IT351:- Human Computer Interaction

End Semester Examination 2020-2021

Name: Chinmayi C. Ramakrishna

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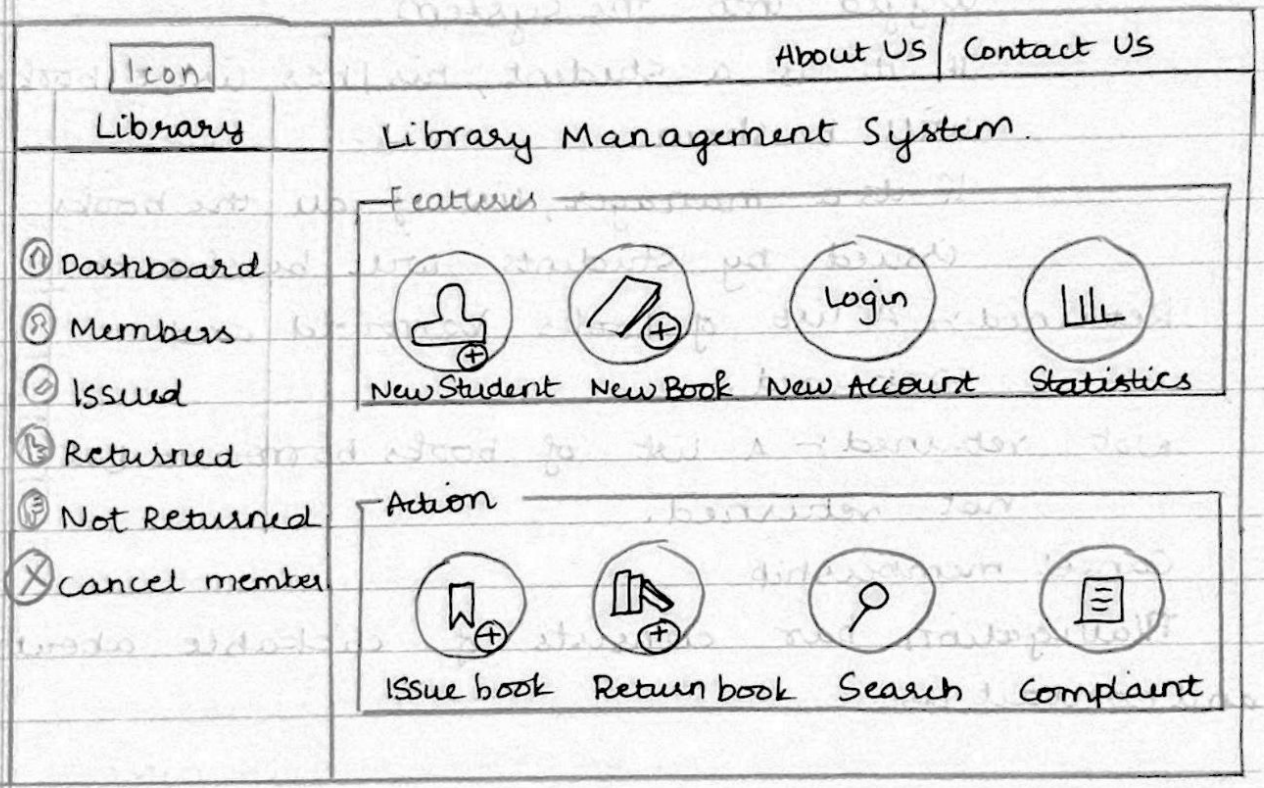
Q.1.



(a) GUI elements

→ A menu bar

→ A navigation bar

→ Icons for features

→ Icons for Actions

Menu bar consists of the following:

1.

Vertical menu to add depth.
consists of
Dashboard :- a user's account (home page)
Members :- a list of users in the library management system
Issued :- a list of books issued.
The list changes depending on who has logged into the system.
If it is a student, his/her list of books will be show
If its a manager, list of all the books issued by students will be shown.
Returned :- A list of books borrowed and returned.
Not returned :- A list of books borrowed but not returned.
Cancel membership
Navigation bar consists of clickable about and contact us.

Features are highlighted with the use of icons. Its easy to interpret and understand.

Actions
Issue book consists of a plus sign which means a new book is added to the list.
Similarly, the other icons are self explanatory.

(b) The new design consists of a speech recognition system and gesture control system.

In the beginning, the user interface asks the user to grant a set of permissions through speech.

A speech system asks if speech recognition system is required or not. This can help the blind users.

Features

Everything is read out.

Based on the keyword spoken, a voice recognition system performs tasks for the user.

