DAY 3

#include <stdio.h>

#include <math.h>

#define PI 3.14159

int main() {

int choice;

double area, perimeter;

printf("Choose the shape to calculate the area and perimeter for:\n");

printf("1. Square\n");

printf("2. Rectangle\n");

printf("3. Circle\n");

printf("4. Triangle\n");

printf("Enter your choice (1, 2, 3, or 4): ");

scanf("%d", &choice);

switch (choice) {

case 1: {

double side;

printf("Enter the side length of the square: ");

scanf("%lf", &side);

area = side \* side;

perimeter = 4 \* side;

printf("The area of the square is: %.2lf\n", area);

printf("The perimeter of the square is: %.2lf\n", perimeter);

break;

}

case 2: {

double length, width;

printf("Enter the length of the rectangle: ");

scanf("%lf", &length);

printf("Enter the width of the rectangle: ");

scanf("%lf", &width);

area = length \* width;

perimeter = 2 \* (length + width);

printf("The area of the rectangle is: %.2lf\n", area);

printf("The perimeter of the rectangle is: %.2lf\n", perimeter);

break;

}

case 3: {

double radius;

printf("Enter the radius of the circle: ");

scanf("%lf", &radius);

area = PI \* radius \* radius;

perimeter = 2 \* PI \* radius; // Circumference

printf("The area of the circle is: %.2lf\n", area);

printf("The circumference of the circle is: %.2lf\n", perimeter);

break;

}

case 4: {

double a, b, c, s;

printf("Enter the lengths of the three sides of the triangle:\n");

printf("Side 1: ");

scanf("%lf", &a);

printf("Side 2: ");

scanf("%lf", &b);

printf("Side 3: ");

scanf("%lf", &c);

perimeter = a + b + c;

s = perimeter / 2; // Semi-perimeter for Heron's formula

area = sqrt(s \* (s - a) \* (s - b) \* (s - c));

if (a + b > c && b + c > a && c + a > b) {

printf("The area of the triangle is: %.2lf\n", area);

printf("The perimeter of the triangle is: %.2lf\n", perimeter);

} else {

printf("These side lengths do not form a valid triangle.\n");

}

break;

}

default:

printf("Invalid choice. Please choose a number between 1 and 4.\n");

break;

}

return 0;

}