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CS 31

HW 2

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";

**Answer**:

endlendl

grendel

1. Consider the following program:

#include <iostream>

using namespace std;

int main()

{

int side;

cout << "Enter a number: ";

cin >> side;

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

{

for (int j = i; j >= 0; j--)

{

cout << "#";

}

cout << "\n";

}

}

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

**Answer**:

It asks the user for an integer and gives an output of a right triangle where the number of “#’s” in each row is equal to the actual row number and the number of rows is equal to whatever the user inputs.

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 side;

cout << "Enter a number: ";

cin >> side;

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

{

int j = i;

while (j >= 0)

{

cout << "#";

j--;

}

cout << "\n";

}

}

1. Assume codeSection has been previously declared as an int and given as its value the number of a section of the [California Penal Code](https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=PEN). Write a switch statement that for any value of codeSection, produces exactly the same output as the following if statement.

if (codeSection == 281)

cout << "bigamy";

else if (codeSection == 321 || codeSection == 322)

cout << "selling illegal lottery tickets”;

else if (codeSection == 383)

cout << "selling rancid butter";

else if (codeSection == 598)

cout << "injuring a bird in a public cemetery";

else

cout << "some other crime";

**Answer:**

switch (codeSection) {

case 281:

cout << “bigamy” << endl;

break;

case 321:

case 322:

cout << “selling illegal lottery tickets” << endl;

break;

case 383:

cout << “selling rancid butter” << endl;

break;

case 598:

cout << “injuring a bird in a public cemetery” << endl;

break;

default:

cout << “some other crime” << endl;

}