**Exercise 1: Control Structures**

Conditional statements in PL/SQL are used to check conditions and execute code blocks based on those conditions. There are four main types: If Then, If Then Else, If Then Else If, and Case Statement, each varying in complexity and number of conditions handled.

**If Then Statement**

Executes a block of code only if a single specified condition is true.

Syntax:

IF condition THEN

-- statements

END IF;

**Example**

DECLARE

pin NUMBER := 2308;

BEGIN

IF pin=2308 THEN

dbms\_output.put\_line('Logged in successfully.');

END IF;

END;

/

Output:

Logged in successfully.

**If Then Else Statement**

Executes one block if the condition is true and another block if the condition is false.

Syntax:

IF condition THEN

-- statements if true

ELSE

-- statements if false

END IF;

**Example**

DECLARE

pin NUMBER := 2309;

BEGIN

IF pin=2308 THEN

dbms\_output.put\_line('Logged in successfully.');

ELSE

dbms\_output.put\_line('Incorrect pin.');

END IF;

END;

/

Output:

Incorrect pin.

**If Then Else If Statement (ELSIF)**

Allows multiple sequential conditions to be checked in order.

Executes the code block of the first true condition; if none are true, executes the final ELSE block.

Syntax:

IF condition1 THEN

-- statements1

ELSIF condition2 THEN

-- statements2

...

ELSE

-- statements if all conditions false

END IF;

**Example**

DECLARE

marks NUMBER := 79;

BEGIN

IF marks>=80 THEN

dbms\_output.put\_line('A grade.');

ELSIF marks >=60 THEN

dbms\_output.put\_line('B grade.');

ELSIF marks >= 40 THEN

dbms\_output.put\_line('C grade.');

ELSE

dbms\_output.put\_line('Failed.');

END IF;

END;

/

Output:

B grade.

**Case Statement**

Evaluates a single expression against multiple possible values and executes the matching code block.

Only one matching WHEN clause executes; if none match, ELSE executes.

Syntax:

CASE expression

WHEN value1 THEN

-- statements1

WHEN value2 THEN

-- statements2

...

ELSE

-- statements if no match

END CASE;

**Example**

DECLARE

marks NUMBER := 79;

BEGIN

Case marks

WHEN >=80 THEN

dbms\_output.put\_line('A grade.');

WHEN >=60 THEN

dbms\_output.put\_line('B grade.');

WHEN >= 40 THEN

dbms\_output.put\_line('C grade.');

ELSE

dbms\_output.put\_line('Failed.');

END CASE;

END;

/

Output:

B grade.