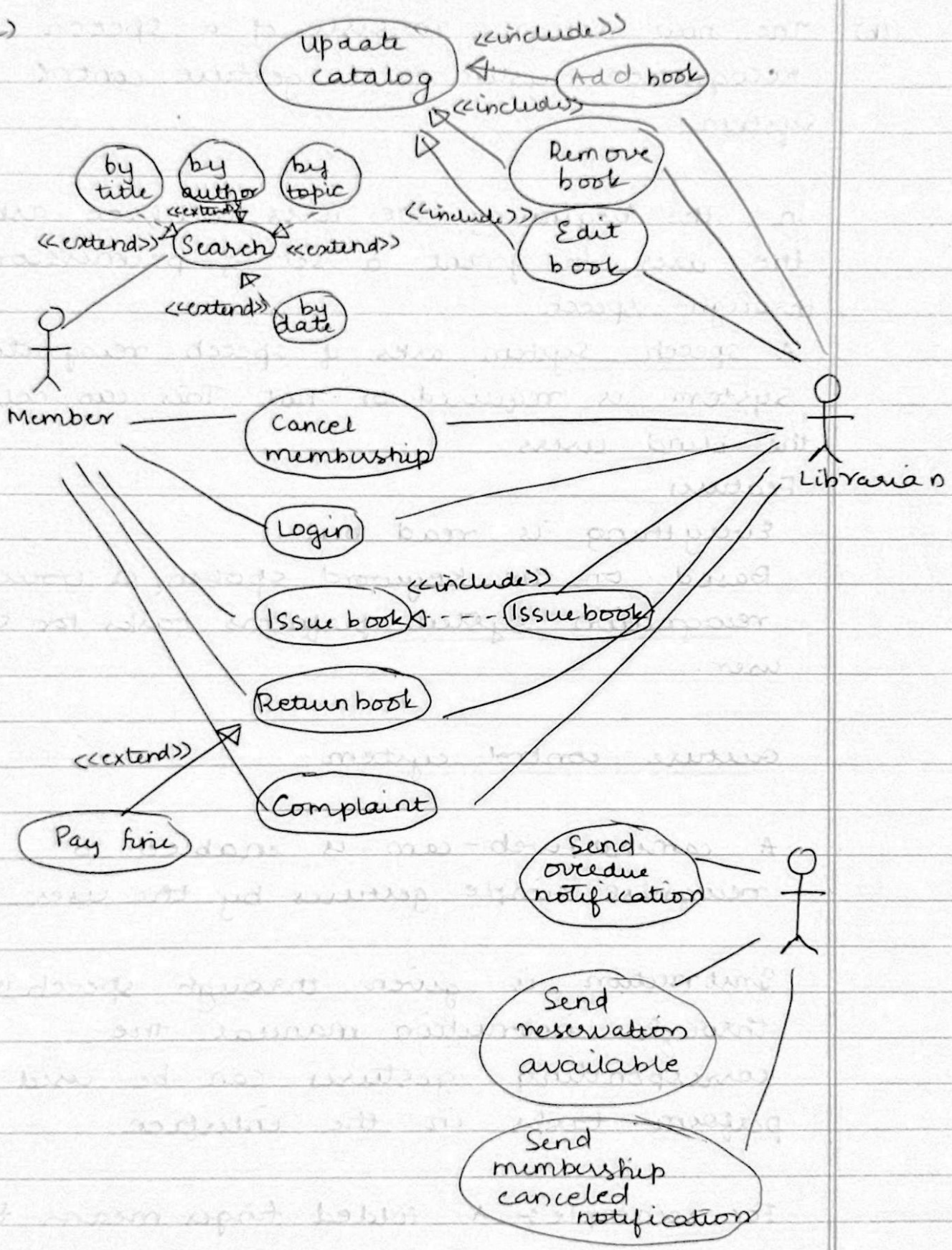
Gesture control system

A camera / web-cam is enabled to recognise simple gestures by the user.

