

CSE 132IL: Programming and Problem Solving I Lab

Assignment 7- 100 points

Object Oriented Programming and Classes

What students will learn

- 1) Designing classes including attributes, constructors and methods**
- 2) Creating objects of those class types**

Overview The programs you've written up to this point have started at "main" and basically executed from "top to bottom". In the last assignment, functions/methods were introduced, where you learned that the execution of code could jump from main to a function, then back to main. For this assignment, we're going to practice OOP, or Object Oriented Programming. OOP is a completely different way to think about

Scenario 1: Alice borrows the book "1984"

print(member1.borrow_book(book1))

Output: "Book borrowed successfully"

Scenario 2 Alice tries to borrow "1984" again

print(member1.borrow_book(book1))

Output: "Book already borrowed by this member"

Scenario 3 Alice returns "1984"

print(member1.return_book(book1))

Output: "Book returned successfully"

Scenario 4 Alice tries to return "1984" again (after already returning it)

print(member1.return_book(book1))

Output: "Book not borrowed by this member"

Scenario 5 Another member, Bob, tries to borrow "1984" after Alice has returned it

member2 = Member("Bob")

print(member2.borrow_book(book1))

Output: "Book borrowed successfully"

Scenario 6 Alice tries to borrow more than the limit of 3 books

Define more books

book2 = Book("To Kill a Mockingbird", "Harper Lee")

book3 = Book("The Catcher in the Rye", "J.D. Salinger")

book4 = Book("Pride and Prejudice", "Jane Austen")

```
# Alice borrows 3 books  
print(namber1.borrow_book(book2))  
# Output: "Book borrowed successfully"  
print(namber1.borrow_book(book3))  
# Output: "Book borrowed successfully"  
print(namber1.borrow_book(book4))  
# Output: "Book borrowed successfully"  
  
# Alice tries to borrow a fourth book  
print(namber1.borrow_book(book5))  
# Output: "Borrow limit reached"
```