Oracle Application Development Framework 11g Essentials – Exam Guide

The **Oracle Application Development Framework 11g Essentials Exam Guide** is designed to provide students with the training information that can help them pass the Oracle Application Development Framework 11g Essentials Exam (1Z0-554). The exam targets intermediate-level implementation team members. Up-to-date training and field experience are recommended.

The exam objectives are defined by learner or practitioner level of knowledge.

Learner-level: questions require the candidate to recall information to derive the correct answer

Practitioner-level: questions require the candidate to derive the correct answer from knowledge gained through practical experience

Alternative training options are identified for each topic. **Note:** both training and practical experience may be required to attain sufficient skills for a particular exam topic. Also, some of the training recommended can cover multiple exam topics.

The exam covers 31 topics:

Topic 1: Introduction to Fusion and ADF

Objectives	Level
Describe Fusion Architecture	Learner
Explain how ADF fits into the Fusion architecture	Learner
Describe the ADF technology stack (MVC)	Learner
Identify sources of additional information about ADF and ADF Business Components	Learner

Training Options

- o Instructor Led Training (delivered by Oracle University)
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF I

Topic 2: Getting Started with JDeveloper

Objectives	Level
Describe benefits that JDeveloper provides for application development	Learner
Utilize common IDE mechanisms when developing and testing components	Practitioner

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Set IDE preferences based on user requirements	Practitioner
Initiate the creation of empty applications, projects, and connections in JDeveloper	Practitioner

Training Options

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
    - Introduction to the JDeveloper IDE

Topic 3: **Building a Data Model with ADF Business Components**

Objectives	**Level**
Describe the role of ADF Business Components in building a business service	Learner
Explain the architecture of ADF BC	Learner
Identify the types of components that cooperate to provide the business service implementation	Learner
Explain how ADF BC components are used in a Web Application	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
    - Develop Business Services with ADF Business Components

Topic 4: **Querying and Persisting Data**

Objectives	**Level**
Describe the characteristics of an ADF BC view object	Learner
Create a view object that can be used for performing a query in a Web application	Practitioner
Define a SQL statement on which to base a query for a view object	Practitioner
Explain how entity objects relate to database tables	Learner

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Describe the persistence mechanism of entity objects	Learner
Use the Create Entity Object wizard to generate entity objects from database tables	Practitioner
Create associations between entity objects to represent business relationships	Practitioner
Create updatable view objects based on entity objects	Practitioner
Link view objects to one another in a master-detail hierarchy	Practitioner
Refactor objects in an application	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - Develop Business Services with ADF Business Components

Topic 5: Exposing Data to Clients

Objectives	Level
Explain the role of application modules	Learner
Describe the characteristics of application modules	Learner
Use the Create Application Module wizard to define the data model for an application module	Practitioner
Explain how application modules can manage business components transactions	Learner
Explain how application modules can manage application state	Learner
Explain the role of the ADF Model	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - Develop Business Services with ADF Business Components

Topic 6: Declaratively Customizing Data Services

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Objectives	Level
Declaratively change data behaviour	Learner
Declaratively modify the default behavior of view objects, entity objects, and application modules	Practitioner
Define a view accessor for a list of values(LOV)	Practitioner
Define a list of values (LOV) for an attribute	Practitioner

Training Options

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
    - Examining ADF Business Components New Features

Topic 7: Programmatically Customizing Data Services

Objectives	Level
Generate Java classes for business components to modify default behavior programmatically	Practitioner
Override class methods to change or augment default behavior	Practitioner
Modify the WHERE clause of a view object at run time	Practitioner
Explain the benefits of adding service methods at the application module level (rather than at the view level)	Learner
Create a test client for testing your custom code	Practitioner
Modify a view object's client code to add a new employee to the employees view object	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
    - Develop Business Services with ADF Business Components

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Topic 8: Validating User Input

Objectives	Level
Describe the types of validation available for ADF applications	Learner
Evaluate which validation options are appropriate for different validations	Practitioner
Add declarative validation for an entity object	Practitioner
Identify the other non-declarative validation options and when they might be used	Learner
Describe the benefits of using domains for validation	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF I

Topic 9: Troubleshooting ADF BC Applications

Objectives	Level
Identify the JDeveloper tools for logging and diagnostics	Learner
Use Java code auditing tools	Practitioner
Make use of FileMon and Junit to debug an application	Practitioner
Use the JDeveloper profiler	Practitioner
Use the JDeveloper debugger	Practitioner
Identify sources of Help	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF I

Topic 10: Understanding UI Technologies

Objectives	Level
Describe the use of Web browsers and HTML	Learner

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Explain how Java has come into widespread use as a language for developing Web applications	Learner
Describe the function of Servlets and JSPs	Learner
Define JavaServer Faces	Learner
Explain the JSF component architecture	Learner
Expalin some JSF component types included in the standard implementation	Learner
Describe the purpose of backing beans	Learner
Describe the JSF life cycle	Learner
Explain how ADF Faces augments the JSF life cycle	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - ▪ Build a Simple JSF Application

