

C++ Structured Program (Lecture Activities)

Group Works

Exercise 1 (5 min)

Write a program that do the following

1. Reads a temperature, **temp**.
2. Check if the given temperature **temp** is above the normal temperature **normal_temp** (37°C) (*Use IF-ELSE statement*)
3. When it is true, prints the following statement "You have a fever".
4. When it is false, prints the following statement "Your temperature is normal".

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

int main( ){
    // Declare variables
    float temp;

    // Read temp
    cin>> temp;

    // Check if the temp > 37 and print the suitable message
    if (temp >37)
        cout<< "You have a fever";
    else
        cout<< "Your temperature is normal";
    return 0;
}
```

Exercise 2 (5 min)

Repeat Exercise 1 using ? operator

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

int main( ){
    // Declare variables
    float temp;

    // Read temp
    cin>> temp;

    //Declare msg variable and initialize it with a suitable
message based on the validation of (temp > 37)
    string msg = (temp>37)? "You have a fever": "Your temperature
is normal";

    //Print the message
    cout<<msg;
return 0;
}
```

Exercise 3 (10 min)

Write a program that do the following: 1) Read a distance, **d**. 2) **Use IF-ELSE to** assign a value to double variable cost depending on the value of **d** as bellow. 3) Print the cost

Distance	Cost
0 through 100	5.00
More than 100 but not more than 500	8.00
More than 500 but less than 1,000	10.00
1,000 or more	12.00

```
int main( ){
    // Declare variables
    float distance, cost=0;

    // Read distance
    cin>> distance;

    // validate distance value and save it in cost

    if (distance >0 && distance<=100)
        cost=5;
    else if (distance >100 && distance<=500)
        cost=8;
    else if (distance >500 && distance<1000)
        cost=10;
    else if (distance >=1000)
        cost=12;
    // print cost
    cout<<cost;
    return 0;
}
```

Exercise 4 (10 min)

Write a program that do the following: 1) Read a distance, **d**. 2) **Use Switch to** assign a value to double variable **cost** depending on the value of **d** as bellow. 3) Print the cost

Distance	Cost
100	5.00
500	8.00
1000	10.00
others	12.00

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

int main( ){
    // Declare variables
    int distance, cost;

    // Read distance
    cin>> distance;

    // validate distance value and save it in cost
    switch(distance){
        case 100: cost= 5; break;
        case 500: cost= 8; break;
        case 1000: cost= 10; break;
        default: cost= 12;
    }
    // print cost
    cout<<cost;
    return 0;
}
```

Individual Work

Write a program that check whether an employee is qualified to be promoted to Manager. Qualified employee should have at least 10 years of experience and received at least 5 training sessions and his/her current position is Assistant Manager. If the employee has less than 10 years' experience, print a message ("Need more experience."). If the employee received less than 5 training sessions, print a message ("Need more training."). If the employee's job position is not Assistant Manager, print a message ("Become Assistant Manager first."). An example of the program output is shown below.

```
Enter the number of years: 11
Enter the number of training received: 6
Enter your current position (J- Junior, S- Senior, A- Asst. Manager): A
You are qualified to be promoted to Manager
```