Functions.h:

/\*

Program: Functions.h

Programmer: Emely Seheon (eseheon1@cnm.edu)

Date: 8/4/20

Purpose: To fix the broken code shown below.

\*/

//Ivonne Nelson CIS 1275 C++ I

//Paint Calculator - Functions

//in Files

//Functions.h Put function prototypes here

#include <string>

using namespace std;

void WriteGreeting();

//Put all parameters on one line to make it easier to read for both functions below, for syntax

int HowManyGallons(double length, double width, double height, int coverage, int coats, string ceiling);

int HowManygallons(double radius, double height, int coverage, int coats, st

Functions.cpp:

/\*

Program: Functions.cpp

Programmer: Emely Seheon (eseheon1@cnm.edu)

Date: 8/4/20

Purpose: To fix the broken code shown below.

\*/

//Ivonne Nelson CIS 1275 C++ I

//Paint Calculator - Functions

//Functions.cpp put function bodies here

#include <string>

#include <cmath>

#include <iostream>

#include "Functions.h"

using namespace std;

#define PI 3.14159;

void WriteGreeting()

{

cout << "\n\n Ivonne Nelson CIS 1275 C++ I - Paint Calculator."

<< "\n This program will calculate the number of gallons "

<< "of paint \nneeded to paint a room.";

}

//Put all parameters on one line for syntax to make it easier to read.

int HowManyGallons(double length, double width, double height, int coverage, int coats, string ceiling)

{

double paintedArea = 0., exactPaint = 0.;

paintedArea = 2.0 \* height \* (length + width);

//Sytax, added curly brackets around the if

if (ceiling == "y") { //paint ceiling

paintedArea += length \* width;

}

paintedArea \*= coats; //how many coats

exactPaint = paintedArea / coverage;

int gallons = static\_cast<int>(ceil(exactPaint));

return gallons;

}

//Put all parameters on one line for syntax to make it easier to read. Also changed the 'g' in gallons from upper to lower case.

int HowManygallons(double radius, double height, int coverage, int coats, string ceiling)

{

//creeated double pi so future pointer arrors won't appear, syntax

double pi = 3.14159;

double paintedArea = 0., exactPaint = 0.;

//used pi instead of PI to avoid pointer errors, syntax

paintedArea = pi \* 2.0 \* radius \* height;

//syntax error, added curly brackets aroud the if

if (ceiling == "y") { //paint ceiling

//used pi instead of PI to avoid pointer errors, syntax

paintedArea += pi \* radius \* radius;

}

paintedArea \*= coats; //how many coats

exactPaint = paintedArea / coverage;

int gallons = static\_cast<int>(ceil(exactPaint));

return gallons;

}

SeheonQ5.cpp:

/\*

Program: SeheonQ5.cpp

Programmer: Emely Seheon (eseheon1@cnm.edu)

Date: 8/4/20

Purpose: To fix the broken code shown below.

\*/

//Ivonne Nelson CIS 1275 C++ I

//Paint Calculator - Functions

//Driver.cpp

#include <iostream>

#include "Functions.h"

int main()

{

WriteGreeting();

double length = 0., width = 0., height = 0., radius = 0.;

int coverage = 200, coats = 1, shape = 1, gallons = 0;

string ceiling = "n", name = "";

cout << "\n\n Please enter your first and last names:\n\n";

//Changed cin to getline because it is a string, not an int, logic fix

getline (cin, name);

cout << "\n\n Is your room rectangular(enter 1) or round(enter 2)?\n\n";

cin >> shape;

cout << "\n\n How many coats of paint do you want? ex. 2\n\n";

cin >> coats;

//Moved the specification of units to before the '?' instead of at the end of the example in order to ensure users will not out units in their respponse, prevents logic error

cout << "\n\n What is the coverage of your paint in sq ft/gal? ex. 250\n\n";

cin >> coverage;

cout << "\n\n Do you want to paint the ceiling? (y/n)\n\n";

cin >> ceiling;

//Added another equal sign, so that it is not an assignment

if (shape == 1) // if room is rectangular

{

cout << "\n\n Please enter the length, width "

<< "and height of your room in feet, \nleaving a space between "

<< "the numbers:\n\n";

cin >> length >> width >> height;

gallons = HowManyGallons(length, width, height, coverage, coats, ceiling);

cout << "\n\n " << name << ", ";

cout << "Your room is " << length << " feet by " << width

<< " feet and " << height << " feet high.";

}

if (shape == 2) // if room is round

{

cout << "\n\n Please enter the radius and height of your room in feet,"

<< "\n leaving a space between the numbers:\n\n";

cin >> radius >> height;

//Changed 'g' to lower to make sure the circle function is being used, syntax

gallons = HowManygallons(radius, height, coverage, coats, ceiling);

cout << "\n\n " << name << ", ";

cout << " Your room is " << radius << " feet in diameter and "

<< height << " feet high.";

}

if (ceiling == "y")

cout << "\n\n You are painting your ceiling.";

else

cout << "\n\n You are not painting your ceiling.";

cout << "\n\n You will need " << gallons

<< " gallons of paint to paint your room " << coats << " coats.\n\n";

return 0;

}