section 26 – Service Requests and SLAs

- Getting Help with OCI Issues
- My Oracle Support Portal
- Registering your Account with Oracle Support
- OCI SLAs
- Creating and Checking Support Ticket Status
- Checking Limits, Quotas and Usage of OCI Resources
- Requesting Service Limit Increase
- Support Severity Levels
- Video

Section 27 – Oracle Cloud Infrastructure Security Overview

- OCI Overview
- Shared Security Responsibility Model
- OCI Security Capabilities and Considerations
- Videos

Oracle Cloud Infrastructure Foundations II – Course Description

Overview

This course, created by the Oracle Cloud Infrastructure Team, follows on from the basic Oracle Cloud Infrastructure concepts learned in Oracle Cloud Infrastructure Foundations I. This course explores the Oracle Cloud Infrastructure further and focuses on the three main ideas of 'Core Infrastructure', 'Database', and 'Governance and Administration' through lesson slides, corresponding videos and demonstrations, hands on labs, and final exams. Students will gain a firm understanding of OCI and receive hands on practice in the core services. Oracle Academy provides you with free access to the Oracle Cloud Platform which is a comprehensive, standards-based combination of Oracle and open source technologies that enable users to efficiently build, deploy, integrate, secure, and manage enterprise applications. Students must be the age of legal majority in their country of residence to receive a Cloud account.

Available Curriculum Languages:

- English

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, hands on labs, videos 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

Students

- Students who wish to gain a deeper knowledge of the Oracle Cloud Infrastructure
- Database administrators, developers and Network architects wishing to learn more about utilizing technology in a Cloud environment.
- Students interested in Architecture, Operations or development roles in IT

Prerequisites

Required

- Oracle Cloud Infrastructure Foundations I

Suggested

- Previous experience with either database or programming fundamentals and knowledge of networking devices including gateways

Section Topics and Content

Core Infrastructure

Section 1 – Virtual Cloud Network

- Virtual Cloud Network (VCN) L100 Recap
- Local Peering & Remote Peering
- Transit Routing Scenarios
- Deploy Virtual Firewall on OCI
- Videos

Section 2 – Connectivity - VPN Connect (IPSec)

- VPN Connect Design
- VPN Connect Demo
- Videos

Section 3 – Connectivity - FastConnect

- FastConnect Use cases
- FastConnect Concepts
- Describe FastConnect Service Models
- FastConnect Resiliency Options
- Pre-Requisites: Connectivity – Level 100
- Videos

Section 4 – Compute

- Compute Quotas
- Instance Configuration and Pools
- Autoscaling Policy
- Compute Instance Metrics
- Instance Console Connections
- Bring your Own Image
- Bring your own Hypervisor
- Videos

Section 5 – Storage

- Local NVMe SSD devices
- Block Storage Volume Groups and Performance
- File Storage Service Performance
- EBS Reference Architecture with FSS
- Videos

Section 6 – Load Balancer

- OCI LB SSL Support
- Advanced features, including Session Persistence and Path Based Routing
- Monitoring Metrics
- Troubleshooting Guidelines
- Videos

Section 7 – High Availability and Disaster Recovery

- High Availability and Disaster Recovery
- Leverage OCI for HA and DR
- HA and DR features for OCI
- High Availability and Disaster Recovery scenarios
- Videos

Database

Section 8 – Capacity Planning

- Database Performance Characteristics
- Tools available for knowing your database workload
- Database Sizing/Capacity Planning for Performance
- Database Migration to new Infrastructure
- Videos

Section 9 – High Availability

- The options of database high availability available with Oracle Cloud Infrastructure
- Features of Active Data Guard
- Network Preparation for DataGuard Setup
- Launch a Data Guard for Database Cloud Service Virtual Machines
- Launch a Data Guard for Database Cloud Service Bare Metal
- Switch Over/Failover/Reinstate in Data Guard setup
- Delete Standby Database
- Autonomous Database(ATP/ADW) Cloning
- Demo
- Videos

Section 10 – Moving Databases to OCI

- Oracle Databases in the Oracle Cloud
- Move to the Oracle Cloud – Migration Scenarios
- Oracle Database Cloud Migration Solutions
- Videos

Section 11 – Database CLI (DBCLI) OCI

- What is DBCLI
- Applicability of DBCLI for OCI Data Management
- Various options supported through DBCLI
- Videos

Section 12 – Autonomous Database

- Autonomous Database in OCI & Deployment Considerations
- DB Cloud Service Comparison
- Architecture & Best Practices for Autonomous Database Dedicated
- ATPD Client Connections
- Security Option in ATPD
- High Availability option in ATPD
- Customized software Updates & Patching in Autonomous Database-Dedicated
- Developer tools and productivity in Autonomous Database
- How to Migrate to Autonomous Database
- Management & Monitoring Options for Autonomous Database
- Videos

Solutions and Platform

Section 13 – Terraform

- Quick Introduction of Terraform
- Terraform State File – Local and Remote
- Terraform Target Resources
- Terraform Modules
- Terraform Provisioners
- Terraform and Instance Principal Configuration
- Videos

Governance and Administration

Section 14 – Identity and Access Management

- Instance Principals
- Multi-Factor Authentication (MFA)
- Advanced Policies
- Federate OCI with Oracle Identity Cloud Service (IDCS)
- Federate OCI with Microsoft Active Directory
- Federate OCI with Microsoft Azure Active Directory
- Reference IAM Model for an Enterprise
- Real life story for IAM compartment and policy design
- Videos

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Project Management Curriculum

Want to help your students get hands-on skills and practice in project management planning, budgets, resources, scheduling, and program and risk management?

Curriculum and resources include:

- Software download via e-delivery
- Full semester of course materials
- Instructor guide with slides and answer key for quizzes/exercises
- Database with exercises for projects
- Student guides
- Installation guide for IT administrators for either on-site lab installation or virtual remote lab installation

Topics encompass:

- Creating a project
- Scheduling and assigning resources
- Baselining and executing projects

For flexibility of use, Oracle Primavera can be installed on site in a computer lab or virtually using a remote desktop, with both offering an exercise database that educators and students can access.

In the Oracle Academy Member Hub, you can find Primavera P6 Professional Project Management software under the Applications Software Licenses section. You simply need to complete an eligibility questionnaire to ensure the software will be licensed to a qualified institution or program.

For educators teaching higher education construction or civil engineering project management, Oracle Academy offers **Oracle Primavera P6 Professional Project Management Fundamentals**.

This ready-to-use course and software are available free from Oracle Academy to qualified construction management and civil engineering institutions and departments. The course provides you with the resources to teach students knowledge and skills development with hands-on practice in the project management gold standard, Oracle Primavera P6.

Oracle Primavera ensures professionals around the globe are able to manage projects on time and on budget. Help students become career ready with the valuable project management skills employers seek.

Oracle Academy, Oracle's global philanthropic educational program, is open to educators around the world to advance technology education, skills, innovation, and diversity and inclusion. We offer academic institutions and their educators free teaching and learning resources—including curriculum, cloud, software, and professional development—that help them prepare students with knowledge, hands-on practice, and career-relevant skills.

Join Oracle Academy today and access all the benefits of Institutional membership.
Learn more about Oracle Academy project management curriculum at **academy.oracle.com/curriculum**

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Workshops

Get students started in and engaged in technology

Oracle Academy hands-on workshops make first experiences with computing fun and engaging for students—while serving educators by leveraging best academic curriculum practices like project-based learning and assessment tools. Suitable for students in late primary school grades and secondary school, Oracle Academy workshops provide educators with the opportunity to:

- Ensure that exploring technology is fun and appealing
- Incorporate technology into the teaching of various academic disciplines
- Offer a sample of computing to students through extracurricular programs and events

JAVA WORKSHOPS

Java workshops introduce learners to object-oriented programming using game-based learning methodology, drag and drop interfaces to create 3D animations and 2D games, and interactions with the Finch Robot.

Getting Started with Java Using Alice is designed for students with little or no programming experience and teaches basic Java programming concepts through developing 3-D animations in Alice 3.1.

8 Hours

Creating Java Programs with Greenfoot engages students who understand basic programming concepts to create 2-D games using Java.

16 Hours

Java Puzzle Ball uses a game-based learning methodology to build an understanding of Java. As students play, they develop robust conceptual models for complex key Java programming concepts.

12 Hours

Programming the Finch Robot in Greenfoot encourages students who have completed Creating Java Programs with Greenfoot to program an interface that makes the Finch Robot interactive using its light, proximity, and temperature sensors using Java in Greenfoot.

4 Hours

Programming the Finch Robot in Java encourages students who have completed the Creating Java Programs with Greenfoot and Programming the Finch Robot in Greenfoot to program an interface that makes the Finch Robot interactive using its light, proximity, and temperature sensors using Java.

4 Hours

DATABASE WORKSHOP

Solve It with SQL introduces databases to beginners, challenging students to play the role of a superhero and solve a series of crimes using a cloud-based database development environment.

8 Hours

STEM SCIENCE WORKSHOP

RelativityLand presents Einstein's special theory of relativity and is centered on a series of interactive JavaScript simulations through which students can manipulate a flying saucer to explore famous paradoxes and take measurements. The workshop is divided into four lessons that contain a video, lesson slides, and extension exercises to test learning.

4 Hours

WORKSHOP LANGUAGE AVAILABILITY

Course	Arabic	Brazilian Portuguese	Chinese (Simplified)	English	French	Indonesian	Japanese	Romanian	Spanish
Getting Started with Java Using Alice	✓	✓	✓	✓	✓	✓	✓	✓	✓
Creating Java Programs with Greenfoot	✓	✓	✓	✓	✓	✓	✓	✓	✓
Programming the Finch Robot in Greenfoot				✓					
Programming the Finch Robot in Java				✓					
Solve It with SQL	✓	✓	✓	✓	✓	✓	✓	✓	✓
RelativityLand				✓					

All Oracle Academy workshops also are offered as Workshops in a Box, so volunteers, computer club sponsors, and educators who may not specialize in teaching computer science can offer students a fun, hands-on introduction to technology.

Oracle Academy, Oracle's global philanthropic educational program, is open to educators around the world to advance technology education, skills, innovation, and diversity and inclusion. We offer academic institutions and their educators free teaching and learning resources—including curriculum, cloud, software, and professional development—that help them prepare students with knowledge, hands-on practice, and career-relevant skills.

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