

BSc (Hons) in Information Technology

Year 1- Semester 2

Tutorial Week 1

IT1050-Object Oriented Concepts

Semester 1, 2024

Objectives: To refresh the programming knowledge you have learnt in IT1010 – Introduction to Programming

Exercise 1 - Calculations

Write a C program to input marks of two subjects. Calculate and print the average of the two marks.

Exercise 2 - Selection

Write a program to calculate the amount to be paid for a rented vehicle.

- Input the distance the van has travelled
- The first 30 km is at a rate of 50/= per km.
- The remaining distance is calculated at the rate of 40/= per km.

e.g.

Distance -> 20
Amount = $20 \times 50 = 1000$

Distance -> 50
Amount = $30 \times 50 + (50-30) \times 40 = 2300$

Exercise 3 - Repetition

Write a C program to calculate the sum of the numbers from 1 to n.
Where n is a keyboard input.

e.g.

n -> 100
sum = $1+2+3+\dots+99+100 = 5050$

n -> 10
sum = $1+2+3+\dots+10 = 55$

Exercise 4 - Functions

Implement the three functions `minimum()`, `maximum()` and `multiply()` below the `main()` function.

Do not change the code given in the `main()` function when you are implementing your solution.

```
int main() {
    int no1, no2;
    printf("Enter a value for no 1 : ");
    scanf("%d", &no1);
    printf("Enter a value for no 2 : ");
    scanf("%d", &no2);
    printf("%d ", minimum(no1, no2));
    printf("%d ", maximum(no1, no2));
    printf("%d ", multiply(no1, no2));
    return 0;
}
```

Exercise 5 :

Practice writing C++ programs.

Convert the C program given below which converts a length given in cm to inches to a C++ program.

Please Note that the input command in C++ is `std::cin`. This is a representation of the Keyboard.

e.g.

```
float data1;
int data2;
scanf("%f", &data1); --> std::cin >> data1;
scanf("%d", &data2); --> std::cin >> data2;
```

You already know that `printf()` in C is `std::cout` in C++

e.g.

```
printf("Hello World") --> std::cout << "Hello World";
```

2.54cm = 1 inch

```
#include <stdio.h>
void main(void)
{
    float cm, inches;
    printf("Enter a length in cm : ");
    scanf("%f", &cm);
    inches = cm / 2.54;
    printf("Length in inches is %f \n", inches);
}
```