

## Homework 2: String, Conditional, Loop, and List

**Exercise 1:** Take input one number. Find average of all odd numbers between zero and number inclusive.

**Exercise 2:** Take input one number. Print the Fibonacci numbers between zero and number.

**Hints:** Fibonacci series: 0 1 2 3 5 8 13 21 34 55 .....

**Exercise 3:** Suppose you are the accountant of a renowned company. All of a sudden, company CEO wants you to find out average salary of the employee's salary in June.

**Hints:** Salaries of all employee in June are stored in a list called `june_salary = [5000, 4000, 7000, 800, 1000, 6000, 75000]`.

**Exercise 4:** You have been hired by a large hospital chain. Then want to develop a hospital management system. This hospital management system will suggest medication according to the diagnosis / disease. You have to first ask the user to enter his/her name. Then it should continue to ask the disease name or type exit. If the problem is headache, fever, or running nose, you should suggest him to go outside and take some fresh air. If the problem is tiredness, or sleeplessness, you should suggest the patient to take a long bath and sleep. Anything else should be given "unknown disease, please consult with specialist". The program should continue to ask disease name until user types exit. When the user types exit, your program should exit by giving a goodbye message "Hello name, thank you to visit us!".

**Hints:** `disease_fresh_air = ["headache", "fever", "running nose"]` `disease_bath = ["tiredness", "sleeplessness"]`. To exist from a loop use keyword `break`.

For example: when `counter < 10`:

```
counter = counter + 1
print (counter)
if counter == 5:
    break
```

this loop will exit when counter value is 5.

**Exercise 5:** Write a recommendation program for the European tourists. You should ask the user which city he/she wants to visit. If average temperature of that city is more than 15 degree and less than 40 degree, recommend him/her to visit that city otherwise no. If you recommend the user to visit the city, please provide one more information that the average temperature of that city of last 5 days.

`Munich_temperate_last_10_days = [10, 11, 16, 09, 22, -3, 23, 24, 17, 21]`

`Dhaka_temperate_last_10_days = [40, 37, 42, 41, 33, 23, 25, -1, 19, 14]`

`Berlin_temperate_last_10_days = [-3, 23, 27, 18, 21, 3, 23, 7, 17, 21]`

`London_temperate_last_10_days = [23, 25, -10, 19, 14, 10, 11, 16, 09, 22]`

`Sydney_temperate_last_10_days = [24, 28, 31, 33, 10, 09, 26, 36, 25, 29]`

**Exercise 6:** Let's build a digital calculator. First show list of functions which your calculator supports and exit to finish the program. Then ask user which function he/she wants to

execute followed by two numbers on which function will be executed. Finally, display the result with reasonable message. Continue the whole process until user type exit as function. Please develop good and understandable UI.

Hints: Welcome to my digital calculator. List of supported functions:

1. Addition.
2. Subtraction.
3. Multiplication.
4. Division.
5. Exit.

**Exercise 7:** Your friend Karim is in trouble. Finding monthly balance is an occurring problem for him. Recently, he heard that you are learning python. So, he came to you so that you can build a solution for him. Your software should take input all the expenses and all the income separately. Finally, it should inform him where he has negative or positive balance. Your program should continue the whole process until you type exit.