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CS 31, Project 2, hw.docx

Answers are written in green

1. What is the output produced by the following program segment? Don't just run it — trace through it and figure it out by hand (which is a skill you'll need for the exams).

string grendel = "endl";

cout << "endl";

cout << grendel;

cout << endl;

cout << "grendel";

endlendl

grendel

1. Consider the following program:

#include <iostream>

using namespace std;

int main()

{

int len;

cout << "Enter a number: ";

cin >> len;

for (int i = 0; i < len; i++)

{

for (int j = i+1; j < len; j++)

{

cout << " ";

}

cout << "#" << endl;

}

}

In a brief, simple English sentence, state what this program does (e.g. "It prints a picture of an aqueduct."). Again, figure this out by hand.

User enters an integer number len, which prints out an decreasing amount of spaces followed by a “#”, creating a diagonal line going from lower left to upper right of len amount of “#”s.

1. Copy the program in problem 2 and change it so that for any input number, the changed program produces *exactly* the same output as the original, but the changed program uses a while loop instead of a for loop for the inner loop.

#include <iostream>

using namespace std;

int main()

{

int len;

cout << "Enter a number: ";

cin >> len;

int i = 0;

while (i < len)

{

int j = i+1;

while (j < len)

{

cout << " ";

j++;

}

cout << "#" << endl;

i++;

}

}

1. Assume month has been previously declared as an int and given a meaningful value. Write a switch statement that for any value of month, produces exactly the same output as the following if statement.

if (month == 6)

cout << "summer solstice";

else if (month == 12)

cout << "winter solstice";

else if (month == 3 || month == 9)

cout << "equinox";

else

cout << "nothing special";

switch (month)

{

case 3:

case 9:

cout << “equinox”;

break;

case 6:

cout << “summer solstice”;

break;

case 12:

cout << “winter solstice”;

break;

default:

cout << “nothing special”;

}