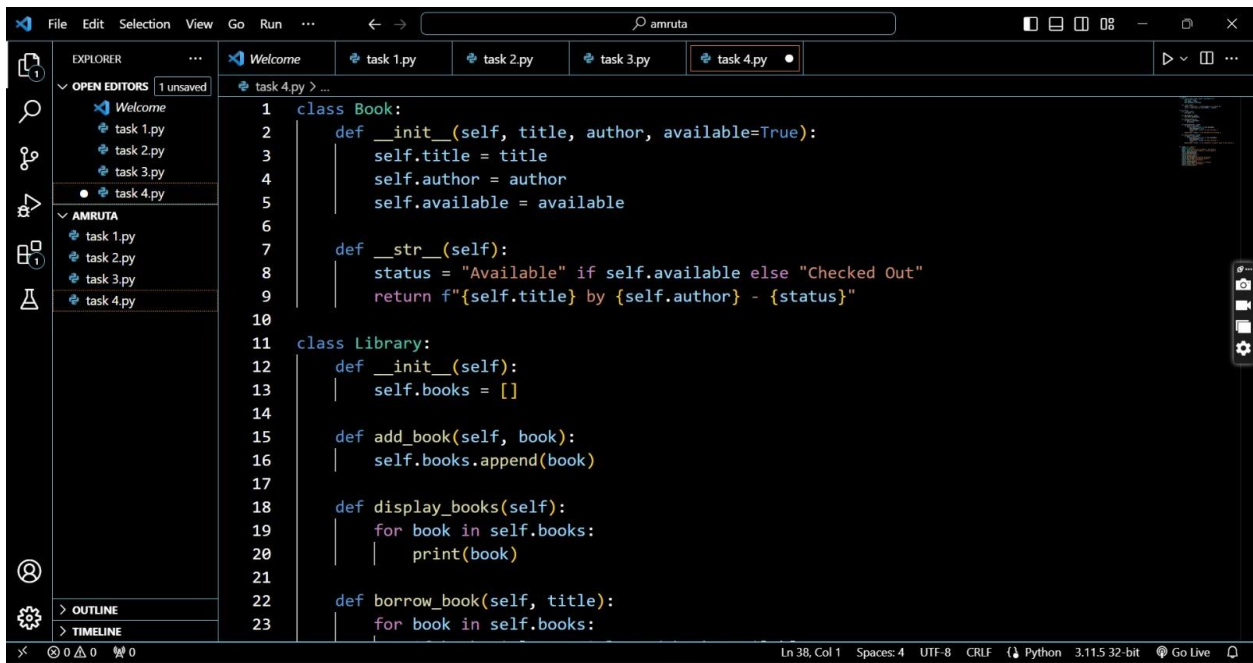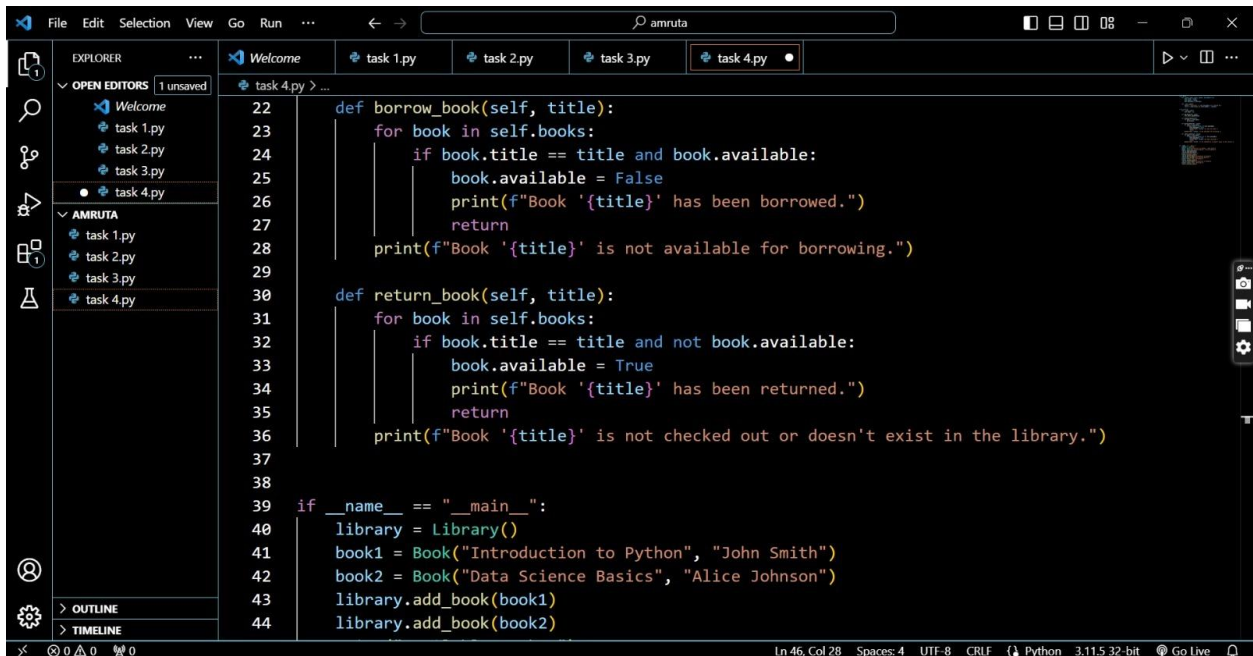# Project 4
Library Management System
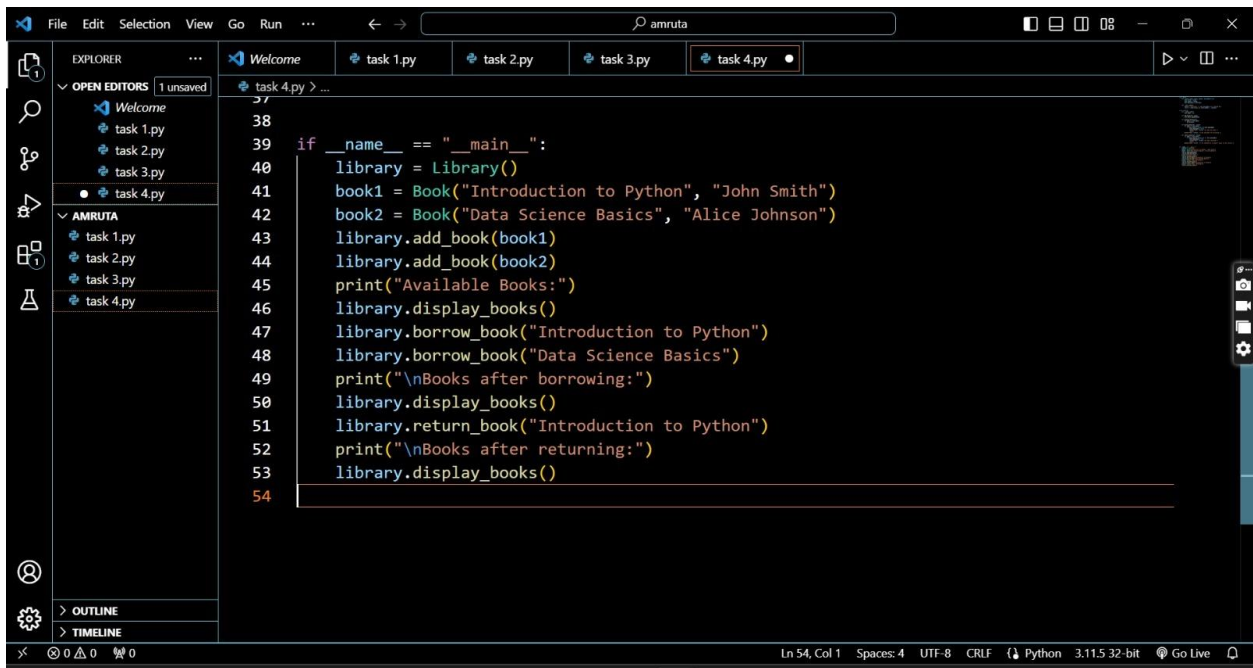
```python
class Book:
    def __init__(self, title, author, available=True):
        self.title = title
        self.author = author
        self.available = available

    def __str__(self):
        status = "Available" if self.available else "Checked Out"
        return f"{self.title} by {self.author} - {status}"

class Library:
    def __init__(self):
        self.books = []

    def add_book(self, book):
        self.books.append(book)

    def display_books(self):
        for book in self.books:
            print(book)

    def borrow_book(self, title):
        for book in self.books:
```
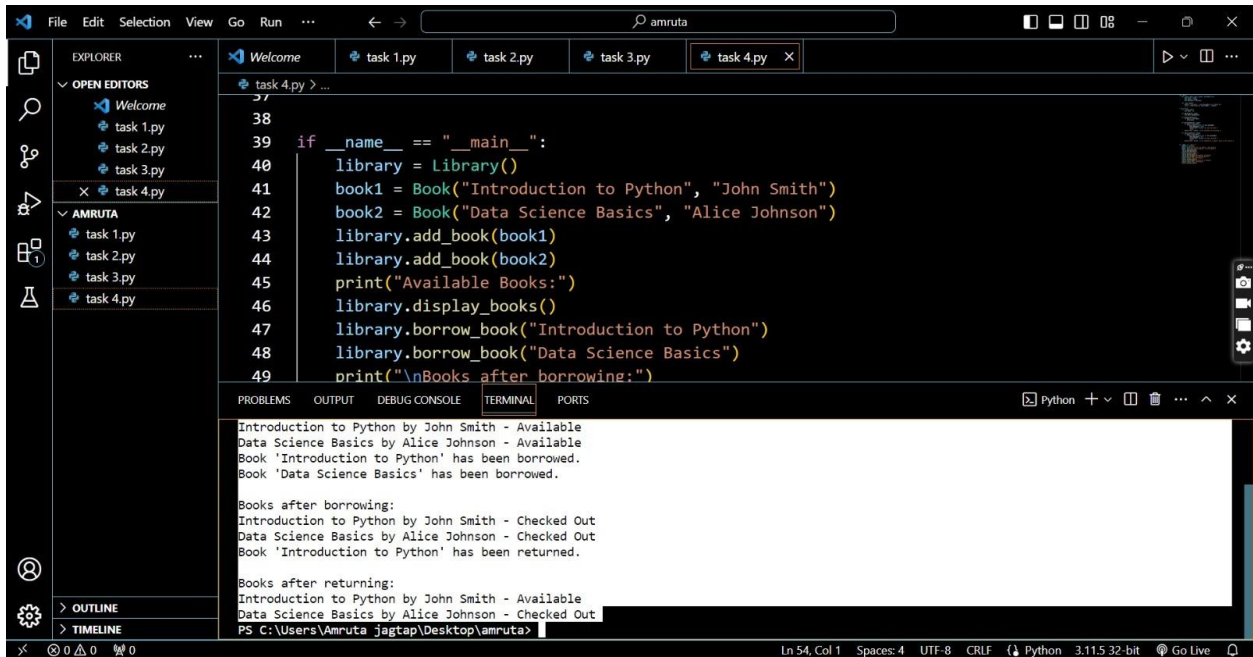
```python
    def borrow_book(self, title):
        for book in self.books:
            if book.title == title and book.available:
                book.available = False
                print(f"Book '{title}' has been borrowed.")
                return
        print(f"Book '{title}' is not available for borrowing.")

