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CS 31

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**Homework w/ Project 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 endline = "endl";

cout << "endl";

cout << endline;

cout << endl;

cout << "endline";

My response:  
endlendl

endline

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;

}

return( 0 );

}

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.

My response:

This program will create an upward sloping line of ‘#’ with the total number of ‘#’ signs dictated by the user’s input: ie if user inputs 3, the program will return:

#

#

#

#

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, i =0, j = 0;

cout << "Enter a number: ";

cin >> len;

while (i < len) {

j = i + 1;

while (j < len) {

cout << " ";

j++;

}

cout << "#" << endl;

i++;

}

return (0);

}

1. Copy the program you wrote for problem 3 and change it so that for any input number, it produces *exactly* the same output as the original, but uses a do-while loop instead of a for loop for the outer loop. Be careful! (Hint: How does it behave if len is not positive?) You may need to add a little additional code to make sure the program behaves identically to the program in problem 3.

#include <iostream>

using namespace std;

int main()

{

int len, i =0, j = 0;

cout << "Enter a number: ";

cin >> len;

do {

if (len > 0) {

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

{

cout << " ";

}

cout << "#" << endl;

i++;

}

} while (i < len);

return (0);

}

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

if (weekday == 1)

cout << "rainy days and mondays get me down";

else if (weekday == 2)

cout << "ruby tuesday";

else if (weekday == 6 || weekday == 7)

cout << "wonderful weekend";

else

cout << "regular day";

switch (weekday) {

case 1:cout << "rainy days and mondays get me down"; break;

case 2:cout << "ruby tuesday"; break;

case 6:cout << "wonderful weekend"; break;

case 7:cout << "wonderful weekend"; break;

default: cout << "regular day"; break;

}