Topic 11: Binding UI Components to Data

Objectives	Level
Create an empty JSF page	Practitioner
Use three different ways to add ADF Faces UI components to a page	Practitioner
Describe the types of data-bound components that can be added to a JSF page	Learner
Describe the structure of an EL (Expression Language) expression	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - ▪ Developing Ajax-Based User Interfaces with JSF: An Introduction to ADF Faces Rich Client Components

Topic 12: Planning the User Interface

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Objectives

	Level
Describe the Model-View-Controller design pattern	Learner
Differentiate between bounded and unbounded task flows	Practitioner
Create task flows to define control flow in an application	Practitioner
Specify control flow rules	Practitioner
Define global navigation	Practitioner
Use routers to declaratively route control flow to activities based on an EL expression	Practitioner
Define the role of managed beans in task flows	Learner
Explain the types of validation available in the user interface	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - Working with Bounded Task Flows, Regions and Routers in JDeveloper 11g

Topic 13: Adding Functionality to Pages

Objectives

	Level
Internationalize the user interface so that the application can be used in multiple locales	Practitioner
Use component facets to specify subordinate elements such as toolbars, headers and footers	Practitioner
Implement a list of values (LOV) to enable users to select a value from a list	Practitioner
Add a calendar component to an input date field to make it easy for users to select a date	Practitioner
Use the table component to display structured data as a formatted table	Practitioner
Employ the tree component to display hierarchical data	Practitioner
Add icons and images to an application with ADF Faces output components	Practitioner
Create Search forms using the ADF query component	Practitioner
Use ADF Data Visualization components	Practitioner

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to add charts, graphs, map etc to your
JSF pages

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF I
- o   Online Tutorials
    - ▪   Introduction to ADF Data Visualization Components - Graphs, Gauge, Maps, Pivot Table and Gantt

Topic 14: Implementing Navigation on Pages

Objectives	Level
Implement command buttons and links	Practitioner
Create menus - Menu bar	Practitioner
Create menus - Popup	Practitioner
Create menus - Context	Practitioner
Use a navigation page	Practitioner
Use breadcrumbs	Practitioner
Create trains	Practitioner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF I
- o   Online Tutorials
    - ▪   Create JSF Page Navigation

Topic 15: Achieving the Required Layout

Objectives	Level
Build complex page layouts with layout components	Practitioner
Explain the role of ADF Faces skins	Learner
Use dynamic page layout	Practitioner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF I

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- o Online Tutorials
    - Developing RIA Applications with Oracle ADF

Topic 16: Ensuring Reusability

Objectives	Level
Identify the benefits of reusing components	Learner
Create a resource catalog to enable sharing of resources within and across teams and applications	Practitioner
Create ADF libraries to share components within and across teams and applications	Practitioner
Create a task flow template for reuse across different bounded task flows	Practitioner
Create a page template for reuse across the JSF pages in an application to enable a consistent look and feel	Practitioner
Create a declarative component for reuse in different pages of an application	Practitioner
Create a page fragment to use in multiple pages of the application	Practitioner
Employ a bounded task flow as a region in a JSF page	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I

Topic 17: Passing Values between UI Elements

Objectives	Level
Evaluate whether the data model contains opportunities to reduce the need for passing values between pages	Practitioner
Use a managed bean to pass values between JSF pages	Practitioner
Store values in memory-scoped attributes to hold and pass information between pages and life cycle phases	Practitioner
Use parameters to pass information to different parts of the application	Practitioner

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- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
    - Bind a JSF Page to a Managed Bean

Topic 18: Responding to Application Events

Objectives	Level
Configure managed beans to contain code to respond to events	Practitioner
Explain the different types of events	Learner
Use phase listeners to listen for and respond to events	Practitioner
Explain the role of an event listener	Learner
Use action listeners	Practitioner
Describe the sequence in which events and listeners are executed	Learner
Describe the features of JDeveloper that support ADF Faces enhanced event handling	Learner
Identify the server events fired by ADF Faces components	Learner
Use the contextual events framework to co-ordinate regions on a JSF page	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF I

Topic 19: Implementing Transactional Capabilities

Objectives	Level
Explain ADF BC transaction handling	Learner
Enable an ADF bounded task flow to run as a transaction	Practitioner
Manage transaction exceptions on ADF bounded or unbounded task flows	Practitioner
Define the response to the browser's Back button (for an ADF task flow that was already exited)	Learner
Implement Save for Later functionality	Practitioner

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Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF I
- o Online Tutorials
  - Working with Bounded Task Flows, Regions and Routers in JDeveloper 11g

