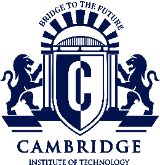
**CAMBRIDGE INSTITUTE OF TECHNOLOGY**

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**Application Development Using Python (18CS55)**

**MODULE-IV**

1. **Define class and object.** Given an example for creating a class and an object of that class.(OR) Differentiate between class variables and instance variables with suitable examples (OR) What do you mean by **“instance as returning value”**? Explain with an example
2. Justify the statement “Objects are mutable” with suitable examples
3. **What are attributes? Explain with an example and respective object diagram.** (OR) When do we encounter AttributeError?
4. Differentiate copy.copy() and copy.deepcopy() with suitable examples.
5. **Differentiate pure functions and modifiers with suitable examples**
6. With help of programming examples explain the difference between Prototype and Planned Programming Development.
7. **Discuss the significance of \_\_init\_\_() and \_str\_ method in Python with a proper example code snippet**.
8. Briefly discuss self keyword in Python.
9. **Discuss operator overloading. Mention any five operators with respective special functions to be overloaded in Python.**
10. **What is type based dispatch? Illustrate with python example.**
11. **Define Polymorphism with python snippet.**
12. **Illustrate the concept of inheritance and class diagram with example.**
13. **Briefly discuss Data Encapsulation.**
14. Differentiate between interface and implementation.

Programs

* Write a program to add two point objects by overloading + operator. Overload \_\_str\_\_() to display point as an ordered pair.
* Write a program to create a class Time to represent time in HH:MM:SS format. Perform following operations:

a. Overload + to add two time objects

b. Overload + to add a numeric value to a time object (commutative)

c. Overload \_\_str\_\_() to display time in appropriate format.

* Write a program to create a class called Point with two attributes x and y. Write following functions and demonstrate the working of these functions by creating suitable objects.

a. To read attribute values

b. To display point as an ordered pair

c. To find distance between two points

d. To find the midpoint of two points

e. To find reflex of the point about x-axis i.e., it must return a new point object

Example: 1point(5,10) -> reflex\_x must return a new point (5,-10)

* Write a program to create a class called Rectangle with the help of a corner point, width and height. Write following functions and demonstrate their working:

a. To find and display center of rectangle

b. To display point as an ordered pair

c. To resize the rectangle

d. To find area and perimeter of a rectangle

* Write a Deck method for **CARDS** suit and rank.