Class Diagram

Librarian

+addBookItem(): bool
+BlockMember(): bool
+unblockMember(): bool

Library

userName: String
address: String

+getAddress(): String

User

-UserNames: String
-UserID: long
-UserEmail: String
-Password: String
-PhoneNumber: String
-dateOfMembership: date
-totalBooksTaken(): int

-getTotalBooksTaken
+setUserID
-getUserEmail
-SetPassword
+UserNames

BookItem

-barcode: string
-borrowed: date
-dueDate:date
-status: String

+bookTaken(): bool
- getStatus(): String

LibraryCard

-cardNumber: long
-issueDate: String
-barcode: String
-active: bool

+isActive(): bool
+getIssueDate(): String

Account

-UserID: int
-password: string
-accountStatus: String
- UserName: string

-resetPassword(): bool
+setPassword(): String
+getUserName(): String

BookReservation

+creationDate: String
+status: String

+getStatus(): String
+getReservationDetails(): String

Catalog

-creationDate: da
-totalBooks: int
-bookTitles: string
-bookSubject: str
-bookAuthor: stri

+updateCatalog():

BookLeading

creationDate: date
dueDate: date
returnDate: date

-getReturnDate(): date
+setCreationDate(): date

Notification

notificationID: int
createdOn: date
content: string

+sendNotification(): bool
+setContent(): String
+getContent(): String
-getCreatedOn(): date

F

creatio
amoun
payme

-initiate
+setAn
+getAn
+getPa

Book
-title: string
-author: string
-type: string
+getTitle(): string
+getType: string

---

ate
g
ring
ng
bool

FineTransation
onDate: date
nt: double
entMethod: String
eTransaction(): double
mount(): double
mount(): double
aymentMethod(): String

Object Diagram

Librarian:StaffMember

+addBookItem= True/False
+BlockMember= True/False
+unblockMember= True/False

Library: NUST

userNames= "Scott Nigel"
address= "New York Ex 33'

BookItem:BookItem

barcode="221Y493A123"
borrowed=11/04/2022
dueDate=25/04/2022
status= "Taken"

LibraryCard:LibraryCard

cardNumber= "210112608"
issueDate= 28/02/2019
barcode= "221Y493A123"
active= True/False

BookReservation:BookReservation

creationDate= 05/04/1993
status= "processing"

Book:The Fault in Our Stars

title= "The Fault in Our Stars"
author= "Peter Stone"
type= "Fiction"

BookLeading:BookLeading

creationDate= 11/03/1990
dueDate= 25/04/2022
returnDate= 28/04/2022

FineTransaction: FineTransaction

craetionDate= 11/04/2022
amount= N$100.00
paymentMethod= "Cash only"

User: Nigel SM

UserNames= "Ujama Ruhepo L "
UserID=
UserEmail= ""
Password= ""
PhoneNumber= ""
dateOfMember=11/04/2020
totalBooksTaken=11412

Account:210112608

userID= "210112608"
password= "Pa$$word"
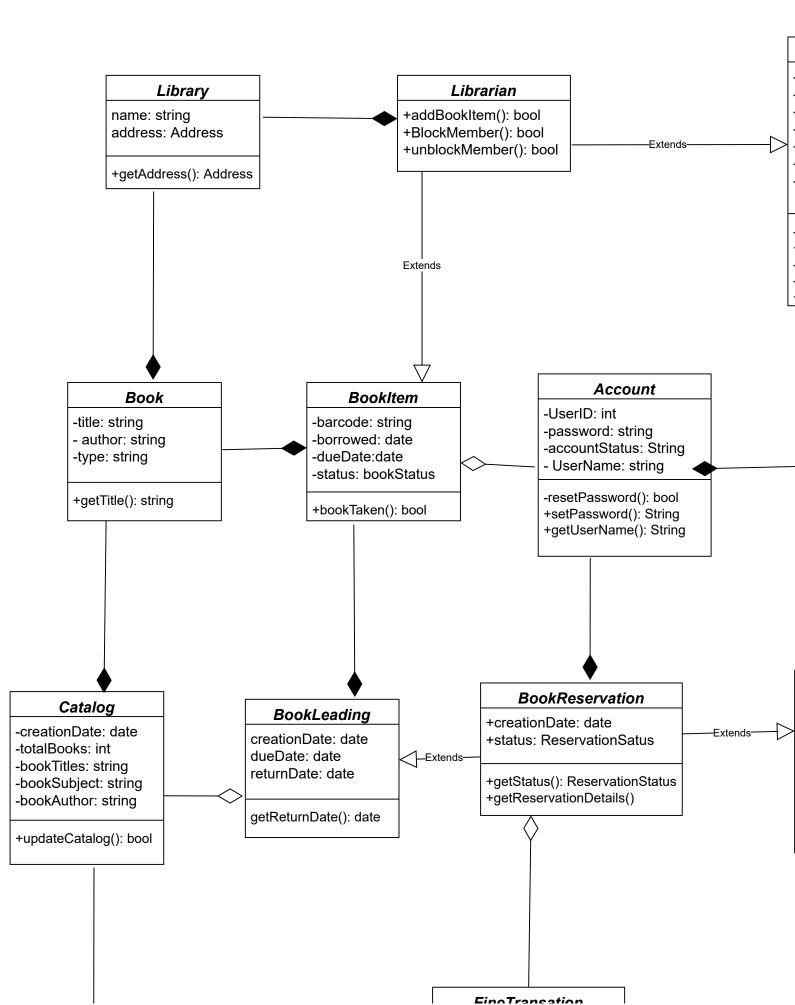status= "Active"
UserNames= "Ujama Ruhepo L"

Catalog:Catalog

creationDate=11/03/1990
totalBooks=5 000000
bookSubject="Science Fiction"
bookAuthor="Peter Stone"

Notification:Notification

notificationID= 40911
createdOn= 11/04/2022
content= "return bookItem to the library"
email= 220116699@students.nust.na
textmessage= "Good day you are reminded to retur
the item or collect the item."

UML Diagram

Library
name: string
address: Address

+getAddress(): Address

Librarian
+addBookItem(): bool
+BlockMember(): bool
+unblockMember(): bool

Extends

Extends

Book
-title: string
- author: string
-type: string

+getTitle(): string

BookItem
-barcode: string
-borrowed: date
-dueDate:date
-status: bookStatus

+bookTaken(): bool

Account
-UserID: int
-password: string
-accountStatus: String
- UserName: string

-resetPassword(): bool
+setPassword(): String
+getUserName(): String

Catalog
-creationDate: date
-totalBooks: int
-bookTitles: string
-bookSubject: string
-bookAuthor: string

+updateCatalog(): bool

BookLeading
creationDate: date
dueDate: date
returnDate: date

getReturnDate(): date

BookReservation
+creationDate: date
+status: ReservationSatus

+getStatus(): ReservationStatus
+getReservationDetails()

Extends

Extends

FineTransation

User

-UserNames: String
-UserID: long
-UserEmail: String
-Password: String
-PhoneNumber: String
-dateOfMembership: date
-totalBooksTaken(): int

-getTotalBooksTaken
+setUserID
-getUserEmail
-SetPassword
+UserNames

:LibraryCard

-cardNumber: string
-issueDate: date
-barcode string
-active: bool

isActive(): bool

Notification

notificationID: int
createdOn: date
content: string

+sendNotification(): bool
+setContent(): String
+getContent(): String
-getCreatedOn(): date

FineTransaction

creationDate: date
amount: double
paymentMethod: String

-initiateTransaction(): double
+setAmount(): double
+getAmount(): double
+getPaymentMethod(): String