

Human Computer Interaction

Sentiment Analysis of Voice

111708035

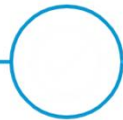
ROADMAP

CryptoVoice Road Map



IDENTIFY NEED

- Satisfaction of consumer
- Product Quality



ANALYZE USER

- User centered Industries
- Product Based Companies



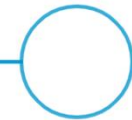
TARGET INDUSTRY

- Automobile
- Banking
- IT & ITES
- Online Shopping



TECHNOLOGY

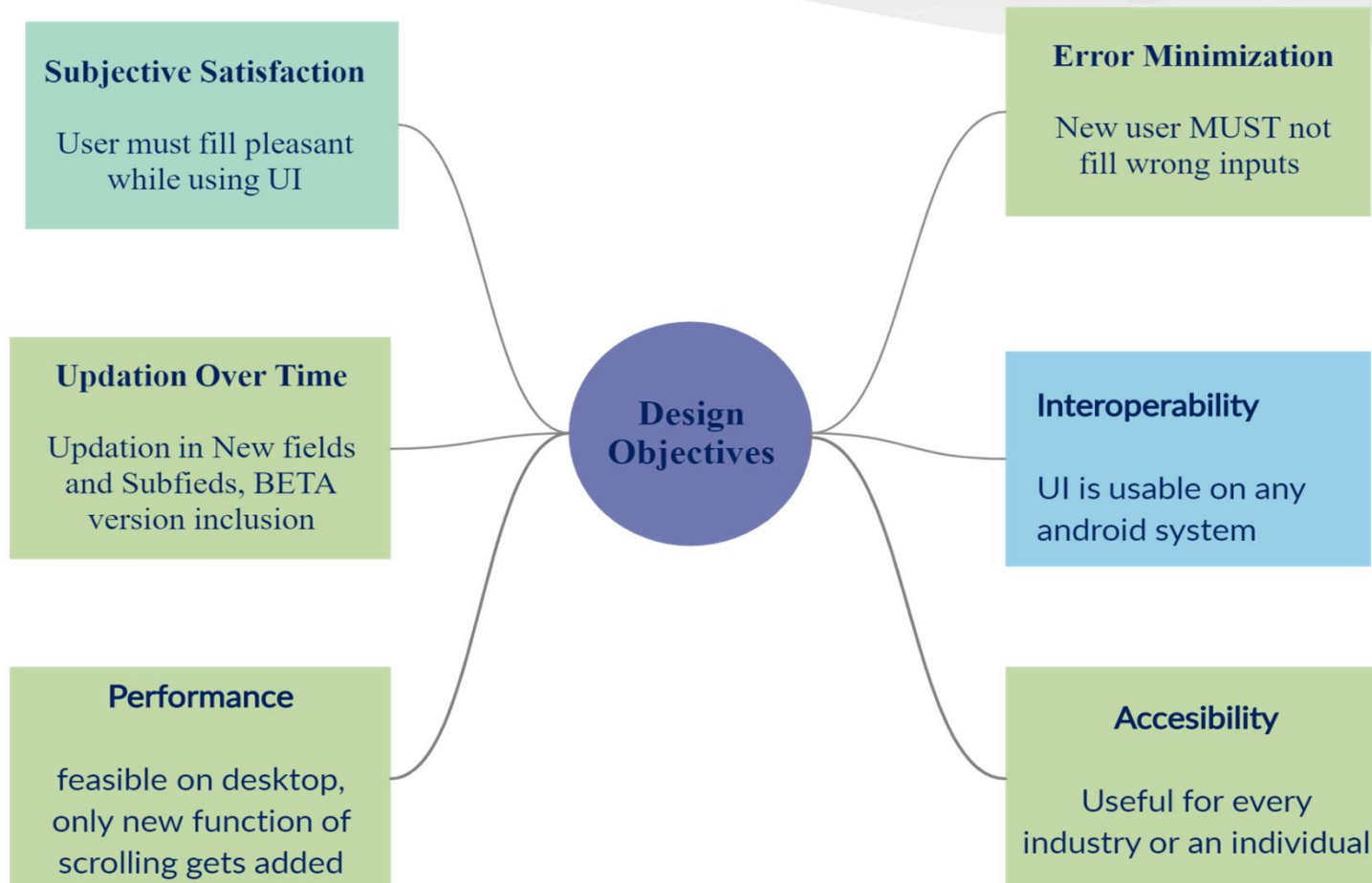
- Deep Learning
- Natural Language Processing



