	SVKM's NMIMS **Mukesh Patel School of Technology Management & Engineering /** **School of Technology Management & Engineering**

B. Tech/MBA Tech	**Lab and Workbook**	**Academic Year- 2024-25**
Year:-First	**Subject:-** Programming for Problem Solving	**Semester:- First**

Experiment: 2

PART B

(PART A: TO BE COMPLETED AND SUBMITTED BY STUDENTS)

Students must execute all the programs, write executed code in the workbook, and submit part B of experiment 2 on the student portal. The filename should be PPS_batch_rollno_experimentno. Example: PPS_A1_A001_P1

Aim: Implementing various programs using operators, expressions and input/output operations

Tasks:

1.	Write a program to initialize your details like age, name, gender, city, height etc and display it. (for name & city use character array ex. char name [20])
2.	Write a program to read your details like age, name, gender, city, height etc and display it.
3.	Write a program to exchange values of two variables without using 3rd variable
4.	Given the value of x, y, and z. Write a program to rotate their values such that x has value of y, y has value of z and z has value of x.
5.	Write a program to find area & perimeter of a circle
6.	Write a program to calculate simple interest.
7.	Write a program to convert temperature in Celsius to Fahrenheit.
8.	A four-digit number is inputted through the keyboard. Write a program to calculate sum of digits of a number.
9.	A four-digit number is inputted through the keyboard. Write a program to reverse the number.
10.	Write a program to find largest of two numbers using ternary operator.
11.	If the length of three sides of a triangle is input through the keyboard, write a program to find the area of triangle and check whether the triangle is valid or not using conditional operator. Hint: - A triangle is valid if the sum of its two sides is greater than the third side.
12.	Write a program to calculate compound interest.

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Executed Code, Input and Output

1.	Write a program to initialize your details like age, name, gender, city, height etc and display it. (for name & city use character array ex. char name [20])

Executed Code: -
// Paste the executed code here
 	
Input Output: -
// Paste the input/output of executed code	

2.	Write a program to read your details like age, name, gender, city, height etc and display it.

Executed Code: -
// Paste the executed code here
 	
Input Output: -
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3.	Write a program to exchange values of two variables without using 3rd variable

Executed Code: -
// Paste the executed code here
 	
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4.	Given the value of x, y, and z. Write a program to rotate their values such that x has value of y, y has value of z and z has value of x.
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// Paste the executed code here

Input Output: -
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5.	Write a program to find area & perimeter of a circle

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// Paste the executed code here

Input Output: -
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6.	Write a program to calculate simple interest.

Executed Code: -
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Input Output: -
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7.	Write a program to convert temperature in Celsius to Fahrenheit.

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// Paste the executed code here

Input Output: -
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8.	A four-digit number is inputted through the keyboard. Write a program to calculate sum of digits of a number.

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Input Output: -
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9.	A four-digit number is inputted through the keyboard. Write a program to reverse the number.

Executed Code: -
// Paste the executed code here

Input Output: -
// Paste the input/output of executed code

10.	Write a program to find largest of two numbers using ternary operator.

Executed Code: -
// Paste the executed code here

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11.	If the length of three sides of a triangle is input through the keyboard, write a program to find the area of triangle and check whether the triangle is valid or not using conditional operator. Hint: - A triangle is valid if the sum of its two sides is greater than the third side.

Executed Code: -
// Paste the executed code here

Input Output: -

// Paste the input/output of executed code

12.	Write a program to calculate compound interest.

Executed Code: -

// Paste the executed code here

Input Output: -

// Paste the input/output of executed code

Observation and Learning: -

- Write your observation and learning

Question of Curiosity

[To be answered by student based on the practical performed and learning/observations]

1. Convert Following Mathematical Equations to programming equivalent statement
   a. $C = a^2 + b^2$
   b. $a^2 + b^2 = \mathrm{C}$
   c. $r = a(b + c)$
   d. $r = ab + ac$
   e. $A = \frac{1}{2}bh$
   f. $\mathrm{r} = \frac{\pi}{2}$
   g. $A = \pi r^2$
   h. $S = 4\pi r^2$
   i. $r = \frac{a^n}{b^n}$
   j. $A = P\left(1 + \frac{r}{n}\right)^{nt}$
   k. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$