Assignment No A6

Title: Named PL/SQL Block: PL/SQL Stored Procedure and Stored Function.
Write a Stored Procedure namely proc_Grade for the categorization of student. If marks scored by students in examination is <=1500 and marks>=990 then student will be placed in distinction category if marks scored are between 989 and900 category is first class, if marks899and 825 category is Higher Second Class.
Write a PL/SQLblock to use procedure created with above requirement.
Stud_Marks(name, total_marks) Result(Roll,Name, Class)

Objective: To understand the concept of stored procedure and stored function.

Theory:

Stored procedure:

A stored procedure is a set of Structured Query Language (SQL) statements with an assigned name, which are stored in a relational database management system as a group, so it can be reused and shared by multiple programs.

Stored procedures can access or modify data in a database, but it is not tied to a specific database or object, which offers a number of advantages.

Benefits of using stored procedures:

A stored procedure provides an important layer of security between the user interface and the database. It supports security through data access controls because end users may enter or change data, but do not write procedures. A stored procedure preserves data integrity because information is entered in a consistent manner. It improves productivity because statements in a stored procedure only must be written once.

Creating a Procedure:

A procedure is created with the **CREATE OR REPLACE PROCEDURE** statement.

Syntax:

CREATE [OR REPLACE] PROCEDURE procedure_name [(parameter_name [IN | OUT | IN OUT]

type [, ...])]

{IS | AS}

BEGIN

< procedure_body >

END procedure_name;

Where,

- procedure-name specifies the name of the procedure.
- [OR REPLACE] option allows the modification of an existing procedure.
- The optional parameter list contains name, mode and types of the parameters. IN represents the value that will be passed from outside and OUT represents the parameter that will be used to return a value outside of the procedure.
- procedure-body contains the executable part.
- The AS keyword is used instead of the IS keyword for creating a standalone procedure.

Stored function:

A stored function (also called a user function or user-defined function) is a set of PL/SQL statements you can call by name. Stored functions are very similar to procedures, except that a function returns a value to the environment in which it is called. User functions can be used as part of a SQL expression.

Creating a Function

A standalone function is created using the **CREATE FUNCTION** statement.

Syntax:

CREATE [OR REPLACE] FUNCTION function_name [(parameter_name [IN | OUT | IN OUT] type [, ...])]

RETURN return_datatype

{IS | AS}

BEGIN

< function_body >

END [function_name];

Where,

-function-name specifies the name of the function.

-[OR REPLACE] option allows the modification of an existing function.

-The optional parameter list contains name, mode and types of the parameters. IN represents the value that will be passed from outside and OUT represents the parameter that will be used to return a value outside of the procedure.

-The function must contain a return statement.

-The RETURN clause specifies the data type you are going to return from the function.

- function-body contains the executable part.

- The AS keyword is used instead of the IS keyword for creating a standalone function.

Design And Implementation:

step1:

create a table as stud_marks(rollno , Name ,marks); step 2:

create a table as Result (rollno , Name, class); step 3:

write a procedure as proc_grade

If marks scored by students in examination is <=1500 and marks>=990 then student will be placed indistinction category,if marks scored are between 989 and900 category is first class, if marks 899 and 825 category is Higher Second Class.

Conclusion: Here we understood the concept of stored procedure and function that could be helpful for accessing and retrieving data efficiently from the database.