



## Higher Diploma in Information Technology

### Introduction to Programming (C++)

Year 1 Semester 1 – 2024

#### Tutorial 04 – Selection Statements in C++

1. Write a C++ program that takes a number from the user and checks whether that is even or odd. **Note: In your program you need to get the number as a user input.**

```
Sample Output:  
Enter an integer: 7  
Number is odd.
```

2. Write a C++ program to calculate the average mark of 3 subjects entered by user. Then program should check whether the status of the student (Pass/Fail) based on the following criteria.

Averangemark >=50	Pass
Averangemark <50	Fail

```
Sample Output:  
Enter marks of 3 subjects: 70 60 65  
Average mark: 65.00  
Status: Pass
```

3. Write a C++ program to calculate and print the centripetal force of planet depending on the velocity and radius of circular path. User enters velocity and the radius of circular path to the program as a user input.

The centripetal force of planet is calculated as follows:

$$f = \frac{mv^2}{r}$$

```
f = centripetal force  
m = 250.74 (Constant value)  
v = velocity  
r = radius of circular path
```

And, the program is required to find the impact type of planet based on the centripetal force.

The impact types are given below.

centripetal force	Impact
0-100	Low Impact
101-150	Normal Impact
151-200	High Impact
Above 200	Ultra Impact

```
Sample Output:  
Enter velocity: 50.25  
Enter the radius of circular path: 30  
The centripetal force of planet is: 21104.472  
Impact is Ultra Impact
```

4. Write a C++ program to calculate and print the net salary of the employee depending on the basic salary and the allowance. User enters the basic salary and the no of overtime hours to the program as a user input.

The allowance for the person calculated as follows based on the no of overtime hours:

No of Overtime Hours	Allowance
No of Overtime Hours $\geq$ 30	20% from basic salary
20 $\leq$ No of Overtime Hours $<$ 30	10% from basic salary
10 $\leq$ No of Overtime Hours $<$ 20	5% from basic salary
No of Overtime Hours $<$ 10	No allowance

The Net salary of the employee is calculated as follows:

**Netsalary = basicsalary+ allowance**

**Sample Output:**

```
Enter basic salary: 25000
Enter no of overtime hours: 25
The Net Salary of Employee: 27500
```

5. Write a C++ program to calculate and print the annual interest amount of the credit card depending on the credit limit and the annual interest rate. User enters the credit card type and credit limit to the program as a user input.

The interest rate for each card type can be determined as follows:

Card Type	Annual interest rate
Platinum(P)	20%
Gold(G)	10%
Silver(S)	5%

The annual interest amount for each card type can be determined as follows

**Annual Interest Amount= Credit Limit \* Annual interest rate**

**Sample Output:**

```
Enter Card Type: P
Enter Credit Limit:50000
The Annual Interest Amount: 10000
```

6. Write a C++ program that will read two numbers and an integer code from the screen. The value of the integer code should be 1, 2, 3 or 4. If the value of the code is 1, compute the sum of the two numbers. If the code is 2, compute the difference. If the code is 3, compute the product of the two numbers. If the code is 4 compute the quotient. If the code is not equal to 1, 2, 3 or 4, display an error message. The program is then to display the computed result to the screen.