CS233

TEAM NO: 15

PROJECT NO: 1

VISUALLY AIDED READING

"AReader"

COGNITIVE WALKTHROUGH DOCUMENT

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1.0 Pre-Preparation

1.1 User Categories :

Users can be divided into 3 main categories depending on their Android Experience Level who are interested in learning through visually aided reading app.

User's Knowledge	User Category
Has an experience of using many mobile apps	Expert
Has an experience of using few mobile apps	Intermediate
Has just started using mobile apps	Novice

Tasks for Evaluation :

1. Text Recognition
2. Augment representation of the noun word

1.2 IDEAL ACTION SEQUENCES OF TASKS

1.2.1 Text Recognition.
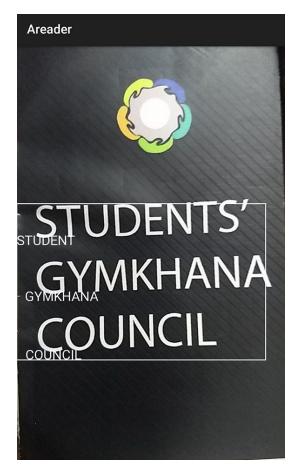A1: Activate the app interface by pressing the app icon.
R1: Launch the app and display the home screen.

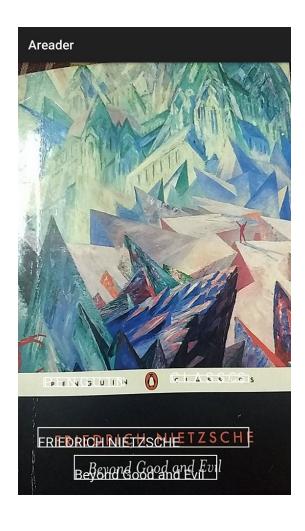A2: Focus your camera on the textual area.
R2: Displays the text on the screen.

TASK 1 : Screenshots

  1. Text Recognition

2. Text Extraction from the camera
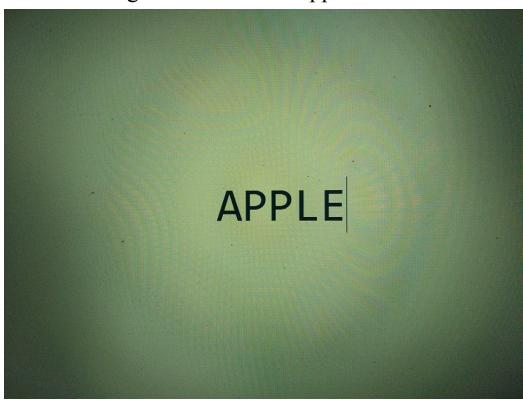
FRIEDRICH NIETZSCHE

Beyond Good and Evil

1.2.2 Augmented representation of the noun word

Action Sequence :

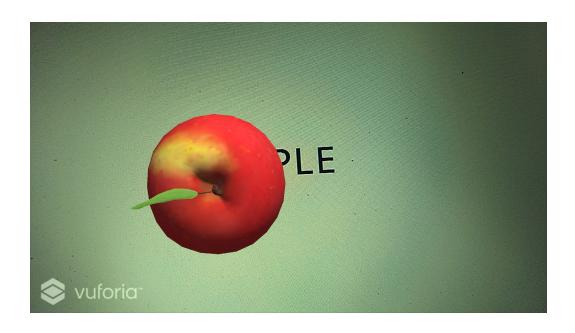1. Select a specific word from the text appearing on the screen.
2. Loads 3D augmented representation of the selected word from local database.
3. Displays 3D augmented representation of the word.
4. User can select multiple word to view its 3D representation.

TASK 2 : Screenshots

1. Selecting a Noun Word "Apple"

2. 3D Augmented Representation of the word "Apple"

3. 3D Augmented Representation of the word "Banana"

2.0 QUESTIONNAIRE AND THEIR JUSTIFICATION

Following 5 questions were asked in the questionnaire.

Q1) Did the user try to achieve the end goal or did he/she give up at the start itself?

Q2) Did the user notice that the correct action choices are available or not? Yes-Partly-No

Q3) Did the user confidently know that the choice made by him/her is the right one? Yes-No

Q4) Did the user understand the feedback after every action? Yes-No

 Q5) Did the user complete the task with satisfaction? Yes-Partly-No

The questions asked in the interview are exhaustive:

- The user may either give up in beginning/middle or jump directly to the end goal (covered in Question 1).
- If the user continues, then he/she may or may not ignore the availability of correct action choices (covered in Question 2)
- If the user notices the correct action, he/she may or may not be completely confident about taking the action (covered in Question 3)
- If the user takes that action, he/she would receive a feedback for the action taken, which he/she may or may not understand (covered in Question 4)
- If the user understands the feedback, he/she may or may not complete the task with satisfaction (covered in Question 5)

Since these questions cover all the possible situations that a user may go through while executing the system, they are exhaustive.

