

Requirements:

A floppy diskette is required for storing programs.

Project Assessment 1: - 10%

Develop a program to calculate the Volume of a Sphere by using the formula:

$$V = \frac{4}{3}\pi r^3; \quad \pi = 3.141593$$

Your submitted work will include the following:-

- ☐ The Five Design steps discussed in class to develop a program.
- ☐ Flow Chart
- ☐ Program Source Code
- ☐ Signed validation of Program execution

Project Assessment 2: - 10%

Write a program to calculate the area of a number of different mathematical shapes with the below sample output.

The program must show use of exit-condition loop structure, conditional statements, and a design methodology including flow-chart is required.

Your submitted work will include the following:-

- ☐ The Five Design steps discussed in class to develop a program.
- ☐ Flow Chart
- ☐ Program Source Code
- ☐ Signed validation of Program execution

Sample Output

[Main Menu]

This program will let you calculate the area of any of the below selected shapes, using the standard mathematical formulas. Select a Shape by typing the number corresponding to the shape.

1. Square
2. Rectangle
3. Triangle
4. Parallelogram
5. Trapezoid
6. Rhombus
7. Circle

0. Quit

[Select an option to continue]

(sample selection of option 6, the screen disappears and displays the following)

[6. Rhombus]

The area of a rhombus is calculated with the formula $a=bh$.

b: what is the base ? ____

h: what is the height? ____

The area for the rhombus is ____

(sample selection of option 0, the screen disappears and displays the following)

[0. Quit]

Thank-you for using our software

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Author: _____

Date: _____

Project Assessment 3: - 10%

Program Design Logic.

You have been assigned the task of developing a program to simulate the game of "Craps". You are being supplied with the logic of the game and a flow chart of how the program game should flow. Write

the QBasic program and make any corrections, modifications to the logic as is required. *The game rule can be accepted as true and will be from which the program code will be compred.*

The game should allow the option for the player to throw the dice, quit, and continue with another game.

Craps, a dice game: Game Rules

Number of Dice: 2

1st Throw:

If sum of the dice is 7 or 11, the dice player wins

If sum of the dice is 2 or 3 or 12, the player loses

All other numbers become the player's "points"

2nd and subsequent throws

If the sum of the dice is 7, the player loses and loses a turn

If the sum of the dice is equal to the player's points, the player wins.

Your submitted work will include the following:-

- ☐ The Five Design steps discussed in class to develop a program.
- ☐ Flow Chart
- ☐ Program Source Code
- ☐ Signed validation of Program execution

Overall internal assessment mark: 30%

Craps, a dice game: Flow Chart

