# Lab - If Else and While

**Problem 1:** Write a program `drive1.c` that reads in the students age and then output if he/she is old enguff to drive [age 16 years or older].

**Problem 2:** Write a program `drive2.c` that assumes a person in the age between 16 and 78 is eligible to obtain a driver license. A person that is over 78 will need to pass a mandatory vision test first. This program will need to read in the user's age and then output if they are too young to get a driver license, eligible to obtain a driver license, or that they need to pass a mandatory vision test before they can drive.

*Hint: First check if they are under 16 years old, then check if they are over 78 years old before you can output that they are the correct age to obtain a driving license.*

**Problem 3:** The price of renting a movie is $3.99. If the user rents three or more movies the price per movies is reduced to $3.49 per movie. Write a program `vidRental1.c` for this video rental shop that reads in how many movies the user rents and then outputs total cost.

**Problem 4:** Copy the program `vidRental1.c` to `vidRental2.c` that does the same thing but have the bill add a 8.5 percent tax.

**Problem 5:** The price of one cpy of a software package is $399. The discount for the softare depends of the volume as shown in this table:

| Number of Copies | Discount |
|---|---|
| less than 5 | No discount |
| less than 20 | 10% discount |
| less then 50 | 15% discount |
| 50 or more | 20% discount |

Write a program `softPackage.c` that reads in how many software packages the user orders and then outputs the total cost with the discount he/she received.

**Problem 6:** Write a program `table3.c` that lists the values of the funciton $f(x) = x^2$ where $x \in [-7, 7]$.

*Hint:* $x^2 = x * x$

**Problem 7:** Write a program `sumOfCounting.c` that finds the sum of the first $n$ counting nubmers.

**Problem 8:** Write a program `tenCubes.c` that reads in ten numbers and then outputs the cub of each number.

**Problem 9:** Write a program `coinFilp.c` that simulates flipping a coin 10 000 times and then outputs the frequency for the number heads and number of tails.

**Problem 10:** Write a program `gussnum.c` that randomily gerates a random integer between 1 to 50. The program then prompts the user to guess the number by displaying the following message:

```
I have a number betwen 1-50. Can you guess what it is?
Enter your guess:
```

After the user inputs a guess, the program should display one of the following responses:

1. Correct!, that's the number.
2. Too low. guess again.
3. Too high. guess again.

The program should loop until the user guesses the correct answer. Use the "Too low" and "Too high" messages to help the user guess the correct number.