The Tasks are representative:

The set of all functionalities supported by the system are Text Recognition - scanning of the text using phone camera (Task 1) , selecting a word and viewing 3D augmented representation of the selected word (Task 2).

Since these tasks are assigned to each of these functionalities, the tasks are representative of the functionalities of the system.

3.0 Reports by Team Members :

All the tasks were given to a team of 3 members who are the students of IIT Guwahati. They have performed the usability testing and reported the following. They have submitted the individual reports which are very discrete , so we have taken aggregate of their report values and the final reports are as follows.

The team members names and roll no. are as follows :
1. Tushara Langulya   160101019
2. Sai Durga Myneni   160101045
3. Anurag Kakustam   160101037

TASK 1 : Text Recognition - Scanning the camera over the text

Description of Task	Did the user try to achieve the end goal or did he give up at the start itself?	Did the user notice that the correct action choices are available?	Did the user confidently know that the choice being made by him/her is the right one?	Did the user understand the feedback after every action?	Did the user Complete the Task with satisfaction?	Remarks
Novice	Yes	Yes	No	No	Yes	Average
Intermediate	Yes	Yes	Yes	No	Yes	Good
Expert	Yes	Yes	Yes	Yes	Yes	Good

Analysis and Inference :

Action in Sequence	System mismatch Question	Potential problem and design solution	% Mismatch to ideal situation (qualitative estimation)
A1 : Activate the app interface by pressing the app icon	Is it clear to the user that system has taken input	Was very confident about starting the app	5-10%
	Can the user resume control for the next action	Almost confidently	
	Are the systems response visible & interpretable	System being user friendly responses are pretty clear	
	Is the end of the system action Clear	Yes	

A2 : Focus your camera on the textual area.	Is it clear to the user that system has taken input	Yes	15-20%
	Can the user resume control for the next action	Yes	
	Are the systems response visible & interpretable	Little tough for the novice to understand	
	Is the end of the system action Clear	Yes	

TASK 2 : Augment representation of the noun word - User selects a noun word from the screen and views its 3D augmented representation.

Description of Task	Did the user try to achieve the end goal or did he give up at the start itself?	Did the user notice that the correct action choices are available?	Did the user confidently know that the choice being made by him/her is the right one?	Did the user understand the feedback after every action?	Did the user Complete the Task with satisfaction?	Remarks
Novice	Yes	Yes	No	Yes	Yes	Good
Intermediate	Yes	Yes	Yes	Yes	Yes	Good
Expert	Yes	Yes	Yes	Yes	Yes	Good

Analysis and Inference :

Action in Sequence	System mismatch Question	Potential problem and design solution	% Mismatch to ideal situation (qualitative estimation)
A1 :Select a specific word from the text appearing on the screen.	Is it clear to the user that system has taken input	Partly, novice has trouble using touch interface	20-25%
	Can the user resume control for the next action	No, user has to wait for the system to respond	
	Are the systems response visible & interpretable	Partly, user may select a non-noun word for which interpretation is not possible	
	Is the end of the system action Clear	Yes	

A2 : Loads 3D augmented representation of the selected word from local database.	Is it clear to the user that system has taken input	Yes	5-10%
	Can the user resume control for the next action	Yes	
	Are the systems response visible & interpretable	Yes	
	Is the end of the system action Clear	Partly	

A3 : Displays 3D augmented representation of the word.	Is it clear to the user that system has taken input	Yes	1-5%
	Can the user resume control for the next action	Yes	
	Are the systems response visible & interpretable	Yes	
	Is the end of the system action Clear	Yes	

A4 : User can select multiple word to view its 3D representation.	Is it clear to the user that system has taken input	Yes	10-15%
	Can the user resume control for the next action	Yes, but has to wait for the system to respond	
	Are the systems response visible & interpretable	Partly, app may take time to load graphics.	
	Is the end of the system action Clear	Yes	

4.0 Report and Conclusion

After compilation of all the Analysis and Inference reports from all the team members following conclusions were made:-

1) Selection of noun words should be improved here. The noun words should appear as an overlay button so as to distinguish it from other words appearing on the screen.
2) Novice and Intermediate Users are having trouble with orientation and handling of camera over the text.
3) The app takes too much of time to display augmented representation of the noun word.
4) Touch interface should be improved to be more user-friendly.
5) Sounds must be included in the app to make it more enjoyable.
6) The app should be improved by having a more attractive UI interface.
7) The app can improve by showing the definitions of selected words if they are non-noun.