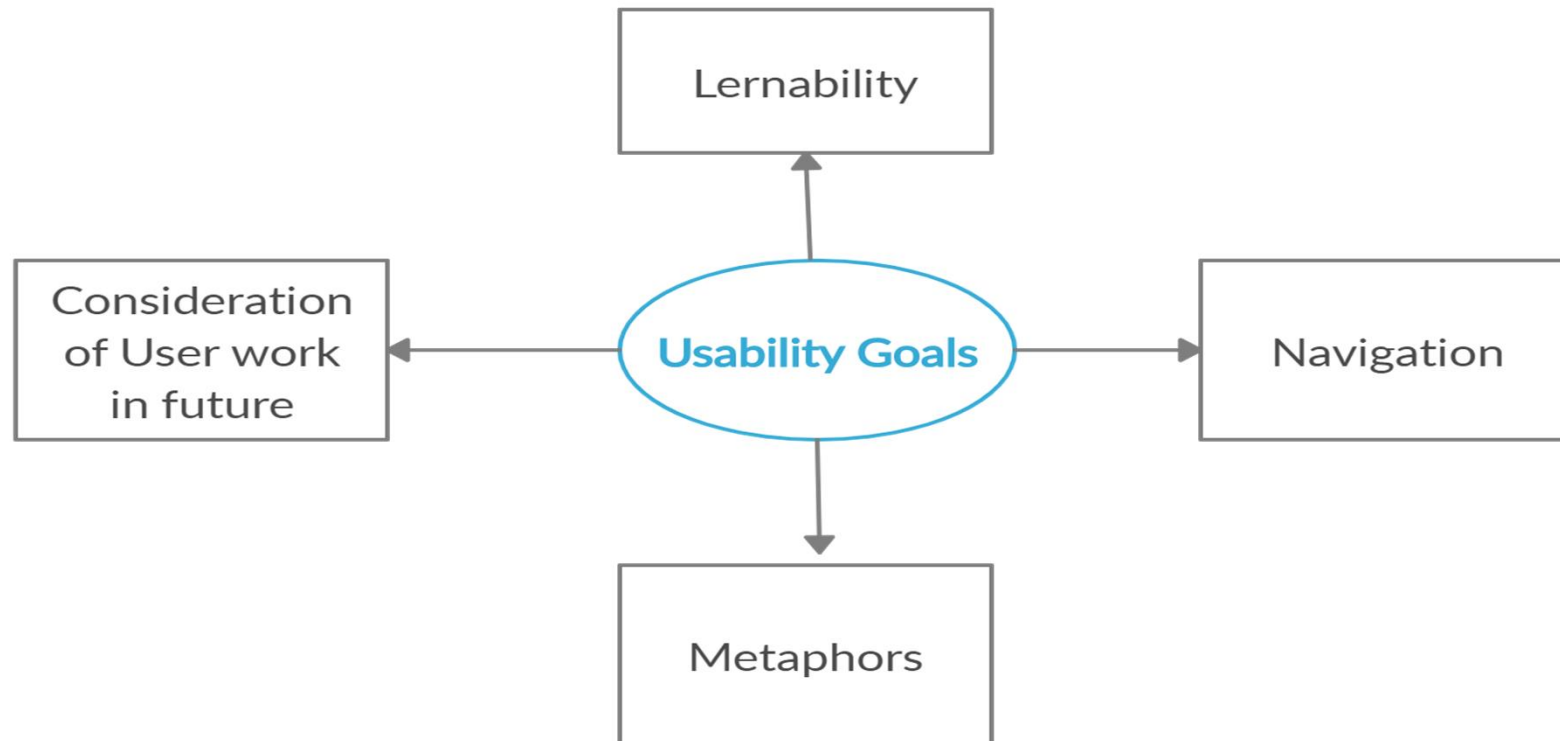
REPORT

- Product Evaluation Using Audio
- Consumer Experience
- Scores by cryptovoice

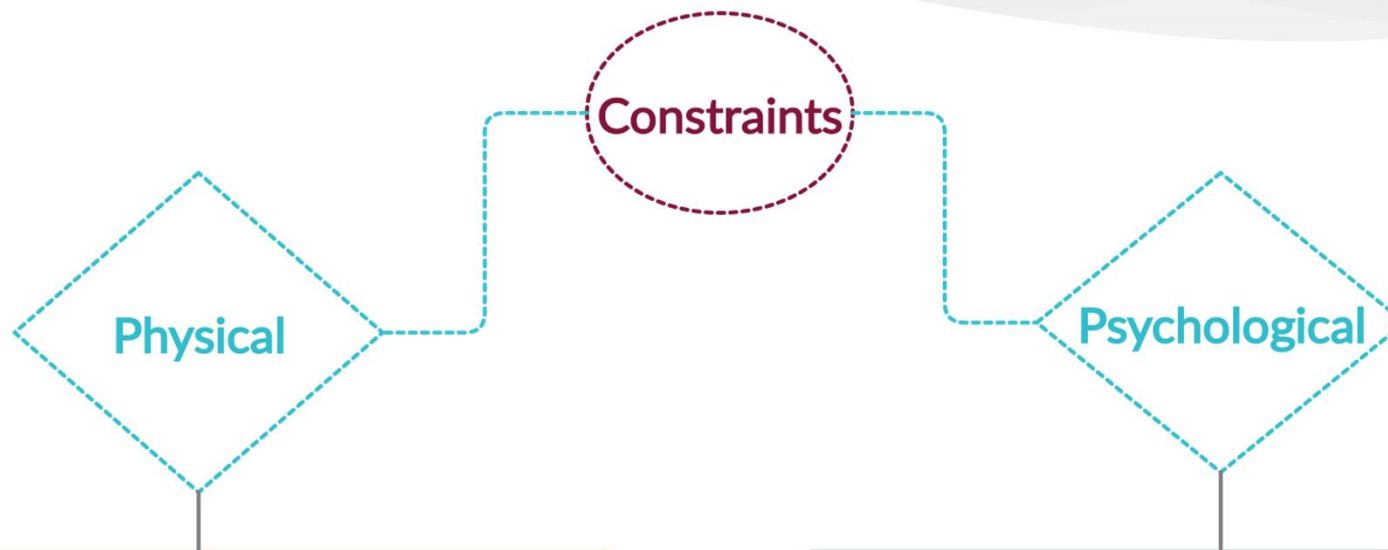
Design Objectives



Usability Goals



Constraints



1. Paths for downloading reports