    def return_book(self, title):
        for book in self.books:
            if book.title == title and not book.available:
                book.available = True
                print(f"Book '{title}' has been returned.")
                return
        print(f"Book '{title}' is not checked out or doesn't exist in the library.")


if __name__ == "__main__":
    library = Library()
    book1 = Book("Introduction to Python", "John Smith")
    book2 = Book("Data Science Basics", "Alice Johnson")
    library.add_book(book1)
    library.add_book(book2)
```

Project 4
Library Management System


```python
37
38
39  if __name__ == "__main__":
40      library = Library()
41      book1 = Book("Introduction to Python", "John Smith")
42      book2 = Book("Data Science Basics", "Alice Johnson")
43      library.add_book(book1)
44      library.add_book(book2)
45      print("Available Books:")
46      library.display_books()
47      library.borrow_book("Introduction to Python")
48      library.borrow_book("Data Science Basics")
49      print("\nBooks after borrowing:")
50      library.display_books()
51      library.return_book("Introduction to Python")
52      print("\nBooks after returning:")
53      library.display_books()
54
```



```python
37
38
39  if __name__ == "__main__":
40      library = Library()
41      book1 = Book("Introduction to Python", "John Smith")
42      book2 = Book("Data Science Basics", "Alice Johnson")
43      library.add_book(book1)
44      library.add_book(book2)
45      print("Available Books:")
46      library.display_books()
47      library.borrow_book("Introduction to Python")
48      library.borrow_book("Data Science Basics")
49      print("\nBooks after borrowing:")
```

```
Introduction to Python by John Smith - Available
Data Science Basics by Alice Johnson - Available
Book 'Introduction to Python' has been borrowed.
Book 'Data Science Basics' has been borrowed.

Books after borrowing:
Introduction to Python by John Smith - Checked Out
Data Science Basics by Alice Johnson - Checked Out
Book 'Introduction to Python' has been returned.

Books after returning:
Introduction to Python by John Smith - Available
Data Science Basics by Alice Johnson - Checked Out
PS C:\Users\Amruta jagtap\Desktop\amruta>
```