

Year 1
BSc (Hons) in Information Technology

Tutorial 6

IT1010 – Introduction to Programming

Semester 1, 2020

Question 1

Draw a flowchart to input an integer from the keyboard and display whether the number is positive, negative or zero. If the number is > 0 display “number is positive”. If number is zero display “Number is zero”. Otherwise display “Number is negative”.

Convert the flowchart to a C program.

Question 2

Draw a flow chart to enter a number from the keyboard and print whether it is an even number or an odd number.

Convert the flowchart to a C program.

Question 3

A palindrome is a number or a text phrase that reads the same backward as forward. For example 12321, 45554. Write a C program that reads a five-digit integer and determines whether it is a palindrome or not.

Question 4

Write a C program to input the grade from the keyboard and print the respective messages. (Use if-else statements and upper and lower case both should be allowed when entering the grade)

Grade	Message
A	Excellent
B	Good
C	Satisfactory
F	Needs Improvement

Question 5

Re-write the answer for question 4 using switch statements.

Question 6

Convert the following switch statement to an equivalent if-else statement.

```
switch ( grade ) {  
    case 'A' : printf( "Excellent \n");  
                break;  
    case 'B' : printf( "Good \n");  
                break;  
    case 'c' :  
    case 'C' : printf( "OK \n");  
                break;  
    default : printf( "Needs Improvement\n");  
}
```

Question 7

A company calculates the bonus given to their employees based on the employee category. Write a C program to input the employee category and basic salary and calculate the bonus amount.

Employee category	Bonus percentage
1	5%
2	10%
3	15%

$\text{Bonus} = \text{Basic_Salary} * \text{Bonus_Rate}$