Lab 4

Problem 1:

Create a "Guess the Number" game as an example. In this game, the computer generates a random number between a specified range, and the player tries to guess the number. The game provides hints, and the player continues guessing until they find the correct number.

Running out of tries:

```
Before obtaining the prize you must guess the correct password
The password lies in the range of 1-100
You have 10 guesses

( 0 of 10) :>10
      Try guessing a little higher
( 1 of 10) :>20
      Try guessing a little higher
( 2 of 10) :>30
      Try guessing a little higher
( 3 of 10) :>25
      Try guessing a little higher
( 4 of 10) :>28
      Try guessing a little higher
( 5 of 10) :>11
      Try guessing a little higher
( 6 of 10) :>12
      Try guessing a little higher
( 7 of 10) :>56
      Try guessing a little lower
( 8 of 10) :>44
      Try guessing a little higher
( 9 of 10) :>45
      Try guessing a little higher

you lost...sorry...
```

Winning:

```
Before obtaining the prize you must guess the correct password
The password lies in the range of 1-100
You have 10 guesses

( 0 of 10) :>99
      Try guessing a little lower
( 1 of 10) :>1
      Try guessing a little higher
( 2 of 10) :>20
      Try guessing a little higher
( 3 of 10) :>30
      Try guessing a little higher
( 4 of 10) :>40
      Try guessing a little higher
( 5 of 10) :>42
      Try guessing a little higher
( 6 of 10) :>87
      Try guessing a little lower
( 7 of 10) :>89
      Try guessing a little lower
( 8 of 10) :>45

!!!YOU WON!!!
```

Lab 4

Problem 2:

A juggler can hold a ball for 0.65 second and release to the other hand for the next throw. Every ball will return to the juggler's other hand after 1.12 second. How many balls the juggler can juggle without failure for 10 second. Create a C recursive program to solve the problem. How can a juggler can juggle at least 5 balls.

```
How many balls can the juggler juggle?
- = hold
^ = return

      |0|       |1|       |2|       |3|       |4|       |5|       |6|       |7|       |8|       |9|
------^^^^^^^^^^^
                ------^^^^^^^^^^^
                                  ------^^^^^^^^^^^
                                                    ------^^^^^^^^^^^
                                                                      ------^^^^^^^^^^^
                                                                                        ------^^^^^^^^^^^
With a hold time of 0.65 and a return tme of 1.12 the juggler can juggle 6 balls for 10.00 seconds

In order to juggle 5 balls:

      |0|       |1|       |2|       |3|       |4|       |5|       |6|       |7|       |8|       |9|
------^^^^^^^^^^^
                ------^^^^^^^^^^^
                                  ------^^^^^^^^^^^
                                                    ------^^^^^^^^^^^
                                                                      ------^^^^^^^^^^^
With a hold time of 0.65 and a return tme of 1.60 the juggler can juggle 5 balls for 10.00 seconds
```