**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(mamberID)

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”)

}

}

**RemoveLibrarian:**

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”)

}