

# CS 115 - Introduction to Programming in Python

## Lab Guide 07

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### Lab Objectives: Classes

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1. Write a class called `Flight` which represents an airline flight. All data should be hidden (`__`)
  - a. The class will store the following attributes:
    - `flightNo` – number of the flight
    - `destination` – where flight is going
    - `departure` – where the flight is leaving from
    - `capacity` – number of seats on the flight
  - b. There should be a variable, `flightOperatingCost` which is set to 150, defined outside all methods.
  - a. Your class should have an **`init()` method** that takes the values of all four attributes as parameters.
  - b. Your class should have set and get methods for all attributes.
  - c. You should also have a `calculateOperatingCost()` method which returns the operating cost multiplied by the capacity of the `Flight`.
  - d. In addition to the above methods, your class should define the following special methods:
    - `__repr__` method. See sample output for format of a `Flight` string.
    - `__lt__` method. A `Flight` is less than another based on the alpha-numeric flight number.
2. Create an application that does the following:
  - a. Create an empty list to store `Flights`.
  - b. Add the flights to the list in the original order (shown in sample run) and display the list.
  - c. Sort the list and display the sorted list.
  - d. Calculate and display the total operating cost for all flights.
  - e. Find and display the flights whose destination are Tokyo.

**Sample Run:**

Original List:

[

Flight Number: TK1234

Departing From: Ankara

Arriving To: Antalya

Seats: 250

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Flight Number: LH8686

Departing From: Munich

Arriving To: Tokyo

Seats: 290

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Flight Number: TK9897

Departing From: Istanbul

Arriving To: Paris

Seats: 195

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Flight Number: TK5432

Departing From: Antalya

Arriving To: Ankara

Seats: 250

]

Sorted List:

[

Flight Number: LH8686

Departing From: Munich

Arriving To: Tokyo

Seats: 290

,

Flight Number: TK1234

Departing From: Ankara

Arriving To: Antalya

Seats: 250

,

Flight Number: TK5432

Departing From: Antalya

Arriving To: Ankara

Seats: 250

,

Flight Number: TK9897

Departing From: Istanbul

Arriving To: Paris

Seats: 195

]

Total Operating Cost: 147750.0

Flight Number: LH8686

Departing From: Munich

Arriving To: Tokyo

Seats: 290