For Journal [15 Marks]

Year and Semester: FE (Sem 1)

Class: CSE (AIML)

Instructor Name: Asst. Prof. Shaikh Mohd Ashfaque

Subject Name: C Programming

Subject Code: VSEC102

Practical No:	01
Title:	a. WAP to print basic details on screen and format it using escape sequence. b. WAP to get students PCM marks from the user and find the average and eligibility.
Date of Performance:	
Date of Submission:	
Roll No:	
Name of Student	

Evaluation:

Sr. No:	Rubric	Marks
1	On time Submission & Completion (3)	
2	Knowledge (5)	
3	Performance (5)	
4	Discipline (2)	

Signature of the Instructor:

Experiment No. 1
CPL (C Programming Lab)

Aim :   WAP to demonstrate Input, Output and Operators.

Software :   Codeblocks and MingW

Dev Setup :   *Codeblocks + MingW Setup*

Visit the below site to download the setup for the Codeblocks IDE.

https://www.codeblocks.org/downloads/binaries/

Basic Structure of C

```c
#include <stdio.h>

int main()
{


    return 0;
}
```

1. printf and scanf

printf: It is a standard C library function used to output data to the console. The format of printf is:

printf("format string", variable1, variable2, ...);

The format string contains text to be printed and format specifiers that define how the variables should be displayed. Some common format specifiers are:

- %d: for integers
- %f: for floating-point numbers
- %c: for characters
- %s: for strings

Example:

int num = 5;
printf("The number is: %d", num);

Escape Sequence in C

Escape Sequence	Representation	Description
\\	Backslash (\)	Inserts a single backslash character.
\'	Single Quote (')	Inserts a single quote character.
\"	Double Quote (")	Inserts a double quote character.
\n	Newline	Moves the cursor to the next line.
\t	Horizontal Tab	Inserts a horizontal tab space.
\r	Carriage Return	Moves the cursor to the beginning of
\a	Alert (Bell)	Triggers an alert sound (beep).
\b	Backspace	Moves the cursor one position back.

scanf: It is used to read input from the user. It takes input from the standard input (usually the keyboard) and stores it in the provided variables. Its syntax is:

scanf("format string", &variable1, &variable2, ...);

The format specifiers used in scanf are the same as in printf. Variables passed to scanf must have their memory addresses passed using the & operator.

Example:

int num;

scanf("%d", &num);

2. Operators in C

C provides various operators for performing operations on data. These operators are divided into categories:

- **Arithmetic Operators**: Used for mathematical calculations.

    o + (Addition)

    o - (Subtraction)

    o * (Multiplication)

    o / (Division)

    o % (Modulus)

- **Relational Operators**: Used to compare values.

    o == (Equal to)

- o != (Not equal to)

- o > (Greater than)

- o < (Less than)

- o >= (Greater than or equal to)

- o <= (Less than or equal to)

- **Logical Operators**: Used to perform logical operations.

  - o && (Logical AND)

  - o || (Logical OR)

  - o ! (Logical NOT)

- **Assignment Operators**: Used to assign values to variables.

  - o = (Assign)

  - o +=, -=, *=, /=, %= (Compound assignment)

- **Increment/Decrement Operators**: Used to increase or decrease a value by one.

  - o ++ (Increment)

  - o -- (Decrement)

- **Bitwise Operators**: Used to perform bit-level operations.

  - o & (AND)

  - o | (OR)

  - o ^ (XOR)

  - o ~ (NOT)

  - o << (Left shift)

  - o >> (Right shift)

Task 1 :   **WAP to print your name, age, class, division and UIN on the screen. Use escape sequences to properly format the output.**

Program with Output:

Pre-Lab Questions:

1. What are escape sequences in C and why are they used?

2. How can you format the output in C using escape sequences?

3. What are some common escape sequences used in C programming?

Post-Lab Questions:

1. What escape sequences did you use in the program to format the output?

2. How would you print a backslash (\) in your program using escape sequences?

3. How would you modify the program to include more fields, such as phone number, using proper formatting?

Task 2:   **WAP to get students PCM marks from the user and find the average. Use conditional operator to print if the student is eligible for admission. Eligibility criteria is 50% in PCM.**

Program with Output:

Pre-Lab Questions:

1. What data types will you use to store the marks in this program?

2. What formula will you use to calculate the average of three numbers?

3. How will you implement conditional logic to check eligibility in this program?

Post-Lab Questions:

1. What was the output of the program when you tested it with different marks?

2. What would happen if you input negative marks? How can you handle such cases in the code?

3. How can you modify the program to get input for more subjects or add more conditions for eligib

Conclusion:

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CO's Covered:

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```c
/*
                            Expt 1 - Task 1
        Module 1 : Fundamentals of C Programming
        Aim: WAP to print your name, age, class, division
         and ROLL-NO & Subject on the screen. Use escape sequences
         to properly format the output.

        NAME: SHAIKH MOHD ASHFAQUE
        BRANCH: AIML
        DIV: A
        SUBJECT: C PROGRAMMING
        ROLL-NO: 1234

*/


#include<stdio.h>


int main(){
    printf("Full Name\t: Shaikh Mohd Ashfaque\n");
    printf("Age\t\t: 39\n");
    printf("Class\t\t: FE\n");
    printf("Division\t: A\n");
    printf("ROLL-NO\t\t: 12345\n");
    printf("SUBJECT\t\t: C PROGRAMMING\n");

    return 0;
}

/* OUTPUT

Full Name          : Shaikh Mohd Ashfaque
Age                : 26
Class              : FE
Division           : D
UIN                : 241P005

*/
```

```c
/*
    Expt 1 - Task 2
    Module 1 : Fundamentals of C Programming
Aim: WAP to get students PCM marks from the user and find the average.
Use conditional operator to print if the student is eligible for
admission. Eligibility criteria is 50% in PCM.

    NAME: SHAIKH MOHD ASHFAQUE
    BRANCH: AIML
    DIV: A2
    SUBJECT: C PROGRAMMING
    ROLL-NO: 1234

*/

#include<stdio.h>

int main(){
    int phy,chem,math,avg;

    printf("\t\t\t *** Student Eligibility Calculator *** \n\n\n");

    printf("Enter Physics Marks: ");
    scanf("%d", &phy);
    printf("Enter Chemistry Marks: ");
    scanf("%d", &chem);
    printf("Enter Maths Marks: ");
    scanf("%d", &math);

    avg = (phy + chem + math)/3;

    printf("PCM Average = %d\n", avg);
    avg>=50?printf("You are Eligible for Admission"):printf("You are
NOT Eligible for Admission");

    return 0;
}

/* OUTPUT

Enter Physics Marks: 45
Enter Chemistry Marks: 56
Enter Maths Marks: 78
PCM Average = 59
You are Eligible for Admission

*/
```