Python Training

Question 1

Create a dictionary to store your academic details. It should contain information about you and your courses. Try to demonstrate the use of data structures(tuples, lists and dictionaries) we learned in first class. Include as many operations as you can. It is up to you to decide on data organization and operations.

Question 2

1. Define a function that computes the length of a given list or string(Do not use library function of length).
2. Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.
3. Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number. (Hint: split function)

   Suppose the following input is supplied to the program:
   34,67,55,33,12,98
   Then, the output should be:
   ['34', '67', '55', '33', '12', '98']
   ('34', '67', '55', '33', '12', '98')
4. Define a function is_palindrome() that recognizes palindromes (i.e. words that look the same written backwards). For example, is_palindrome("radar") should return True(Try to implement it with custom code and logic instead of Python provided libraries).
5. Write a filter that accepts name and marks of students as dictionary and return only those who have passed(i.e marks greater than 40).
6. Apply function y=sinx for given x values to find the corresponding y values by using map. Use general function as well as lambda function.

Question 3

Write a program to store the stock information of a departmental store. Information should be name, price, quantity and type of item. Use while loop to take the input until user wants. You need to write those information in a file. After the use inputs data, display information for specific item by reading the file written in first step. Use file handling with proper exception handling. You may use data structures if you want. Please use delimiters like **;** or **|** to separate the data values.

Question 4

Write a simple employee management program. It should have common features like getting input about details of employees and storing those details to database. Implement a loop to get the input till the user wants. Your program should be able to search/insert/update/delete employees on the basis of any one parameter(that you can decide) and print the details of that employee. Try to use the data structures(list,

dictionary), functions, exception handling and custom functions. Use OOP for Employee modelling. There should be an option to provide a csv file of database.

Following columns can be inserted in database.

- Id int(10) primary key
- Name varchar(20) not null
- Department varhchar(20)
- DOB datetime
- Join date datetime
- Salary float(10)

Use ; or | as delimiter between records while storing in file.

Notes:

- One employee will have one row.
- Try to cover the topics we have discussed during training. (You are not limited to those concepts but they are enough to cover this task).
- Use localhost as hostname and root as both username and password.
- Use database named assignment and table named <your_name>_employee.
- Your project should be able to run from command line.