

Retail Pro 9 Reports Engineer (RPRE) Certification Exam

Study Guide

SKILLS MEASURED

The examination competencies listed below are the competencies being addressed in the written examination and/or practical assessment. Additionally, this list includes the specific tasks (and sub-tasks) you should be able to accomplish for each competency.

Use this list to help you prepare for the certification exam.

Understanding Database Fundamentals

- Defining the terms used in association with an Oracle RDBMS. Be able to describe the following:
 - DBMS
 - RDBMS
 - Schema
 - Database
 - Views
 - Base tables
 - Oracle
 - PL/SQL
 - SQL
 - Query
 - PL/SQL Package
 - Stored Procedure
 - Primary Key
 - Foreign Key
 - Parameter
- Describing the functions, purposes and characteristics of an RDBMS and its components
 - Primary Key
 - Foreign Key
 - SQL
 - What are its advantages/benefits
 - What is the purpose of the SELECT statement
 - Oracle
 - Views
- Identifying the general structure of a relational database
 - Column
 - Table
 - Row
 - Data value

Filtering and Viewing Reports in Report Viewer

- Understanding the “general” rules/guidelines/concepts/strengths of Report Viewer
 - How/when is Report Viewer installed
 - How/when does an update of the Delta table occur within RV
 - When is the best time to schedule an update and why
 - What subsidiaries are updated
 - How do the Access Level rights assigned to a report affect the viewing of a report (are they hierarchical)
 - Strengths vs. weaknesses
- The mechanics of filtering a report
 - What is a parameter and when does it become active
 - Know the different types of parameters and how they are represented on the Filter Criteria screen
 - Date Range
 - Numeric Range
 - Lookup
 - And/Or
 - What kind of search will Report Viewer conduct on given filter criteria, i.e. exact search, pattern search, case sensitive, etc
 - Know how to navigate through the displayed pages of a report
- Functionality while Viewing a report
 - View and print the output of a report from designated report categories
 - Know how to navigate through the displayed pages of a report
 - Create a new report from a snapshot of an existing report and view at a later time
 - Know how to export the output to other formats
 - Locate specific data from within the viewed output of a report
- Registering/Un-registering a report
 - Register a custom report for viewing in Report Viewer
 - Remove a custom report from the available reports for viewing in Report Viewer

Using Crystal Reports to Enhance Reports

- Understanding the “general” guidelines/purposes/strengths of Crystal Reports and its report designer tools/objects
 - What is meant by ODBC
 - Know the purposes and how to use the Design Tab and the Preview Tab
 - Know when and how to use the following tools available in Crystal Reports
 - Workbench
 - Field Explorer
 - √ How can you tell what fields are currently part of the report’s layout
 - √ What categories of fields are contained within the Field Explorer
 - Report Explorer
 - Start Page
 - Record Sort Expert
 - Section Expert
 - Group Expert
 - Select Expert
 - Verify Database
 - Format Painter
 - Format Editor

- Be able to define the following objects, know whether they can be added to a report's layout, and what kind of data they typically display:
 - Field objects
 - Report objects
 - Parameter fields
- Working in the Design tab's different report sections
 - Know the purpose, general usage, and basic functionality of the different report sections
 - Report Header and Footer sections
 - Page Header and Footer sections
 - Details section
 - Group Header and Footer sections
- Viewing/changing the report's data source
 - View the current datasource connection
 - Change the report to reference a different stored procedure for retrieving data
 - What kind of information will the Set DataSource Location window display
- Filtering and previewing a report
 - What is the purpose of the Oracle Server Connection window and when does it display
 - Know what parameters always require an entry when previewing predefined reports
 - Drill-down into the detail of a group while previewing
 - What does the parameter list contain and what type of formatting, if any, is required for entry of values
 - How/when is data refreshed
 - Is there a full-screen mode while previewing
 - Know the purpose of the Group Selection Tree and the tabs where it is available for use
 - Preview a report
- Creating and formatting a new custom report from a Retail Pro pre-defined report
 - Modify a custom report with basic formatting features
 - Insert/delete various object types
 - Position, move, resize, and align various types of objects
 - Create groups, summary fields (subtotals)
 - Change formatting options
 - Apply formatting to an entire section
 - What Crystal Report features/tools are available for enhancing an existing report
 - Understand the reason(s) why changes should never be made directly to a Retail Pro predefined (core) report but only on copies of those reports
 - Know what formatting options are available for the different object types
 - What are "sizing handles", when do they appear (for one object, for multiple selected objects)
 - Know the different methods of accessing the Format Editor
 - Know the different methods of selecting multiple objects for the purpose of moving those objects
 - Know how the Field Explorer indicates which fields are displayed on the report
 - Understand what modifications can be made in preview mode and in Design mode
 - Know when you would use the following formatting options:
 - Lock Position and Size
 - Suppress If Duplicated
 - Suppress (No Drill-down)
- Selecting Records
 - Know how to specify various criteria for selecting records using different comparison operators

- Know how to use wildcards in pattern searches
- Sorting a report
 - Understand the concept of sorting
 - In what ways is sorting similar to grouping; different from grouping
 - When will you not see a sorted field listed in the Record Sort Expert
 - Establish a sorted order
- Grouping a report
 - Understand the concept of grouping and reasons why groups are created
 - In what ways is grouping similar to sorting; different from sorting
 - What report sections are automatically created when a group is created
 - Understand the primary purpose(s) for creating groups
 - Create a group
- Summarizing data on the report
 - Understand the concept of Summary Fields and Running Totals and the differences between the two
 - Know the steps that must be followed to create a Summary Field or a Running Total field
 - Why is proper placement of a Running Total field so important
 - What section of the report will a Summary Field be placed
 - Create Summary Fields and Running Totals

Querying the Database using SQL

- Understanding SQL, its purposes and benefits
 - Define SQL and list its benefits
 - Differentiate a procedural Language from a non-procedural language
 - Define PL/SQL
 - Make a distinction between a Dynamic SQL statement and a regular SQL statement
 - What is a SQL command in general and the most widely used SQL command in specific
- Composing queries using the SQL SELECT statement
 - What is an ad-hoc query
 - What is a “null” value
 - Define a subquery and be able to recognize one
 - Identify basic command structure and syntax of SQL queries, identifying what is optional and what is required
 - Determine if a SELECT statement is syntactically correct
 - Know the general rules and correct syntax of the keywords and how to compose queries using these keywords
 - FROM
 - WHERE
 - GROUP BY
 - ORDER BY
 - Understand the purpose of and how to use an alias in the SELECT statement
 - Be able to interpret what a given SQL query will retrieve
 - Know how to set up combined conditions using logical and comparison operators
 - Understand the hierarchy of how conditions combined with AND, OR, and Not will be evaluated How can you break the default (normal) hierarchy and establish the evaluation order
- Using PL/SQL Developer to query tables in the Retail Pro database

- Recognize the owner of a table when viewing the table list in PL/SQL Developer
- Know how to write and execute a successful SELECT statement in the PL/SQL Developer SQL window
- Know how and when to use the “Query data” and “Describe” options selected from the table list’s pop-up menu
- Be able to use wildcards in the Where clause of the Select Statement
- Query tables in PL/SQL Developer limiting the rows that will be returned (simple and compound conditions) using various comparison and logical operators
- Know how to use the Query by Example tool in PL/SQL Developer
- Recognize a table from a view in PL/SQL Developer
- Understanding and recognizing the different types of table joins
 - What is the purpose of a SQL join
 - Understand the following different types of joins and what data they will retrieve:
 - Inner Join
 - Left Outer Join
 - Right Outer Join
 - Full Outer Join
 - Know the correct syntax for joining tables in both the Where clause (using the outer join operator) and in the From clause of the SELECT statement
 - Know how to specify a query to retrieve related data from two different tables

Modifying a Stored Procedure within a PL/SQL Package

- Understanding concepts and definitions relating to PL/SQL Packages and Stored Procedures
 - Be able to describe terms/components including examples, purpose(s), strengths/weaknesses where applicable :
 - PL/SQL Package
 - √ Understand how changes to a package could affect its stored procedure(s)
 - Procedural Language
 - PL/SQL
 - Dynamic SQL Statement – including how and where it is stored
 - PL/SQL Developer
 - Stored Procedure – understand how changes could affect one or more reports
 - √ How is a stored procedure residing in two different packages but with the same name treated
 - Understand the reason(s) why changes should never be made directly to a Retail Pro core stored procedure or package but only on copies of these
- Navigating Packages in PL/SQL Developer
 - What determines the objects that are available in the PL/SQL All Objects window
 - How can you identify the particular package a specific stored procedure resides in
 - Describe the two parts of a PL/SQL Package including their purpose(s)
 - Identify the different components of a package, i.e. a stored procedure and its parameter list
 - Know how to navigate the parts of a PL/SQL Package and their components
 - What does a Reference to a function in a Retail Pro core (predefined) package with a name that begins with “CommonQuery” signify
- Creating a new PL/SQL Package in the Retail Pro database
 - Create and compile a PL/SQL Package in PL/SQL Developer by making a copy of an existing package
 - Resolve compilation errors
 - What is a compilation “Hint” and how should it be treated
 - Make a backup copy (external file) of the package

