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#include <stdio.h>

#include "string.h"

const float PI = 3.14159265358979323846;

void main()

{

int loop = 1;

char choice[50] = "hi";

puts("Welcome to the Area Calculator!");

puts("\nYou can calculate the area for: \nTriangle, Rectangle, Circle or Trapezium.\nType 'Done' to exit the program.\n");

puts("Enter your choice: ");

gets(choice); //get the user's choice

while (loop == 1)

{

if (strcmp(choice, "Triangle") == 0) // if the user's choice is Triangle, then calcate area for triangle.

{

puts("-------------------------------------------------");

float base = 0.0;

float height = 0.0;

printf("Calculating the area of a triangle.\n");

printf("Enter base: ");

scanf\_s("%f", &base); //ask user for base

printf("\nEnter height: ");

scanf\_s("%f", &height); //ask user for height

printf("Thank you. calculating area...\n");

float area = 0.5 \* base \* height; //calculate area

printf("Area = %0.2f", area); //display area

puts("\n-------------------------------------------------");

}

else if (strcmp(choice, "Rectangle") == 0) // if the user's choice is Rectangle, then calcate area for rectangle.

{

puts("-------------------------------------------------");

float width = 0.0;

float height = 0.0;

printf("Calculating the area of a Rectangle.\n");

printf("Enter width: ");

scanf\_s("%f", &width); //ask user for base

printf("\nEnter height: ");

scanf\_s("%f", &height); //ask user for height

printf("Thank you. calculating area...\n");

float area = width \* height; //calculate area

printf("Area = %0.2f", area); //display area

puts("\n-------------------------------------------------");

}

else if (strcmp(choice, "Circle") == 0) // if the user's choice is Circle, then calcate area for Circle.

{

puts("-------------------------------------------------");

float radius = 0.0;

printf("Calculating the area of a circle.\n");

printf("Enter radius: ");

scanf\_s("%f", &radius); //ask user for radius

printf("Thank you. calculating area...\n");

float area = radius \* radius \* PI; //calculate area

printf("Area = %0.2f", area); //display area

puts("\n-------------------------------------------------");

}

else if (strcmp(choice, "Trapezium") == 0) // if the user's choice is Trapezium or Trapezoid, then calcate area for Trapezium.

{

float height = 0.0;

float a = 0.0;

float b = 0.0;

printf("Calculating the area of a Trapezium.\n");

printf("Enter height: ");

scanf\_s("%f", &height); //ask user for height

printf("Enter a: ");

scanf\_s("%f", &a); //ask user for a

printf("Enter b: ");

scanf\_s("%f", &b); //ask user for b

printf("Thank you. calculating area...\n");

float aPlusB = a + b; //calculate area

float area = 0.5 \* (aPlusB) \* height;

printf("Area = %0.2f", area); //display area

puts("\n-------------------------------------------------");

}

else if (strcmp(choice, "Done") == 0)

{

//only end the program when the user types 'Done', otherwise loop the program again.

return 0;

}

if(strcmp(choice, "Triangle") != 0 && strcmp(choice, "Rectangle") != 0 && strcmp(choice, "Circle") != 0 && strcmp(choice, "Trapezium") != 0 && strcmp(choice, "Done") != 0)

{

puts("Invalid choice. try again."); //message if the user didn't enter one of the options

}

// get next choice

puts("\nYou can calculate the area for: \nTriangle, Rectangle, Circle or Trapezium.\nType 'Done' to exit the program.\n");

puts("Enter your choice: ");

gets(choice);

}

}