2. Report loading page
3. input file from music/audio folder

1. Reliability on use of microphone
2. Use of symbols
3. Use of radio buttons, select button, drop down button

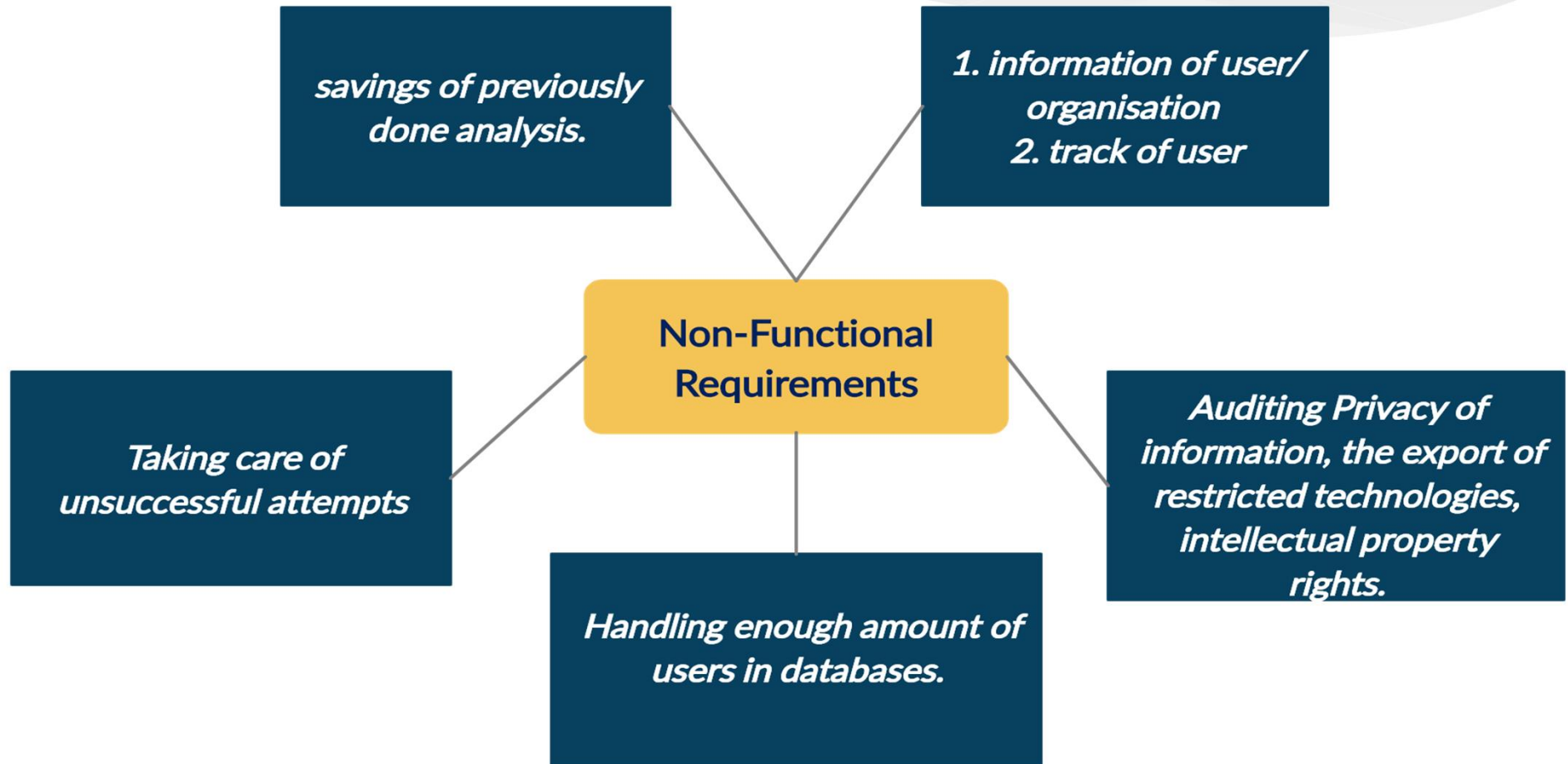
User Analysis

USER ROLE	TASKS
<ul style="list-style-type: none">• Single User• Organisation	<ol style="list-style-type: none">1. Signup / Login2. Selecting an Industry of User3. Selecting Subfields in an Industry4. Inserting Input File/ audio from microphone5. Choosing Proper Parameters6. Report Downloading

