Following are **Python assignments** on **Object-Oriented Programming (OOP)** concepts such as **default and parameterized constructors, destructors, member functions, static variables, static methods, and class methods**.

**Assignment 1: Class and Object Creation**

**Objective:** Practice basic class and object creation.  
**Task:**  
Create a class Student with:

* name, age as instance variables
* A member function display() to print details  
  Create 2 student objects and call the display() method.

**Assignment 2: Default Constructor**

**Objective:** Understand default constructors.  
**Task:**  
Create a class Car with a default constructor that prints "Car object created" when an object is created.  
Add a member function info() that prints "This is a car".

**Assignment 3: Parameterized Constructor**

**Objective:** Use parameterized constructors.  
**Task:**  
Create a class Book with:

* title, author, price as parameters to the constructor
* A function details() that prints the book information

**Assignment 4: Destructor**

**Objective:** Implement a destructor in a class.  
**Task:**  
Create a class Employee with a constructor that prints "Employee created" and a destructor that prints "Employee destroyed".  
Create and delete an object to demonstrate both.

**Assignment 5: Static Variables**

**Objective:** Understand static/class variables.  
**Task:**  
Create a class BankAccount with:

* a static variable bank\_name = "SBI"
* acc\_holder and balance as instance variables  
  Add a function show\_details() to print all details including bank\_name.

**Assignment 6: Static Methods**

**Objective:** Use static methods.  
**Task:**  
Create a class MathTools with:

* A static method square(n) that returns the square of the number
* A static method cube(n) that returns the cube  
  Call these methods without creating an object.

**Assignment 7: Class Method**

**Objective:** Practice using @classmethod.  
**Task:**  
Create a class Company with a class variable company\_name = "TechSoft"  
Add a class method change\_company(cls, name) to update company name  
Add a function show() to print the current company name

**Assignment 8: Count Number of Objects Using Class Variable**

**Objective:** Use class variables and constructors.  
**Task:**  
Create a class Counter with a class variable count  
In the constructor, increment the counter each time an object is created  
Print total objects created using a class method.

**Assignment 9: Employee Salary Calculation**

**Objective:** Combine parameterized constructor, member function, and class variable  
**Task:**  
Create a class Employee with:

* name, basic\_salary
* Class variable company = "Infosys"
* Member function calculate\_salary() to compute salary = basic + HRA (20%) + DA (10%)
* Show all info using a display() function

**Assignment 10: Student Grade using Static & Class Methods**

**Objective:** Combine static method and class method usage  
**Task:**  
Create a class Student with:

* name, marks as instance variables
* Static method get\_grade(marks) that returns grade based on marks
* Class method school\_name() returning the school name
* A function display() that prints name, marks, and grade using the static method.