**Database Management Assignment 1**

|  |  |  |
| --- | --- | --- |
| **Name**: Carlos Rebelo | **#**: 991729616 | **Date**: 2024-09-18 |

**Section A – Question 1: What is the difference between an explicit cursor and an implicit cursor in PL/SQL?**

Firstly, a cursor is a temporary storage of rows that acts as a pointer to the rows of data we select with a query. An implicit cursor is created automatically by PL/SQL when a DML operation is ran (SELECT, INSERT, UPDATE, etc), while an explicit cursor is defined and given functionality by the programmer. Implicit cursors are automatically opened, fetched, and closed, while explicit cursors must be opened, fetched, and closed by the programmer.

**Section A – Question 2: List and explain the attributes available for cursors in PL/SQL.**

Attributes for cursors

NOTFOUND: Checks if most recent fetch has returned a row, if it hasn’t returned a row, it returns True

FOUND: Checks if most recent fetch has returned a row, if it has returned a row, it returns True. Opposite of NOTFOUND

ISOPEN: An attribute checking if the cursor is open, returning True if open and False if closed

ROWCOUNT: Explicit: Returns the number of rows that have been fetched so far. Implicit: Returns the number of rows affected by the DML operation

**Section A – Question 3: What are bulk operations in PL/SQL and how do they improve performance?**

Bulk operations in PL/SQL process multiple rows of data with one operation, increasing efficiency and speed by reducing context switches between PL/SQL and SQL.

BULK COLLECT: This operation is essential to bulk operations, as it retrieves multiple rows from a query into a collection using one operation

FORALL: Allows us to perform DML (INSERT, UPDATE, DELETE) operations on multiple rows of data from a collection, using a single operation.