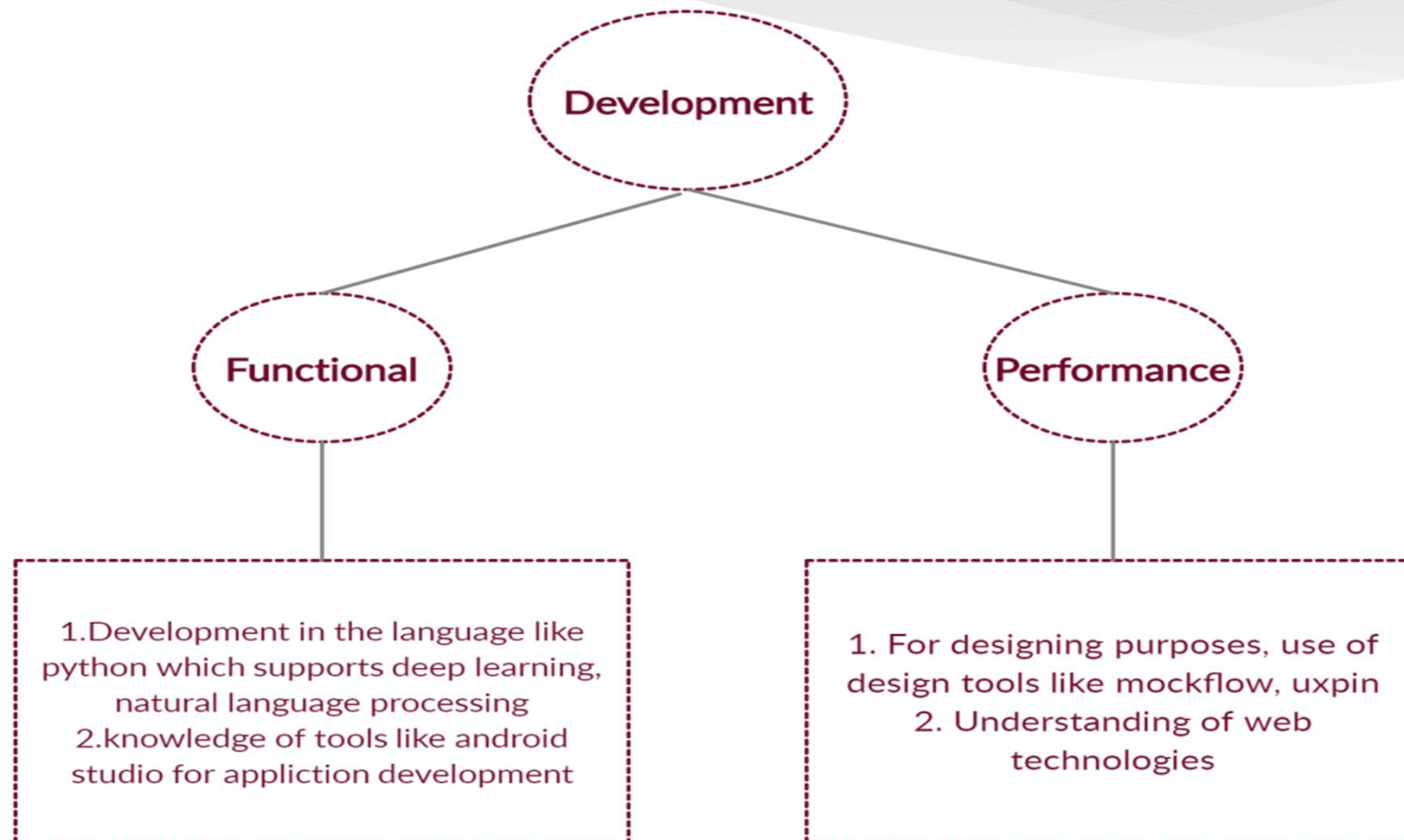
Tasks Analysis (Functional)

Task	Object	Action	Interface Provided
1.	User Registration / Verification	Email, password, name, Capcha, Facebook login, Google login	Form Filling
2.	Industry	Selecting out of online shopping, banking, IT & ITES, Automobiles	Menu Selection
3.	Sub-industries	Selecting subfields	Menu Selection
4.	Audio which is to be analysed	Audio File Microphone Voice	<ul style="list-style-type: none">• Browsing• Microphone
5.	Parameters of analysis	Number of users, language, punctuation	Form Filling
6.	Report	Download	Download Button

