Programming Fundamentals

BS (CS) _Fall_2025

Lab_06 Tasks

Learning Objectives:

1. Operators (Relational, Logical)
2. Selection Statement (if and if, else)

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_LAB06.**
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. Write a program in C++ and insert parentheses in the given Boolean expression to invert its output. The use of the NOT operator (!) is not allowed. You may use only one pair of parentheses ().

```
int main() {

    bool result = true || false && false;
    cout<<"Result: "<<result<<endl;
}
```

```
Result: 1
```

Q2. Write a C++ program that takes two numbers as input, determines which number is greater, and displays one of the following messages:

- "<No1.> is greater than <No2.>"
- "<No1.> is not greater than <No2.>"

Lab Tasks

Q3. Write a C++ program that takes a number as input and checks whether it is a multiple of 2, 3 or 5. For each case display the message: "<Number> is a multiple of <Divisor>."

Example:

Input: 15

Output:

15 is a multiple of 3.

15 is a multiple of 5.

Q4. Write a C++ program that takes a number as input and checks whether it is a positive even or positive odd. If Number is negative, display "number is negative".

Note: Nested selection statements are not allowed.

Q5. Write a program that calculates the monthly income tax based on the following rules:

- Income <= 50,000 → No tax
- Income between 50,001 and 60,000 → 10% tax
- Income between 60,001 and 80,000 → 20% tax + additional 5000 fee
- Income between 80,001 and 100,000 → 30% tax + additional 20000 fee
- Income > 100,000 → 40% tax + additional 25,000 fee + 5% luxury surcharge.

Input: An integer representing income.

Output: The final tax amount.

Q6. Write a C++ program to check the strength of a passwor. It take 3 inputs from user:

- password length = <number>
- contains upper case = y/n
- contains digit = y/n

The program should display a message according to the following conditions:

- If length is greater than or equal to 8 and conatins uppercase and contains digit : Strong
- If length is greater than or equal to 8 and contains either an uppercase letter or a digit, or the length is greater than 15: Medium
- Else : Weak

Note: You can use at most three conditional branches.