Pascal පරිගණක භාෂාව - සිංහල මාර්ගෝපදේශය

සැකසුම ගයාන් කරුණාතිලක

Pascal යනු මොකක්ද?

Pascal යනු **Niklaus Wirth** විසින් 1960 වසරේ නිර්මාණය කළ structured programming භාෂාවකි. එය algorithm, programming concepts, හා basic computing principles ඉගෙන ගැනීම සඳහා ඉතා සුදුසුය.

සරල උදාහරණ කිහිපයකින් අපි පැස්කල් පරිගණක භාෂාව මෙසේ උගනිමු.

1. Hello World උදාහරණ

```
PROGRAM first;
BEGIN
 Write('Hello Gayan Sir...!')
END.
```

Output:

```
Hello Gayan Sir...!
```

2. Numbers එකතු කිරීම (Calculator)

```
program Calc;
var x, y, sum : integer;
begin
  write('Enter first number : ');
  readln(x);
  write('Enter second number : ');
  readln(y);
  sum := x + y;
  writeln('Sum = ', sum);
end.
```

Example Output:

```
Enter first number : 5
Enter second number : 10
Sum = 15
```

3. Age Check (IF Condition)

```pascal
PROGRAM cond1;
VAR
  age : integer;
BEGIN
  write('Please enter your age in years : ');
  read(age);
  IF age < 18 THEN
    writeln('Sorry! you are NOT allowed');
  writeln('Thanks');
END.
```

Example Output:

```
Please enter your age in years : 16
Sorry! you are NOT allowed
Thanks
```

4. Pass / Fail Example

```pascal
PROGRAM cond2;
VAR
 marks : integer;
 grade : char;
BEGIN
 write('Enter marks : ');
 read(marks);
 IF marks >= 40 THEN
   grade := 'Pass'
 ELSE
   grade := 'Fail'
 writeln('Your grade is ', grade)
END.
```

Output:

```
Enter marks : 55
Your grade is Pass
```

5. Boolean Example

```pascal
PROGRAM cond3;
VAR
 marks : integer;
 pass : boolean;
BEGIN
 write('Enter marks : ');
 read(marks);
 pass := (marks >= 40);
 IF pass THEN
   Writeln('Pass')
 ELSE
   writeln('Fail');
```

Output:

```
Enter marks : 30
Fail
Boolean Value = FALSE
```

```
  writeln('Boolean Value = ', pass)
END.
```

6. Multiple Grade Conditions

```
PROGRAM cond4;
VAR
 marks : integer;
 grade : char;
BEGIN
 write('Enter marks : ');
 read(marks);
 IF (marks >= 75) THEN
    grade := 'A'
 ELSE IF (marks >= 65) THEN
    grade := 'B'
 ELSE IF (marks >= 55) THEN
    grade := 'C'
 ELSE IF (marks >= 40) THEN
    grade := 'S'
 ELSE
    grade := 'W';
 writeln('Your grade is ', grade)
END.
```

Output:

```
Enter marks : 68
Your grade is B
```

7. For Loop Example (1 to 10)

```
PROGRAM rep1;
VAR
 i : integer;
BEGIN
 FOR i := 1 TO 10 DO
 writeln('Hello')
END.
```

Output:

```
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
Hello
```

8. For Loop DownTo Example

```pascal
program ForLoopDownToExample;
var
  i: integer;
begin
  for i := 5 downto 1 do
    writeln(i);
end.
```

Output:

```
5
4
3
2
1
```

9. While Loop Example

```pascal
program WhileExample;
var
  count : integer;
begin
  count := 0;
  while count <= 5 do
  begin
    writeln('Pascal');
    count := count + 1;
  end;
end.
```

Output:

```
Pascal
Pascal
Pascal
Pascal
Pascal
Pascal
```

10. Repeat Until Loop Example

```pascal
program RepeatExample;
var
  count : integer;
begin
  count := 0;
  repeat
    writeln('Pascal');
    count := count + 1;
  until count > 5;
end.
```

Output:

```
Pascal
Pascal
Pascal
Pascal
Pascal
Pascal
```

11. Sum and Average Example

```pascal
PROGRAM sum2;
VAR x, total, count : integer;
 average : real;
BEGIN
 total := 0;
 count := 0;
 write('Enter number : ');
 read(x);
 WHILE (x < 10) DO
 BEGIN
 count := count + 1;
 total := total + x;
 write('Enter number : ');
 read(x)
 END;
 average := total / count;
 writeln;
 writeln('Total = ', total);
 writeln('Average = ', average)
END.
```

Example Output:

```
Enter number : 5
Enter number : 3
Enter number : 12
Total = 8
Average = 4.0
```