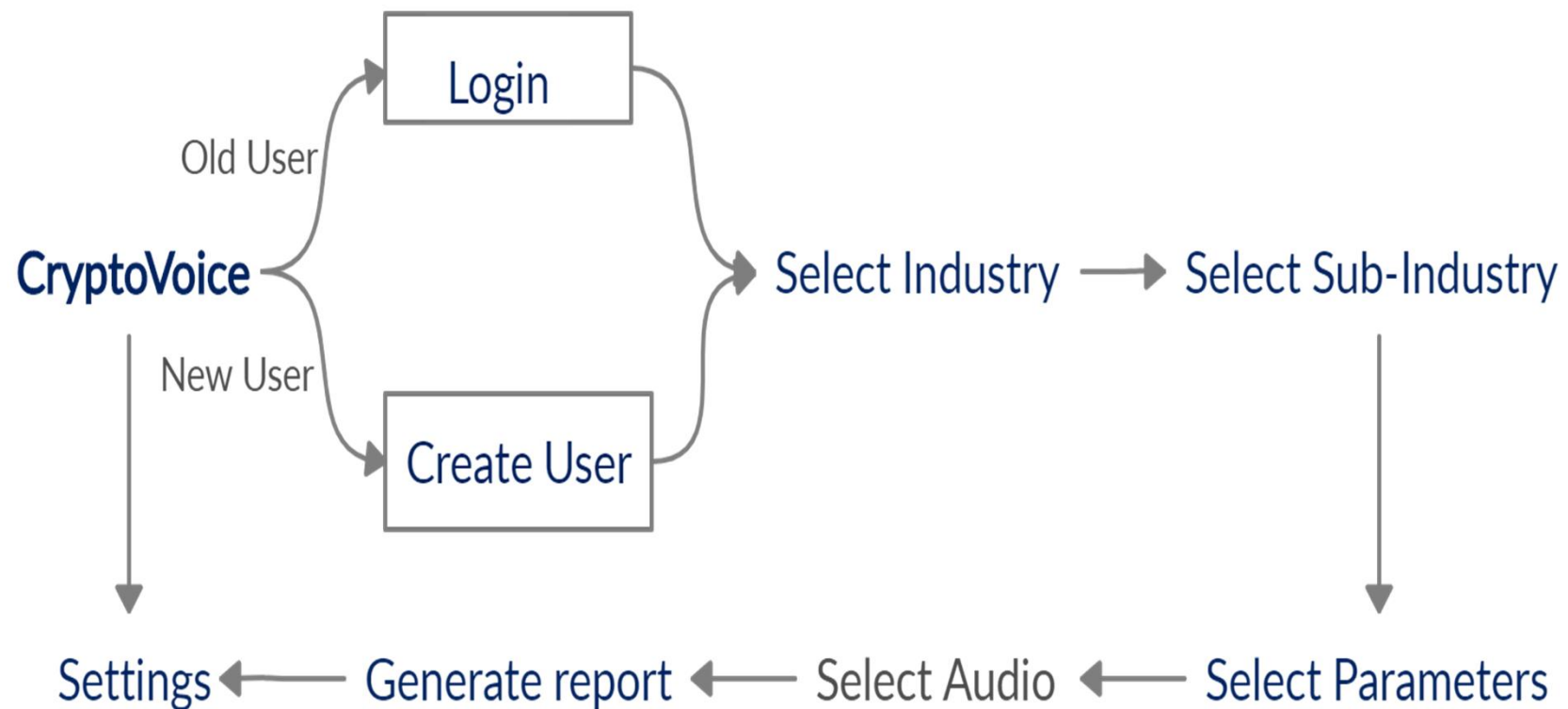
Tasks Analysis (Non-Functional)