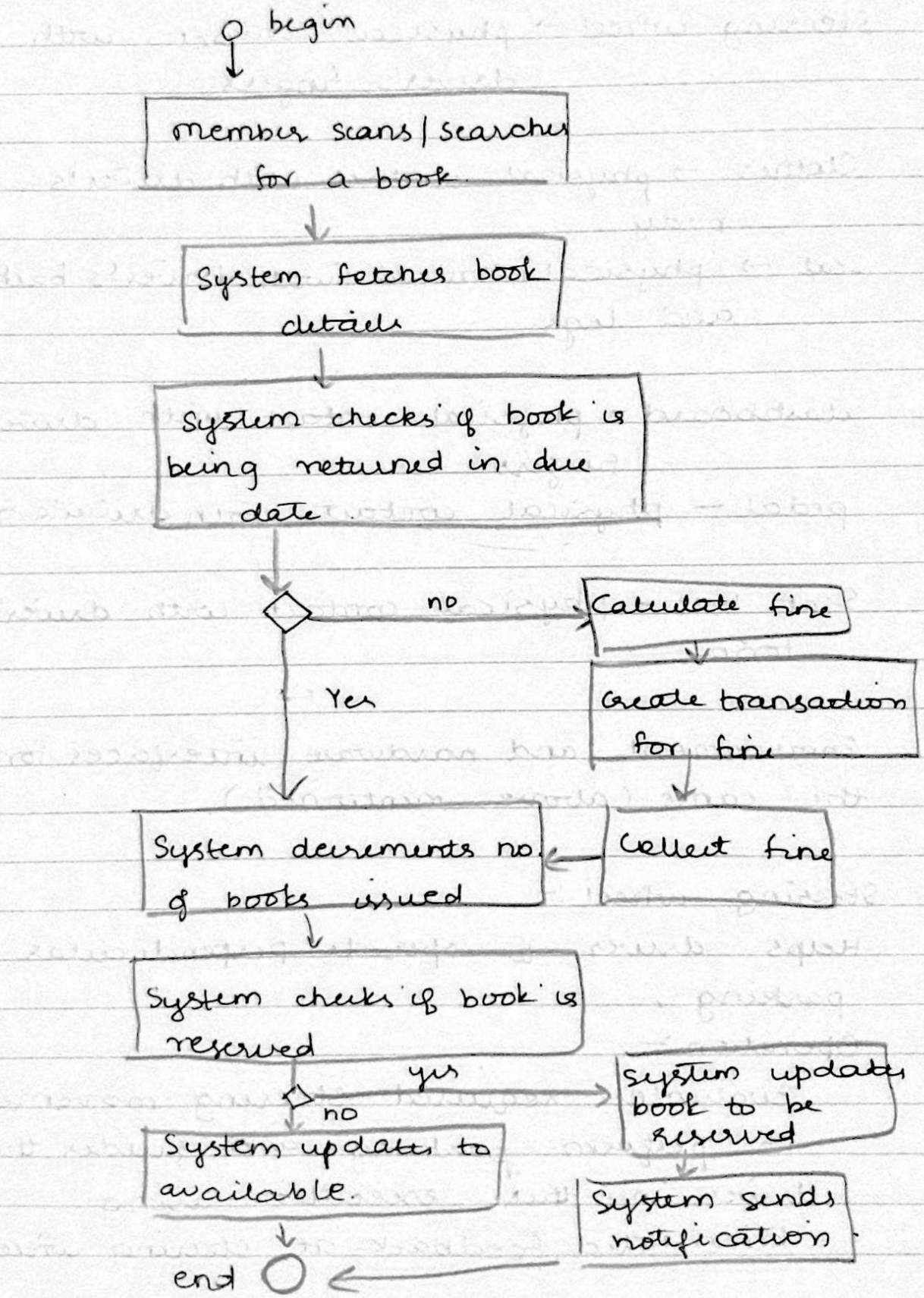
Instruction is given through speech or through instruction manual. The corresponding gestures can be used to perform tasks in the interface.

For example:- A folded finger means tap.

(c)


Update catalog
<<include>>
Add book
<<include>>
Remove book
<<include>>
Edit book
by title
by author
by topic
<<extend>>
<<extend>>
<<extend>>
Search
<<extend>>
by date
Member
Cancel membership
Librarian
Login
<<include>>
Issue book
Issue book
Return book
<<extend>>
Pay fine
Complaint
Send overdue notification
Send reservation available
Send membership canceled notification

Return a book



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Q.2 18IT113

Feedbacks.

Steering wheel → physical contact with driver's fingers.

Clothes → physical contact with driver's body.

Seat → physical contact with driver's back and legs.

dashboard - physical contact with driver's fingers.

pedal - physical contact with driver's foot.

Seat belt - physical contact with driver's torso.

Environment and hardware interfaces for the same (above mentioned).

Steering wheel :-

Helps driver to operate perpendicular parking.

Operation :-

Evaluates required steering movements to perform parking and guides the driver in their execution using kinesthetic feedback at steering wheel.

Navigation :-

using a waist belt to convey directions This enables tactile stimulations all around the driver.

A wearable belt :- 8 tactors located around the belly to indicate directions

Warning Systems :-

Can be categorised under haptic warning systems.

Collision prevention.

A combination of tactors located on the hands and around the wrist can be used (tactile warning).

Lane Departure.

Tactile feedback located on the steering wheel could be effective to warn drivers of lane departures.
Drivers' vibrotactile feedback was intuitive as their vehicle was deviating, drivers can feel ~~they~~ felt vibrations

Speed control.

Controlling reaction force of accelerator pedal.

In a nutshell, tactile and kinesthetic feedback can be used at ~~sep~~ different parts of contact between driver and car to enable haptic stimulation.