

CL-1002

Programming Fundamentals

Lab # 4

Objectives:

1. Understanding IDE.
2. Practicing Basic Programming using if, else-if and nested if.
3. Practicing Basic Programming using switch-case, compound statement and ternary operator.
4. Practicing Basic Programming using while loop.

Note: Carefully read the following instructions (*Each instruction contains a weightage*)

1. First think about statement problems and then write your program.
2. Write Program in C compiler/IDE and save source file **for each program**.
3. **Do not copy from any source otherwise you will be penalized with negative marks.**
4. Complete your lab **within given Time Slot**.
5. Add your source code in this word document (take screen shot) + Make one ZIP file of your all source codes.
6. Please submit your **Both files** with this naming convention ROLLNO_SECTION_LABNO.
7. Submit your lab on Google Classroom.

Find the OUTPUT of the following code.

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

int main() {
    return 0;
}

int a = 1;
while (a <= 5)
{
    cout<<"Welcome to iteration
structure: "<<endl;
}

return 0;
}

#include <iostream>
using namespace std;

int main() {

int a = 1;
(a%2==0) ?
Cout<<"Even Number:" :
cout<<"Odd Number:" ;
```



Exercise

1. Write a C++ code that take a character from user and check whether it is vowel or consonant (using switch-case)
2. Write a C++ code that take an age from user and check whether candidate is eligible of voting or not. If age is greater than 18 then eligible otherwise not eligible (using ternary operator).
3. Suppose that sale and bonus are double variables. Write an if...else statement that assigns a value to bonus as follows: If sale is greater than \$20,000, the value assigned to bonus is 15%; if sale is greater than \$10,000 and less than or equal to \$20,000, the value assigned to bonus is 10%; otherwise, the value assigned to bonus is 0. Add bonus into total sale and display updated bonus.
4. Using switch statement C++ Program to take the value from the user as input marks of five subjects Physics, Chemistry, Biology, Mathematics, and Computer. Calculate percentage and grade according to the following: Percentage $\geq 90\%$: Grade A, Percentage $\geq 80\%$: Grade B, Percentage $\geq 70\%$: Grade C, Percentage $\geq 60\%$: Grade D, Percentage $\geq 40\%$: Grade E, Percentage $< 40\%$: Grade F, Using switch statement.
5. C++ Program to take the value from the user as input the basic salary of an employee and calculate its Gross salary according to the following: Basic Salary ≤ 10000 : HRA = 20%, DA = 80%.....Basic Salary ≤ 20000 : HRA = 25%, DA = 90%.....Basic Salary > 20000 : HRA = 30%, DA = 95%.
6. C++ Program to take the value from the user as input electricity unit charges and calculate total electricity bill according to the given condition: For the first 50 units Rs. 0.50/unit.....For the next 100 units Rs. 0.75/unit.....For the next 100 units Rs. 1.20/unitFor unit above 250 Rs. 1.50/unit.....An additional surcharge of 20% is added to the bill.....Using the switch statement.
7. Write a program that determines a student's grade. The program will read three types of scores (quiz, mid-term, and final scores) and determine the grade based on the following rules:if the average score $\geq 90\%$ \Rightarrow grade=A.....if the average score $\geq 70\%$ and $< 90\%$ \Rightarrow grade=B.....if the average score $\geq 50\%$ and $< 70\%$ \Rightarrow grade=C.....if the average score $< 50\%$ \Rightarrow grade=F



8. Program to take the hours and minutes as input by the user and the show that whether it is AM or PM by using the switch statement.
9. Program to convert a positive number into negative number and negative number into a positive number using switch