Programming Fundamentals

BS (CS) _Fall_2025

# Lab_07 Tasks


## Learning Objectives:

1. Nested if-else
2. Switch Statement

# Lab Tasks

## Submission Instructions

1. Name each Task question as **i25XXXX_Task<NO>** **e.g.** i250000_Task6.cpp
2. Compress all **.cpp** files into a **.zip** file, and name it as *ROLLNO_SEC_LAB06* **e.g. i25XXXX_A_LAB07.**
3. Now you have to submit this zipped file on Google Classroom.
4. If you don't follow the above-mentioned submission instruction, you will be marked **zero.**
5. Plagiarism in the Lab Task will result in **zero** marks in the whole category.

# Zero Tasks

**Q1.** Find the error in switch statement and correct the code. Write the error in comments at the start of the file.

```cpp
#include <iostream>
using namespace std;
int main()
{
  int temp = 3;
  switch (temp)
  {
    case temp < 0 :
        cout << "Temp is negative.\n";
        break;
    case temp == 0:
        cout << "Temp is zero.\n";
        break;
    case temp > 0 :
        cout << "Temp is positive.\n";
        break;
 }
 return 0;
}
```

**Q2.** Dry Run the code

```cpp
#include <iostream>
using namespace std;

int main() {
    int n = -8;

    if (n >= 0) {
        if (n == 0)
            cout << "Number is Zero";
        else {
            if (n % 2 == 0)
                cout << "Positive Even";
            else
                cout << "Positive Odd";
        }
    } else {
        if (n % 2 == 0)
            cout << "Negative Even";
        else
            cout << "Negative Odd";
    }

    return 0;
}
```

# Lab Tasks

**Q3.** Write Write a program to check whether a person can sit on the extreme rides in Joyland. The program should take input, the age and gender of the person.

You can take M for male and F for female (Gender). If the person is male then ask whether his age is above 25 or below 25. If the age is below 25 then print **"You can enjoy the rides"** otherwise print **"Sorry, these rides are not safe for you".**
Also print his age in either case.If she is a female then ask whether she has health issues or not.You can take Y for yes and N for no (health issues). If she has health issues then print

**"Sorry, these rides are not safe for you"** otherwise print **"You can enjoy the rides"**. Also print her age in either case.

Note: Use if-else and ternary operator.

**Q4.** Write a program that takes input a character from the user and tells whether it is a digit or alphabet. If the user enters any character other than digit or alphabet then the program should give error "**Invalid Input**". The program should cater for both uppercase and lowercase letters.
Note: You are allowed to use switch-case only

## Q5. Problem Statement:

Write a C++ program to create a **menu-driven system** for university management.

### Requirements:

1. **Main Menu (use `switch`)**

```
1. Student Fee Calculation
2. Faculty Salary Bonus
3. Event Ticket Booking
4. Exit
```

### Case 1: Student Fee Calculation

- Input:
  - Course Type → UG (Undergraduate) / PG (Postgraduate)
  - Credits taken
- Rule:
  - UG → Rs. 2000 per credit
  - PG → Rs. 3000 per credit
- Use **ternary operator**:
  - If credits > 20 → 10% discount
  - Else → full fee.

### Case 2: Faculty Salary Bonus

- Input:
  - Faculty Type → 1. Professor (Base = 100,000)
  - 2. Assistant Professor (Base = 70,000)
  -

3. Lecturer (Base = 50,000)
    - Years of Service
- Use **ternary operator**:
    - If Years ≥ 10 → Bonus = 20%
    - Else If Years ≥ 5 → Bonus = 10%
    - Else → Bonus = 5%.
- Output final salary.

## Case 3: Event Ticket Booking

- Ticket Price = Rs. 500
- Input: Age of attendee.
- Use **ternary operator** to apply discount:
    - If Age < 12 → 50% off
    - If Age ≥ 60 → 30% off
    - Else → No discount.

## Case 4: Exit Program