Programming with C Language

Tutorial 04 – Writing if condition

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;
```

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

```
int number = 4;
double alpha = -1.0;
if (number > 0)
if (alpha > 0)
printf("Here I am! \n" );
else
printf("No, I'm here! \n");
printf("No, actually, I'm here! \n");
```

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;
```

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:

Distance	**Cost**
0 through 100	5.00
More than 100 but not more than 500	8.00
More than 500 but less than 1,000	10.00
1,000 or more	12.00