Lab 5 – Aarish Salam Memon

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STEP – 2 CREATED AND POPULATED THE DATA

Table

Description automatically generated

STEP – 3 PL/SQL SCRIPTS

SCRIPT - 1

Graphical user interface, text, application

Description automatically generated

SCRIPT – 2

Graphical user interface, text, application

Description automatically generated

SCRIPT – 3

Graphical user interface, text, application

Description automatically generated

SCRIPT – 4

A picture containing treemap chart

Description automatically generated

SCRIPT – 5

Chart, treemap chart

Description automatically generated

SCRIPT – 6

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

SCRIPT – 7

Graphical user interface

Description automatically generated with medium confidence

SCRIPT – 8

Graphical user interface, application

Description automatically generated

SCRIPT – 9

Graphical user interface, text

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application

Description automatically generated

SCRIPT – 10

Graphical user interface, application

Description automatically generated

Text

Description automatically generated with medium confidence

Text

Description automatically generated

STEP – 4 Questions and Reflections Concerning this Database Project.

Q1. When and Where should EXCEPTION statements be used in a PL - SQL block statement

Ans. In PL/SQL Errors or warnings are known as Exceptions, Exceptions can be both internally defined and user defined. We can declare our own exceptions in the declaration part of PL/SQL query for example, Fee not paid for the section of student finances whenever the semester ends so it will create a warning and that would help us as it would ping the warning. Using exceptions has many advantages, such as error handling, Code check, improve readability etc.

Exceptions can be used for a clean code to execute, without errors and when you need to get notified for something, it cleans the process for us, we can identify where the code is giving us an error. It improves reliability of the block too.

Q2. When using PL - SQL, differentiate between a function, a procedure, and a Package. Point when each of these entities may be used.

Ans. Function: In PL/SQL function is generally used to compute and solve a problem for us and returns us a single answer. A function is restricted to a return type with its specifications, and it is bound to return the value that meets its specification. It is a set of statements which can be called by name.

Procedure: Pre-stored functions are called procedures, it does not have any return type so it won’t return anything it just executes the statement and stop once it’s done. The only difference in procedure and function is that procedure returns multiple values. Every procedure has it’s own unique name by which it can be called.

Package: Package is a schema object which groups related types, items, and subprograms of PL/SQL in other ways Package is a group of functions, procedures, objects, and variables. A package is grouped and compiled and is stored in a database where multiple applications can use it. Package has a specification and a body.

Q3. Distinguish between Oracle date types RRRR and YYYY.

Ans. YYYY returns us given year in a four-digit format (For example 2021) TO\_DATE (‘01012021’,’MMDDYYYY’) It will return 1/1/2021

RRRR format means 2-digit year in the range of 00 to 49 are assumed to be in the current century and digits in the range of 50 to 99 are assumed to be in the previous century (FOR EXAMPLE TO\_DATE (‘050589’,’MMDDRRRR’) It will return 5/5/1989 because the number 89 is in the second range so it would assume it is in previous century.

Q4. Can substitution variables be used in a function definition? Support your answer.

Ans. Yes, as per the use of substitution variables they are used for temporary purposes so it can be declared almost everywhere, it can be used in a function definition too. It can be repeatedly used in a single script. To define any substitution variable, we can just use the keyword ‘DEFINE’. It allows us to write generic scripts, It also allows us to mark places in a script where you want to substitute the value when you’re going run. Using substitution variables in a function definition reduces the effort it would be then restricted to the function only but if the substitution is just for the function it would work perfectly and it would give you all the benefit for using it.

Q5. When should for loops be used as opposed to using while loops? Support your answer with examples.

Ans. We can use for loops or while loops for any loops we want and vice-versa, but we just check which one is more appropriate for the situation. Generally, If we know how many times we want to run the loops we use for loop and if we want don’t know how many times we want to run but just we want to break it according to the statement we can use While loop.

For example, we use for loop if we want to find a specific value in an array, it will work like line by line it goes to the first element and if that is your desired value it stops but if not, it continues similarly for other elements.

A while loop is continuously working until it meets the condition, so that number of executions is unavailable to us. For example, keep printing the numbers starting from until it’s less than 35 so it will keep generating the loop until the condition meets and once the conditions meets it will stop running.