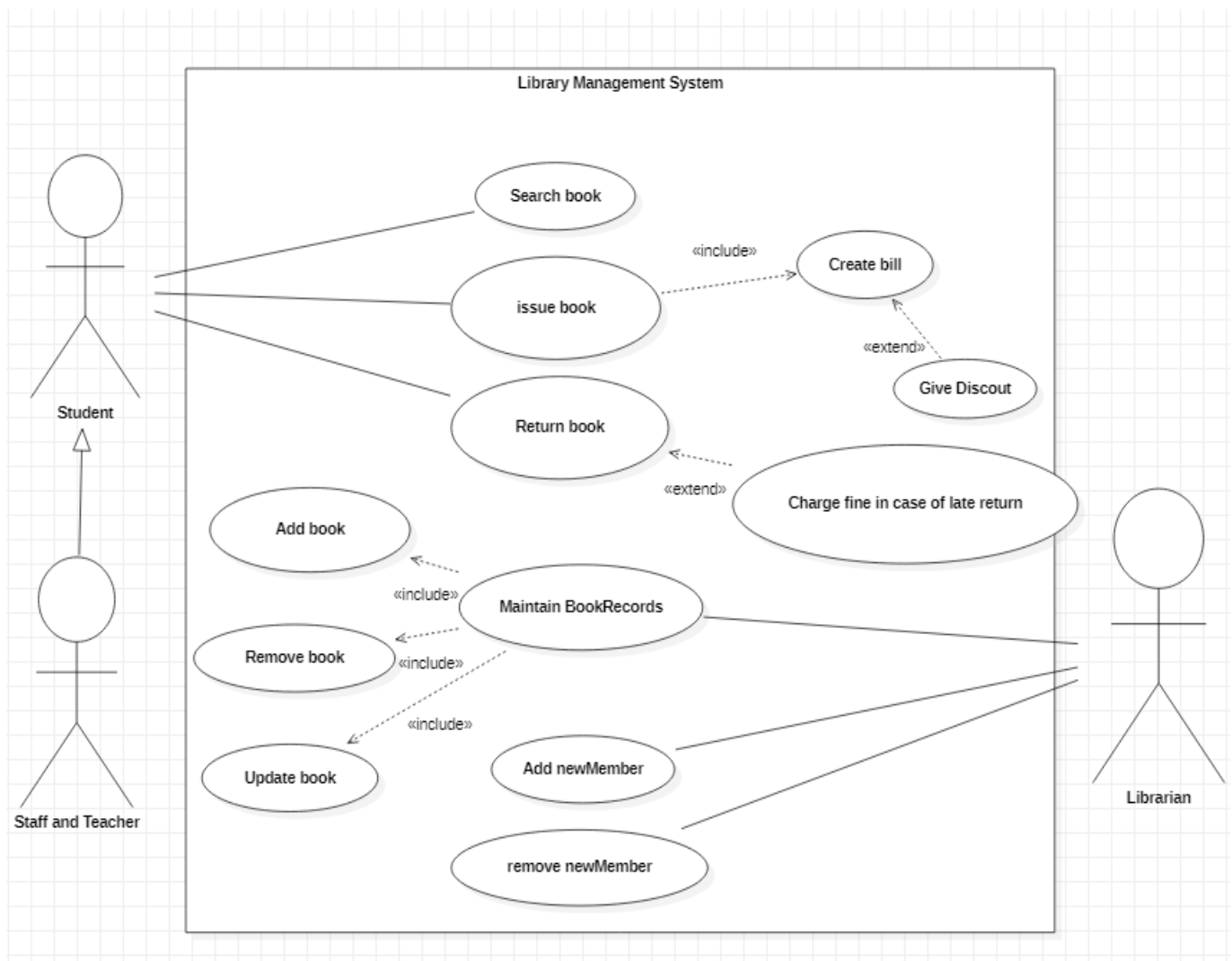Use Case Diagram:

1. Add at least two include and two extends
2. Do not add extends in main use cases (confused? you can either Google it or contact me!)
3. Add at least one generalization (inheritance) in the use cases.

Solution:

Use case diagram of library management system:

Class diagram for library management system:

UML class diagram describes the structure of system by showing the system classes, attributes, methods, and associations between classes.

UML Class diagram for library management system contains classes such as [[at least five classes]]

1.Book class
2.Library Management Systems (Librarian)
3.Transaction class (Money)
4.Member record class (show Generalization)
5.Bill class

Each class contains various attributes and methods(Functions) which call other class attributes to share data.

1. Book Class contains attributes such as author, book name, price status, rack no, edition.
And functions such as display book details, update status.
2. Librarian class contains attributes such as name, password and functions such as search book, issue book, calculate fine, calculate bill.
3.transaction class contains attributes such as transaction id, member id bill id date of issue etc. and functions such as create transaction delete transaction
4.Member record class contains attributes such as member id, type, date of issue, no of books, etc. and functions such as increase book issue, decrease book issue, pay bill.
5. Bill class contains attributes such as bill no, date, member, amount and functions such as create bill, update bill.

Solution:

Class diagram for library management system:

Libraby Management System

1.. *

Book
+book_author
+price_status
+book_name
+rack_no
+book_edition

+Book_details()
+Update_status()

Librarian
+name
+password

+SearchBook()
+issue_book()
+calculate_fine()
+calculate_bill()

Transaction
+transaction_id
+member_id
+bill_id
+date_of_issue

+Create_transaction()
+Delete_transactio()

+Issues

+creates

+request

+creates

+records bills details

MemberRecord
+member_id
+member_type
+date_of_issue
+no_of_books

+increase_bookIssue()
+Decrease_bookIssue()
+pay_bill()
generalization: staff
uses the
MemberRecord class
funtions or
properties(Inheritance)

+payes bills

Bill
+bill_no
+bill_dates
+member
+amount

+createBill()
+updateBill()

Staff and teacher