- Understand that changes made in the Package Body do not automatically update the corresponding Package Specs
- Modifying a stored procedure residing within a package – the process
 - Know what is involved in each step of the process and the proper order of execution
 - Compiling
 - Debugging – understand the different types of errors
 - √ Compilation errors
 - √ Execution errors
 - √ Logic errors
 - Testing
 - Implementing
 - Know how to properly enter parameter values when running/testing a stored procedure
 - Understand the process of deleting a stored procedure from a package
 - Test a stored procedure within PL/SQL Developer, resolving any errors, and display the output
- Modifying a Dynamic SQL Select Statement
 - Recognize a Dynamic Select statement and state the benefit(s) and drawback(s) of using one
 - Understand that syntax errors in changes to a dynamic SQL statement will not be caught when the stored procedure is compiled
 - Know how to modify and successfully implement changes made directly to a Dynamic Select statement
- Obtaining the SQL Select statement used by a Retail Pro predefined report
 - Understand why it is recommended to obtain a copy of the Select statement used to retrieve data for a report before actually making changes to that statement within its stored procedure
 - Know how to turn the SQL trace mode on in the Init.ora file
 - Find the SQL Select statement that retrieves data for the report in the appropriate .trc file and make a copy of this statement
 - Know when/if the Oracle services should be stopped and restarted when turning the SQL trace on/off
 - Know how to successfully test a copy of a report's Select statement in a SQL window within PL/SQL Developer
 - Activate Trace mode on the Retail Pro database and extract the SQL Select statement used to retrieve data for one of the predefined reports registered in Report Viewer
- Adding a field to a stored procedure's Select statement
 - Know how to determine the name of the stored procedure used by a specific Retail Pro predefined report
 - Create a new stored procedure within a PL/SQL package by making a copy of an existing stored procedure and make designated changes to the copy
 - Understand when you would have to modify the FROM and WHERE clauses when adding a field
 - Know when you would have to use an arithmetic operation/function on the field being added
 - Understand when you would also have to add the field to any existing subqueries
 - Know how to identify the Retail Pro tables and views included in a Select statement containing nested Select statements
 - Understand the use of an alias when adding fields
 - Add a designated field to a stored procedure to make that field available in the layout of a report being edited in Crystal
 - Understand how and when you would group on a field in the stored procedure
- Changing the stored procedure a report references using Crystal Reports

- Adapt a report using Crystal Reports so that the report references a different stored procedure
- Adapting a report using Crystal Reports to changes in the Retail Pro database
 - Know when to use the Verify Database option
 - Understand when the Set Database Location option will check the database for certain changes
 - Update a report to produce the desired output
- Registering a custom report in Report Viewer
 - Register a custom report in Report Viewer and then view it within this application

Distributing Custom Reports

- Understanding the mechanics of distributing reports with or without an associated custom package
 - Understand all the information you must specify when registering a report in Report Viewer
 - Report Registration Information
 - Lookup names for all Lookup type parameters
 - Understand the association between a custom report and a custom PL/SQL package that it references
 - What will occur when a remote location tries to run a registered custom report in Report Viewer without having added and compiled its associated custom package
 - What must be done to remotely compile a custom package in a remote database
 - √ Know what modifications need to be made on the tnsnames.ora file
 - √ Know how to establish a connection to the remote server, i.e. a VPN connection
 - √ Understand how to use PL/SQL Developer (or other similar tool) to connect to the remote Retail Pro database and accomplish the compilation
- Using the Retail Pro Tools to automatically register a report
 - Understand what the two tools provided by Retail Pro will accomplish, where they reside, and when to execute them
 - ReportRegExtractor.exe
 - √ What naming convention will the generated registration script use
 - RunReportScript.exe
 - √ Identify the different methods for running this tool
 - Know what files must be at the remote site in order to use the tools
 - Know the different methods you can use to move the necessary files to a remote location for report registration