Development Requirements



Conceptual Design



Informal Usability Testing

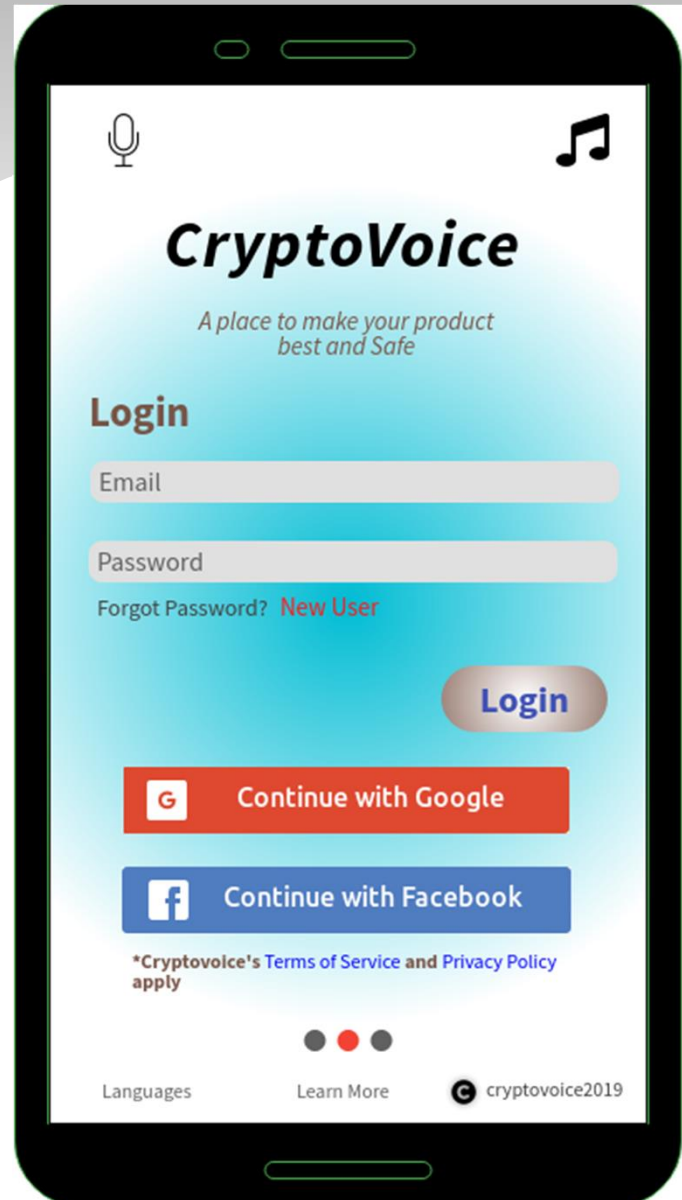
Interfaces On which test was taken	Discussed Points	Score out of 10
Login , Signup	<ol style="list-style-type: none">1. Good use of symbols2. Need of Capcha3. Need of Terms and conditions	8/10
Industry and Sub-Industry Selection	<ol style="list-style-type: none">1. Good use of pictures.2. Need of buttons for Navigation.3. Consistent Setting symbol	9/10
Input to Analyser	<ol style="list-style-type: none">1. Good impact of beta version inclusion2. Use of dropdown works as guide to user	10/10
Settings Page	<ol style="list-style-type: none">1. Need of update photo2. Good implementation of adding more users3. Help and FAQ	9/10

Invigilator Information: Tushar Bhosale (21), COEP

Medium Fidelity Design

- Wireframe design (with all functionality)
- Interface Design style guide used / create
- Analysis of User Action:
 - i. GOMS
 - ii. KLM

Login Page



- Login page for old user
- If user is new, New User text button directs it to create user UI
- Google, Facebook button to login.
- Privacy policy and Terms of service to instruct user about use of Application.

GOMS Analysis

Goals	Sub Goals	Methods	Operators
To sign in as old user	Submitting Correct Information	Using Password and email id	<ol style="list-style-type: none">1. Click on email id and type Your email2. Click on password and type your password3. Click login
		Using facebook or google login	<ol style="list-style-type: none">1. Click on Continue with google or continue with facebook2. Fill your account credentials there

KLM Analysis

Method	Action Sequence	KLM operators	Operator Time	Total time for method
Using Password and email id	Click on email id and type Your email	MFCT(@)	$1.35 + 0.23 + 7.0 + 0.2$	14.58
	Click on password and type your password	MFCT(P)	$2.24 + 0.23 + 0.2 + 1.35$	
	Click login	MFC	$1.35 + 0.23 + 0.2$	

Create User

Create User



First Name


Last Name

Email

Password * must contain at least 8 characters

Select User

☐ Individual  ☐ Corporation 

☐ I'm not a robot 
reCAPTCHA
Privacy - Terms

Let's Get Started

- General form filling to create new user in the system if user doesn't exist
- Capcha checks if the user is human
- Images to identify the meaning of individual or corporation user

