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**23.1**

# TUTORIAL 04

**1) What is wrong with the following if statement (there are at least 3 errors). The Indentation indicates the desired behavior.**

if numNeighbors >= 3 || numNeighbors = 4

++numNeighbors;

printf("You are dead! \n " );

else

--numNeighbors;

* In the start missed parantheses() after the if statement
* After that curly bracket {} are missed
* After the else curly brackets {} are missed
* The proper answer will be -:

if (numNeighbors >= 3 )

{

++numNeighbors;

printf("You are dead! \n " );

}

else {

--numNeighbors;

}

**2) Describe the output produced by this poorly indented program segment**

int number = 4;

* 4 is assigned to integer variable.

double alpha = -1.0;

* -1.0 is assigned to double alpha variable.

if (number > 0)

* Looking if the number is grater than 0.

if (alpha > 0)

* re checking if the alpha is greater than 0.

printf("Here I am! \n" );

* this line shows “Hear I am!” as the output.

else

* this line wont work, because the above statement is true.

printf("No, I’m here! \n");

* this also not work, because this is a part of a else.

printf(“No, actually, I’m here! \n");

* this will print “No, actually, I’m here!”.

**3) Consider the following if statement, where doesSignificantWork, makesBreakthrough, and nobelPrizeCandidate are all boolean variables:**

if (doesSignificantWork) {

if (makesBreakthrough)

nobelPrizeCandidate = true;

else

nobelPrizeCandidate = false;

}

else if (!doesSignificantWork)

nobelPrizeCandidate = false

* if (doesSignificantWork) {

if (makesBreakthrough)

nobelPrizeCandidate = true;

else

nobelPrizeCandidate = false;

}

else if (!doesSignificantWork)

nobelPrizeCandidate = false;

**4) Write if statements to do the following:**

– If character variable taxCode is ’T’, increase price by adding the taxRate percentage of price to it.

– If integer variable opCode has the value 1, read in double values for X and Y and calculate and print their sum.

– If integer variable currentNumber is odd, change its value so that it is now 3 times currentNumber plus 1, otherwise change its value so that it is now half of currentNumber (rounded down when currentNumber is odd).

– Assign true to the boolean variable leapYear if the integer variable year is a leap year. (A leap year is a multiple of 4, and if it is a multiple of 100, it must also be a multiple of 400.)

– Assign a value to double variable cost depending on the value of integer variable distance as follows: