

# C++ Programming Library System Project

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*Teaching, Training and Coaching since more than a decade!*

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# Library System

```
Library Menu;  
1) add_book  
2) search_books_by_prefix  
3) print_who_borrowed_book_by_name  
4) print_library_by_id  
5) print_library_by_name  
6) add_user  
7) user_borrow_book  
8) user_return_book  
9) print_users  
10) Exit
```

```
Enter your menu choice [1 - 10]: |
```

```
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 100 math4 3  
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 101 math2 5  
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 102 math1 4  
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 103 math3 2  
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 201 prog1 5  
Enter your menu choice [1 - 10]: 1  
Enter book info: id & name & total quantity: 201 prog2 3  
Enter your menu choice [1 - 10]: 4
```

```
id = 100 name = math4 total_quantity 3 total_borrowed 0  
id = 101 name = math2 total_quantity 5 total_borrowed 0  
id = 102 name = math1 total_quantity 4 total_borrowed 0  
id = 103 name = math3 total_quantity 2 total_borrowed 0  
id = 201 name = prog1 total_quantity 5 total_borrowed 0  
id = 201 name = prog2 total_quantity 3 total_borrowed 0  
Enter your menu choice [1 - 10]: 5
```

```
id = 102 name = math1 total_quantity 4 total_borrowed 0  
id = 101 name = math2 total_quantity 5 total_borrowed 0  
id = 103 name = math3 total_quantity 2 total_borrowed 0  
id = 100 name = math4 total_quantity 3 total_borrowed 0  
id = 201 name = prog1 total_quantity 5 total_borrowed 0  
id = 201 name = prog2 total_quantity 3 total_borrowed 0
```

# Library System

```
Library Menu;  
1) add_book  
2) search_books_by_prefix  
3) print_who_borrowed_book_by_name  
4) print_library_by_id  
5) print_library_by_name  
6) add_user  
7) user_borrow_book  
8) user_return_book  
9) print_users  
10) Exit
```

```
Enter your menu choice [1 - 10]: |
```



```
Enter your menu choice [1 - 10]: 6  
Enter user name & national id: mostafa 30301  
Enter your menu choice [1 - 10]: 6  
Enter user name & national id: ali 50501  
Enter your menu choice [1 - 10]: 6  
Enter user name & national id: noha 70701  
Enter your menu choice [1 - 10]: 6  
Enter user name & national id: ashraf 90901  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: mostafa math1  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: mostafa math2  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: mostafa math3  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: ali math1  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: ali math2  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: noha math1  
Enter your menu choice [1 - 10]: 7  
Enter user name and book name: noha math2  
Enter your menu choice [1 - 10]: 4
```

```
id = 100 name = math4 total_quantity 3 total_borrowed 0  
id = 101 name = math2 total_quantity 5 total_borrowed 3  
id = 102 name = math1 total_quantity 4 total_borrowed 3  
id = 103 name = math3 total_quantity 2 total_borrowed 1  
id = 201 name = prog1 total_quantity 5 total_borrowed 0  
id = 201 name = prog2 total_quantity 3 total_borrowed 0  
Enter your menu choice [1 - 10]: 9
```

```
user mostafa id 30301 borrowed books ids: 101 102 103  
user ali id 50501 borrowed books ids: 101 102  
user noha id 70701 borrowed books ids: 101 102  
user ashraf id 90901 borrowed books ids:
```

# Library System

```
Library Menu;  
1) add_book  
2) search_books_by_prefix  
3) print_who_borrowed_book_by_name  
4) print_library_by_id  
5) print_library_by_name  
6) add_user  
7) user_borrow_book  
8) user_return_book  
9) print_users  
10) Exit
```

```
Enter your menu choice [1 - 10]: |
```

```
Enter your menu choice [1 - 10]: 2  
Enter book name prefix: ma  
math4  
math2  
math1  
math3  
Enter your menu choice [1 - 10]: 2  
Enter book name prefix: pro  
prog1  
prog2  
Enter your menu choice [1 - 10]: 2  
Enter book name prefix: machine  
No books with such prefix
```

# Library System

```
Library Menu;  
1) add_book  
2) search_books_by_prefix  
3) print_who_borrowed_book_by_name  
4) print_library_by_id  
5) print_library_by_name  
6) add_user  
7) user_borrow_book  
8) user_return_book  
9) print_users  
10) Exit
```

```
Enter your menu choice [1 - 10]: |
```

```
Enter your menu choice [1 - 10]: 3  
Enter book name: math1  
mostafa  
ali  
noha  
Enter your menu choice [1 - 10]: 3  
Enter book name: math2  
mostafa  
ali  
noha  
Enter your menu choice [1 - 10]: 3  
Enter book name: machine  
Invalid book name.
```



# Library System

```
Library Menu;  
1) add_book  
2) search_books_by_prefix  
3) print_who_borrowed_book_by_name  
4) print_library_by_id  
5) print_library_by_name  
6) add_user  
7) user_borrow_book  
8) user_return_book  
9) print_users  
10) Exit
```

```
Enter your menu choice [1 - 10]: |
```

```
Enter your menu choice [1 - 10]: 4
```

```
id = 100 name = math4 total_quantity 3 total_borrowed 0  
id = 101 name = math2 total_quantity 5 total_borrowed 3  
id = 102 name = math1 total_quantity 4 total_borrowed 3  
id = 103 name = math3 total_quantity 2 total_borrowed 1  
id = 201 name = prog1 total_quantity 5 total_borrowed 0  
id = 201 name = prog2 total_quantity 3 total_borrowed 0  
Enter your menu choice [1 - 10]: 9
```

```
user mostafa id 30301 borrowed books ids: 101 102 103  
user ali id 50501 borrowed books ids: 101 102  
user noha id 70701 borrowed books ids: 101 102  
user ashraf id 90901 borrowed books ids:  
Enter your menu choice [1 - 10]: 8  
Enter user name and book name: mostafa math1  
Enter your menu choice [1 - 10]: 4
```

```
id = 100 name = math4 total_quantity 3 total_borrowed 0  
id = 101 name = math2 total_quantity 5 total_borrowed 3  
id = 102 name = math1 total_quantity 4 total_borrowed 2  
id = 103 name = math3 total_quantity 2 total_borrowed 1  
id = 201 name = prog1 total_quantity 5 total_borrowed 0  
id = 201 name = prog2 total_quantity 3 total_borrowed 0  
Enter your menu choice [1 - 10]: 9
```

```
user mostafa id 30301 borrowed books ids: 101 103  
user ali id 50501 borrowed books ids: 101 102  
user noha id 70701 borrowed books ids: 101 102  
user ashraf id 90901 borrowed books ids:
```

*“Acquire knowledge and impart it to the people.”*

*“Seek knowledge from the Cradle to the Grave.”*