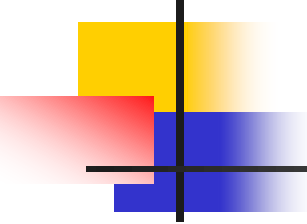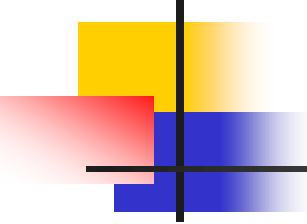# Examples

- Robot
- GPA Calculation

Example 1

- Design a robot control system using Python Object-Oriented Programming.
- Create a base class called "Robot" with the following attributes and methods:
  - Attributes: `name`, `battery_level`, `position`
  - Methods:
    - __init__(self, name, battery_level, position)
    - move(self, distance) # reduce battery level
    - rotate(self, angle) # reduce battery level
    - perform_task(self) # empty method
    - display_status(self) # display name, battery_level, position

- Create three subclasses that inherit from `Robot`:
  - `CleaningRobot`, `SurveillanceRobot`, `AssemblyRobot`
- Each subclass should:
  - Implement a unique method related to its specific task
    - empty_dustbin # battery_level –1
    - night_vision_mode # battery_level -1
    - calibrate_arm # battery_level -1
  - Override the `perform_task()` method with a type-specific implementation

- Create a `RobotController` class that:
  - Has a list to store robots
  - Has methods to add robots, display all robot statuses, and execute tasks for all robots

- Create instances of different robot types and perform operations on them.

Example 2

- Load a txt file with students' grades for HW, exams
- Compute the final grade of each student
- Write the final grades to a file