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COSC 111.001

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11/4/15

Assignment 4

23. CODE

#include <iostream>

using namespace std;

int main()

{

double pi = 3.14159; //value of pi

double area, length, width, base, height; //used to calculate area

int case\_choice; //will be used to determine case of which area to solve for

cout << "Welcome to the Geometry Calculator!\n";

cout << "What would you like to find?\n";

cout << endl;

cout << "1. Calculate the Area of a Circle\n"

<< "2. Calculate the Area of a Rectangle\n"

<< "3. Calculate the Area of a Triangle\n"

<< "4. Quit\n";

cout << endl;

cout << "Choose case: 1-4\n";

cin >> case\_choice; //input for a case number 1-4

while (case\_choice < 1 || case\_choice > 4) //validates a case between 1 and 4 is chosen.

{

cout << "Invalid Case Choice, Try Again.\n";

//cin.clear(); // stops the infinite loop

//cin.ignore(); // stops infinite loop

cin >> case\_choice; //re-enter a case choice

}

cout << endl;

switch (case\_choice)

{

case 1: // area of a circle

cout << "what is the radius of the circle?\n";

double radius;

cin >> radius; //numerically; no characters

while (radius < 0)

{

cout << "invalid values, try again.\n";

cin >> radius;

}

area = pi \* (radius \* radius);

cout << "The area of the circle is " << area << endl;

break;

case 2: // area of a rectangle

cout << "what is the length and width of the rectangle?\n";

cin >> width >> length; //numerically; no characters

while (width < 0 || length < 0)

{

cout << "invalid values, try again.\n";

cin >> width >> length;

}

area = length \* width;

cout << "The area of the rectangle is " << area << endl;

break;

case 3: // area of a triangle

cout << "What is the length of the base and height of the triangle?\n";

cin >> base >> height; //numerically; no characters

while (base < 0 || height < 0)

{

cout << "invalid values, try again.\n";

cin >> base >> height;

}

area = (base \* height) / 2;

cout << "The area of the triangle is " << area << endl;

break;

case 4: // quit

cout << "okay\n";

break;

}

cout << "Thank you for using the Geometry Calculator!\n"; //exit statement

return 0;

}

RESULT

Welcome to the Geometry Calculator!

What would you like to find?

1. Calculate the Area of a Circle

2. Calculate the Area of a Rectangle

3. Calculate the Area of a Triangle

4. Quit

Choose case: 1-4

-2

Invalid Case Choice, Try Again.

-10

Invalid Case Choice, Try Again.

3

What is the length of the base and height of the triangle?

-9

-4

invalid values, try again.

9

4

The area of the triangle is 18

Thank you for using the Geometry Calculator!

Press any key to continue . . .

1. CODE

#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

int n; // Number

int total = 0; // Accumulator, initialized with 0

// Get the number.

cout << "Input the number: "; cin >> n;

while (n < 0)

{

cout << "This is not a valid input. Try again: ";

cin >> n;

}

// accumulate a total.

for (int count = 1; count <= n; count++)

{

total += count; // Accumulate the running total.

}

// Display the total.

cout << "the sum of 1-" << n << " is " << total << ".\n";

return 0;

}

RESULT

Input the number: 5

the sum of 1-5 is 15.

Press any key to continue . . .

1. CODE

#include <iostream>

#include <iomanip>

using namespace std;

int main()

{

int years; // Number of years

int count = 0;

// Get the number of years.

cout << "For how many years are projected?: ";

cin >> years;

cout << endl;

cout << "RISE OF OCEAN LEVEL IN MILLIMETERS OVER " << years << " YEARS" << endl;

cout << "------------------------------------------------\n";

// Get the ocean level for each year and accumulate a total.

while (count < years)

{

count++;

double mm = 1.5;

cout << "year " << count << ": \t\t\t" << count\*mm << " mm\n";

}

return 0;

}

RESULT

For how many years are projected?: 25

RISE OF OCEAN LEVEL IN MILLIMETERS OVER 25 YEARS

------------------------------------------------

year 1: 1.5 mm

year 2: 3 mm

year 3: 4.5 mm

year 4: 6 mm

year 5: 7.5 mm

year 6: 9 mm

year 7: 10.5 mm

year 8: 12 mm

year 9: 13.5 mm

year 10: 15 mm

year 11: 16.5 mm

year 12: 18 mm

year 13: 19.5 mm

year 14: 21 mm

year 15: 22.5 mm

year 16: 24 mm

year 17: 25.5 mm

year 18: 27 mm

year 19: 28.5 mm

year 20: 30 mm

year 21: 31.5 mm

year 22: 33 mm

year 23: 34.5 mm

year 24: 36 mm

year 25: 37.5 mm

Press any key to continue . . .