Topic 20: Implementing Security in ADF BC Applications

Objectives	Level
Explain the need to secure applications	Learner
Describe security aspects of an ADF BC application	Learner
Add ADF Security Authentication to an application	Practitioner
Add ADF Security Authorization to an application	Practitioner
Use two approaches for granting users access to resources	Learner
Prevent unauthorised access to the ADF BC Model	Learner
Explain the types of application authentication at run time	Learner
Use Expression Language to extend the default security capabilities of the framework	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 21: Explore the Project Structure and Core File Architecture

Objectives	Level
Define File Structure of a Prohect	Learner
Examine how Metadata files are used to specify paramters, methods, and return values to a data control	Practitioner
Define ADF Data Control and Databinding Files	Learner
Explore the ADF Faces and Web Configuration Files to know where task	Learner

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flows, pages and code are created
Define Hierarchical Relationship of the
XML Metadata files in a Web Application   Learner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF II
- o   Online Tutorials
    - ▪   Introduction to the JDeveloper IDE

Topic 22: Extend the ADF Business Components Framework

Objectives	Level
Examine some general considerations when using ADF Business Components	Practitioner
Extend the ADF Business Components (ADF BC) Framework to customize your application	Practitioner
Override the standard way data is committed to the database using a PL/SQL procedure	Practitioner
Design ADF Business comonents to avoid database contraint	Practitioner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 23: Use ADF Business Components for Validation, Calculations and List of Values

Objectives	Level
Build Cascading List of Values	Practitioner
Enhance the Application with Calculations and Validation	Practitioner
Create Validation for Foreign Keys	Practitioner
Employ Groovy Expressions in Validations	Practitioner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)

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- Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
- Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 24: Use Inheritance in the Business Domain Layer

Objectives	Level
Reuse existing Bussiness Component designs by extending components	Learner
Implement Supertype/Subtype designs using Entity Objects	Practitioner
Create View Objects to access more than one table	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 25: ADF as a part of a Service Oriented Architecture

Objectives	Level
Expose ADF Business Components as SDO for use in a SOA Process (BPEL)	Learner
Create Rich User Interfaces that access data from a composite application	Practitioner
Create events for ADF Business Components to trigger Enterprise Service Bus	Learner
Use Service Data Objects to access heterogeneous data in a uniform way	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
  - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - Oracle Fusion Middleware 11g: Build Applications with ADF II
- o Online Tutorials
  - Deploying a JDeveloper SOA Application to Oracle WebLogic Server 11g
  - Design an SOA Composite Application

Topic 26: Implement Data Binding Controls

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Objectives	Level
Define and Recognize ADF Model binding types	Learner
Define ADF Model executables and how to use them	Learner
Customize data-bound components within the page definition file to support application requirements	Practitioner
Use Expression Language to connect page items to model components	Practitioner
Determine how model components get transformed into Data Control Palette items	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 27: Practical Data Binding in Action

Objectives	Level
Describe how data binding and the JavaServer Faces (JSF) page life cycle interact	Practitioner
Define listeners and custom controllers to augment the ADFm life cycle	Learner
Explain how the Application Development Framework (ADF) life cycle works	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 28: Work with Managed Beans and JavaServer Faces

Objectives	Level
Define key JavaServer Faces (JSF) terms	Learner
Describe the JSF Architecture with Application Development Framework (ADF)	Learner
Differentiate between Managed and	Practitioner

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Backing Beans	
In a JSF page, create and reference a Managed Bean to perform a custom method	Practitioner
Set and use Managed Properties to store and retrieve user login information	Practitioner
Use context object classes to access application messages, work with the Servlet API or ADF specific funcationality	Learner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF II
- o Online Tutorials
    - ▪ Bind a JSF Page to a Managed Bean

Topic 29: ADF Faces Advanced Features

Objectives	Level
Examine AJAX and ADF	Practitioner
Employ Partial Page Rendering (PPR) on a JSF Page	Practitioner
Enhance a page by creating input and output items using ADF Components	Practitioner
Use page, panel and splitter componentss to design and build a JSF page	Practitioner
Develop UI shell templates to incorporate company standard behavours, look and feel	Practitioner
Display numerical data using Data Visualization components and Active Data Services	Practitioner

Training Options:

- o Instructor Led Training (delivered by Oracle University)
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
    - ▪ Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 30: Integrate with WebCenter

Objectives	Level
Allow end users to perform runtime	Learner

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customization to their application pages

Integrate ADF pages with Content
Management systems to access file
systems   Practitioner

Add Web Center Services, like social
networking and collaboration, to JSF/ADF
pages   Practitioner

Add reusable Portlets that provide
dynamic view of data, into a JSF/ADF
page   Learner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
  - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF II

Topic 31: Customize the Application Look and Feel with Skins

Objectives	Level
Use Firebug and Mozilla Developer Toolbar to build skins	Learner
Explain how skin selectors work	Practitioner
Build instance specific skins	Practitioner
Develop a managed bean to change skin at runtime	Practitioner

Training Options:

- o   Instructor Led Training (delivered by Oracle University)
  - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF Accelerated
  - ▪   Oracle Fusion Middleware 11g: Build Applications with ADF II

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