SECTION 8: OBJECT ORIENTED PROGRAMMING, 1 hour 21 minutes, 9 parts

- **5/9 Object Oriented Programming - Special (Magic/Dunder) Methods**
  - -> going over special methods
  - -> special methods -> builtin operations in Python -> being used with our own created objects
  - -> mylist = [1,2,3]
  - -> len(mylist) <- e.g the builtin function for the length of a list

  - **-> using this builtin function with our defined class**
    - **-> special methods**
      - -> magic methods / dunder methods (these use double underscores)

  - **-> example**
    - class Book():
      - def __init__(self,title,author,pages):
        - self.title = title
        - self.author = author
        - self.pages = pages

    - **b = Book('Python rocks','Jose',200)**
      - **-> print(b) returns that it's a book object (and not the book itself)**
      - -> so in the definition of the class
        - **def __str__(self):**
          - **return f"{self.title} by {self.author}" <- defines an f string literal**
          - **-> then when you print(b) -> this prints the string containing information about the book, and not that the instance of that book is a book object**

    - -> then she prints the class of the book and information about it is returned

    - **-> she does the same thing for the length of the book**
      - -> def __len__(self):
        - return self.pages
        - -> then when the instances of the book are printed out and their page lengths are asked for these print out (rather than that the instance of the class is a book object)

    - **-> del**
      - **del b <- to delete an instance of the class from the memory of the computer**
      - -> you may want other things to occur when you delete the variable
        - **def __del__(self): <- in the definition of the class**
          - **print("A book object has been deleted)**
      - -> then calling the deleted object returns an error
      - -> **these are special methods which are included when defining classes -> str (the string representation) and len (the length of easy to find objects)**