

This system provides basic functionalities to add books to the library, search for books using keywords, borrow books, and return books. The user interacts with the system through a command-line interface, where they can select the desired action by entering a corresponding number.

```
class Library:
```

```
    def __init__(self):
```

```
        self.books = {} # Dictionary to store book information (book_id: (title, author, availability))
```

```
    def add_book(self, book_id, title, author):
```

```
        if book_id in self.books:
```

```
            print("Book with this ID already exists.")
```

```
        else:
```

```
            self.books[book_id] = (title, author, True)
```

```
            print("Book added successfully.")
```

```
    def search_book(self, keyword):
```

```
        results = []
```

```
        for book_id, (title, author, availability) in self.books.items():
```

```
            if keyword.lower() in title.lower() or keyword.lower() in author.lower():
```

```
                results.append((book_id, title, author, "Available" if availability else "Not Available"))
```

```
        if results:
```

```
            print("Search Results:")
```

```
            for book_info in results:
```

```
                print(f"Book ID: {book_info[0]}, Title: {book_info[1]}, Author: {book_info[2]}, Status: {book_info[3]}")
```

```
        else:
```

```
            print("No matching books found.")
```

```
    def borrow_book(self, book_id):
```

```
        if book_id not in self.books:
```

```
            print("Book with this ID does not exist.")
```

```
elif not self.books[book_id][2]: # If the book is not available
    print("The book is currently not available for borrowing.")
else:
    self.books[book_id] = (self.books[book_id][0], self.books[book_id][1], False)
    print("Book borrowed successfully.")
```

```
def return_book(self, book_id):
    if book_id not in self.books:
        print("Book with this ID does not exist.")
    elif self.books[book_id][2]: # If the book is already available
        print("The book is already available in the library.")
    else:
        self.books[book_id] = (self.books[book_id][0], self.books[book_id][1], True)
        print("Book returned successfully.")
```

```
def main():
    library = Library()
```

```
while True:
    print("\nLibrary Management System\n")
    print("1. Add Book")
    print("2. Search Book")
    print("3. Borrow Book")
    print("4. Return Book")
    print("5. Exit")
```

```
choice = input("Enter your choice (1-5): ")
```

```
if choice == "1":
    book_id = input("Enter Book ID: ")
    title = input("Enter Book Title: ")
    author = input("Enter Book Author: ")
    library.add_book(book_id, title, author)

elif choice == "2":
    keyword = input("Enter Keyword to Search: ")
    library.search_book(keyword)

elif choice == "3":
    book_id = input("Enter Book ID to Borrow: ")
    library.borrow_book(book_id)

elif choice == "4":
    book_id = input("Enter Book ID to Return: ")
    library.return_book(book_id)

elif choice == "5":
    print("Thank you for using the Library Management System. Goodbye!")
    break

else:
    print("Invalid choice. Please try again.")

if __name__ == "__main__":
    main()
```