University of Mohamed khider

Faculty of Economics, Business and Management Sciences

Subject: Fundamentals of Programming with Python

Level: First Year – Common Core

Exercise 1

Create a list called fruits with these elements:"apple", "banana", "cherry"

Then do the following:

1. Print the whole list.
2. Print the first element.
3. Print the last element.
4. Change "banana" to "orange".
5. Print the list again.
6. Print each element of the list on a separate line.
7. Print the length of the list.

Exercise 2

Given the following list

numbers = [3, 8, 1, 10, 5]

Write a Python program that performs the following tasks using the list above

1. Prints all numbers in the list.
2. Prints only the numbers that are greater than 5.
3. Prints "Even" if a number is even and "Odd" if it is odd, for each number in the list.
4. Calculates and prints the sum of all numbers greater than 3.
5. Prints the square of each number in the list.

Exercise 3

Given the list:

names = ["Mohamed", "Adam", "Nour", "Selma", "Ahmed", "Omar", "Fatima", "Karim"]

Perform the following tasks and print the list after each modification:

1. Add "Youssef" at the end of the list.
2. Insert "Layan" at the second position.

3. Remove "Nour" from the list.
4. Remove the last name using pop().
5. Change "Adam" to "Adel".
6. Sort the list in alphabetical order.
7. Reverse the list.

Exercise 4 (This exercise will be done in the lecture)

Write a Python program that:

Asks the user to enter 8 numbers and stores them in a list called numbers.

Prints the original list.

1. Calculate the maximum, minimum and average of list numbers and print them.
2. Classify the numbers into two separate lists, small and large:

   small → numbers less than 10

   large → numbers 10 or greater
3. Print the lists small and large

Exercise 5

Write a Python program that uses a nested list to store students' names and their grades in 4 subjects (Math, English, Science, History). The initial list is:

grades = [["Ali", 18, 15, 16, 19], ["Sara", 20, 17, 19, 18], ["Omar", 14, 16, 12, 15]]

The program should

1. Print all students and their grades.
2. Print Omar's Science grade.
3. Print Sara's record (all grades).
4. Add a new student "Lina" with grades [16, 18, 17, 16] and print the updated list.
5. Update Omar's Science grade to 15 and print his updated record.
6. Calculate each student's average grade, store the averages in a new list named averages, and print each student's average (2 decimal places).
7. Find and print the name of the student with the highest average.