

Login :

```
login (userID, password) {  
    u = User.find(userID)  
    if (u != null && u.password == password){  
        u.sessions.update()  
        SendAck("Successful")  
    }  
    else  
        SendAck("UnSuccessful")  
}
```

Logout :

```
logout (userID) {  
    u = User.find(userID)  
    if (u != null){  
        u.sessions.update()  
        SendAck("Successful")  
    }  
    else  
        SendAck("UnSuccessful")  
}
```

Search Book :

```
searchBook ( memberID , title ){  
    m = Member.find(mamemberID)
```

```

if ( m != null ){

    bookList = Books.Search(title)

    if ( bookList != null)

        Send(bookList)

    else

        Send(null)

}

else

    Send(null)

}

```

Borrow Book :

```

borrowBook ( memberID , bookID){

    m = Member.find(memberID)

    b = Books.find(bookID)

    if ( m != null && b != null ){

        br = Borrowed.insert( memberID , bookID , getTime())

        if (br )

            SendAck(“Successful”)

        Else

            SendAck(“UnSuccessful”)

    }

    else

        SendAck(“UnSuccessful”)

}

```

```
}
```

Extend borrow time :

```
extendBorrowTime (memberID, bookID, extendTime){  
    m = Member.find(memberID)  
    b = Books.find(bookID)  
    r = Borrowd.find(memberID, bookID)  
    if ( m != null && b != null && r != null ){  
        br = Borrowed.setTime( memberID , bookID ,extendTime )  
        if (br )  
            SendAck("Successful")  
        else  
            SendAck("UnSuccessful")  
    }  
    else  
        SendAck("UnSuccessful")  
}
```

Extend member time :

```
extendMemberTime (memberID, extendTime){  
    m = Member.find(memberID)  
    if ( m != null ){  
        ext = Member.setExpireTime( memberID ,extendTime )  
        if (ext )  
            SendAck("Successful")  
    }  
}
```

```

        else

            SendAck("UnSuccessful")

    }

    else

        SendAck("UnSuccessful")

}

```

Return Book :

```

returnBook ( memberID , bookID){

    m = Member.find(memberID)

    b = Books.find(bookID)

    r = Borrowd.find(memberID, bookID)

    if ( m != null && b != null && r != null){

        br = Borrowed.delete( memberID , bookID)

        if (br )

            SendAck("Successful")

        else

            SendAck("UnSuccessful")

    }

    else

        SendAck("UnSuccessful")

}

```

DeleteManager:

```

deleteManager(managerID){

```

```

mng = Manager.find(managerID)

if (mng != null){

    Manager.delete(managerID)

    SendAck("Successful")

}

else

    SendAck("UnSuccessful")

}

```

CreateManager:

```

createManager(managerID, managerName) {

    Status = Manager.insert(managerID , managerName)

    if (status == 1){

        SendAck("Successful")

    }

    else

        SendAck("UnSuccessful")

}

```

AddLibrarian:

```

addLibrarian(MngID, LID, name, pass, Email ) {

    mng = User.get(MngID)

    If (mng.password != pass)

        SendAck("Unsuccessful")

    else{

```

```

        Librarian.insert(LID , Name , Email);

        SendAck("Successful")

    }

}

```

Remove Librarian:

```

removeLibrarian(MngID, LID ) {

    lbr = Librarian.get(LID)

    Mng = Manager.get(MngID)

    If (Mng != null && lbr != null)

        Librarian.erase(LID)

        SendAck("Successful")

    else

        SendAck("UnSuccessful")

}

```

Add Book:

```

addBook(BID, LID, Bname, BAuthor, BPub ) {

    lib = Librarian.find(LID)

    If (lib != null){

        bi = Book.insert(BID, Bname, BAuthor, BPub )

        if ( bi )

            SendAck("Successful")

        else

```

```

        SendAck("UnSuccessful")
    }
    SendAck("UnSuccessful")
}

```

Delete Book:

```

deleteBook(BID, LID ) {
    lib = Librarian.find(LID)
    If (lib != null){
        bi = Book.remove(BID )
        if ( bi )
            SendAck("UnSuccessful")
        else
            SendAck("UnSuccessful")
    }
    else
        SendAck("UnSuccessful")
}

```

DeleteMember:

```

deleteMember(MID, LID ) {
    If (Member.find(MID) != null && Librarian.find(LID) != null){
        Member.delete(MID)
        SendAck("Successful")
    }
}

```

```
        else  
            SendAck("UnSuccessful")  
    }  
}
```

AddMember:

```
addLibrarian(MID, LID, name, pass, Email ) {  
    lib = Librarian.find(LID)  
    If (lib != null ){  
        Member.insert(MID , Name , Email);  
        SendAck("Successful")  
    }  
    Else  
        SendAck("UnSuccessful")  
}
```