Lab Worksheet #2
CA5305 (Internet of Things)
October 2021 – January 2022
Instructor: Dr. M. Deivamani
Due: Tuesday, November 02, 2021(11:59pm)

Now that you feel somewhat comfortable with Python, develop all the following five programs. Note that while you might find code examples for these assignments on the web, it is highly recommended to attempt to solve them by yourselves to really gain some experience with Python.

Task 1: Implement the game "Guess the Number!". In this game, the computer randomly chooses a number (e.g., between 1 and 50) and asks the player to guess the correct number. After each guess, the computer informs the user if the guess was correct, too high, or too low. The program should also inform the user how many guesses the user needed. After a certain limit (e.g., five guesses), the program stops and informs the user of the correct number.

Task 2: You may have played rock paper scissors before. Maybe you've used it to decide who pays for dinner or who gets first choice of players for a team. If you're unfamiliar, rock paper scissors is a hand game for two or more players. Participants say "rock, paper, scissors" and then simultaneously form their hands into the shape of a rock (a fist), a piece of paper (palm facing downward), or a pair of scissors (two fingers extended). The rules are straightforward:

- **Rock** smashes scissors.
- **Paper** covers rock.
- **Scissors** cut paper.

Implement the game "Rock, Paper, Scissors". In this game, the computer randomly chooses one of the three options and then asks the user to make a choice. The computer then informs the user if the game is a tie, if the player won, or if the computer won (clearly indicate the computer's choice and why the computer or player won (e.g. "Scissors cut paper!").

Task 3: Write a function "Invoice" (bill) that takes a list of foods (e.g., ["banana", "orange", "apple", "guva"]) as input and computes the total price (only for items in stock) and adjusts the stock accordingly. Write the bill computation as function that takes one parameter (list of foods).

```
stock = { "banana": 6,
          "apple": 0,
          "orange": 32,
          "pear": 15
          "guva": 10}
prices = { "banana": 4,
           "apple": 2,
           "orange": 1.5,
           "pear": 3
```

“guva”: 4}

Task 4: Continue Task 3 by writing the shopping list into a newly created file, each item in a new line. Then write a second program that reads the file in a loop, line by line and prints each line.

Task 5: Write a simple Python program using an editor on your laptop, e.g., a calculator, a game, etc., but something different from above tasks The program should be interactive, i.e., ask the user for input, perform some processing, and present an output.