

Practical Session 6

Date: 13/08/2025

Topic: Classes

Solve the following problems using Jupyter Notebook. Please write the following for each of the programming assignments.

1. The problem statement
2. The entire program
3. The sample input
4. The sample output

Please get the program report signed by the instructor.

1. Make a class called **Restaurant**. The `__init__()` method for **Restaurant** should store two attributes: a *restaurant_name* and a *cuisine_type*. Make a method called *describe_restaurant()* that prints these two pieces of information, and a method called *open_restaurant()* that prints a message indicating that the restaurant is open.

Make an instance called *restaurant* from your class. Print the two attributes individually, and then call both methods.

2. Start with your program from Q. No. 1. Add an attribute called *number_served* with a default value of 0. Create an instance called *restaurant* from this class. Print the number of customers the restaurant has served, and then change this value and print it again.

Add a method called *set_number_served()* that lets you set the number of customers that have been served. Call this method with a new number and print the value again.

Add a method called *increment_number_served()* that lets you increment the number of customers who've been served. Call this method with any number you like that could represent how many customers were served in, say, a day of business.

3. An ice cream stand is a specific kind of restaurant. Write a class called *IceCreamStand* that inherits from the *Restaurant* class you wrote in Q. No. 1. Either version of the class will work; just pick the one you like better. Add an attribute called *flavors* that stores a list of ice cream flavors. Write a method that displays these flavors. Create an instance of *IceCreamStand*, and call this method.
4. Using your latest *Restaurant* class, store it in a module. Make a separate file that imports *Restaurant*. Make a *Restaurant* instance, and call one of *Restaurant*'s methods to show that the import statement is working properly.
5. The module *random* contains functions that generate random numbers in a variety of ways. The function *randint()* returns an integer in the range you provide. the following code returns a number between 1 and 6:

```
from random import randint  
x = randint(1, 6)
```

Make a class *Die* with one attribute called *sides*, which has a default value of 6. Write a method called *roll_die()* that prints a random number between 1 and the number of sides the die has. Make a 6-sided die and roll it 10 times.

Make a 10-sided die and a 20-sided die. Roll each die 10 times.