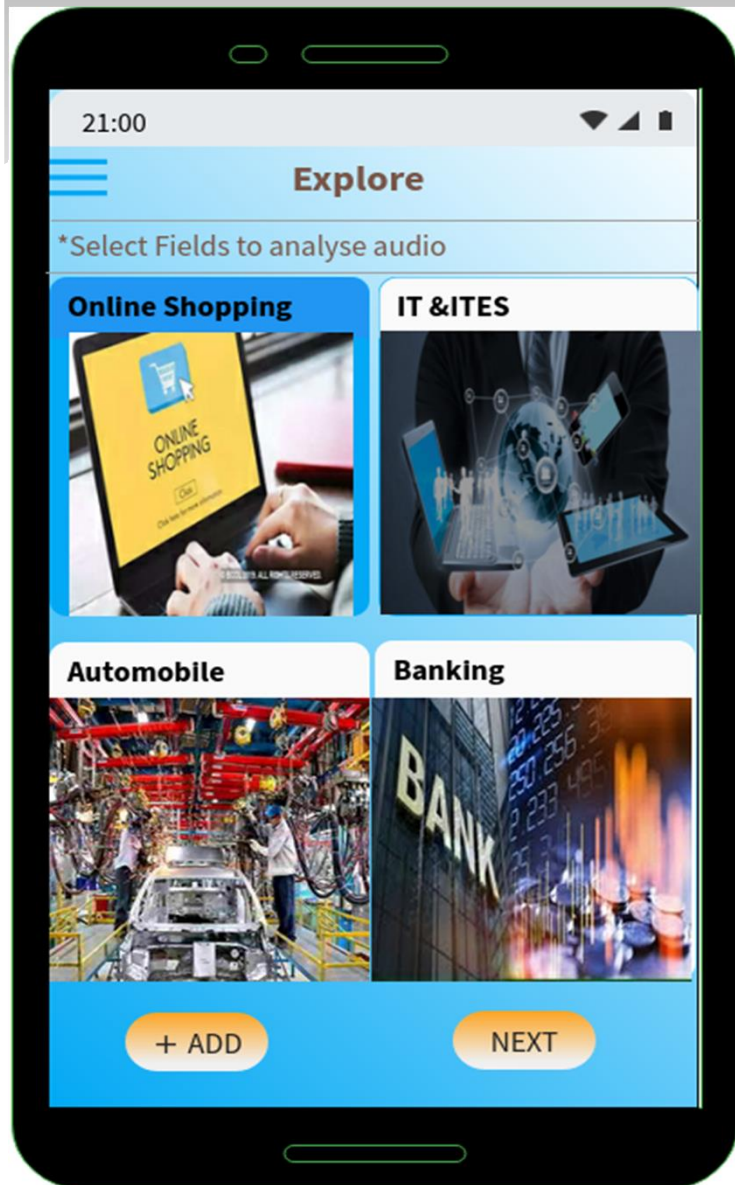
GOMS Analysis

Goals	Methods	Operators
To create new user in cryptovoice	Using own credentials	<ol style="list-style-type: none">1. Click first name and type your first name2. Click last name and type your last name3. Click Email id and type your email id4. Click password and type your password5. Select type , verify yourself using Capcha6. Click let get's started

KLM Analysis

Method	Action Sequence	KLM operators	Operator Time	Total time for method
To create new user in cryptovoice	Click first name and type your first name	MFCT	$1.35 + 0.23 + 0.2 + 2.32$	26.34
	Click last name and type your last name	MFCT	$1.35 + 0.23 + 0.2 + 2.32$	
	Click Email id and type your email id	MFCT(@)	$1.35 + 0.23 + 0.2 + 7$	
	Click password and type your password	MFCT(P)	$1.35 + 0.2 + 0.2 + 3 + 2.24$	
	Select type , verify yourself using Capcha	MFCMFC	$1.35 + 1.35 + 0.2 + 3 + 0.23 + 0.2 + 0.2$	
	Click let get's started	MFC	$1.35 + 0.2 + 0.2 + 3$	

Fields



- User one must understand that clicking on image selects an industry.
- Next button directs it to Sub Industries.
- Add button can add to number of industries.

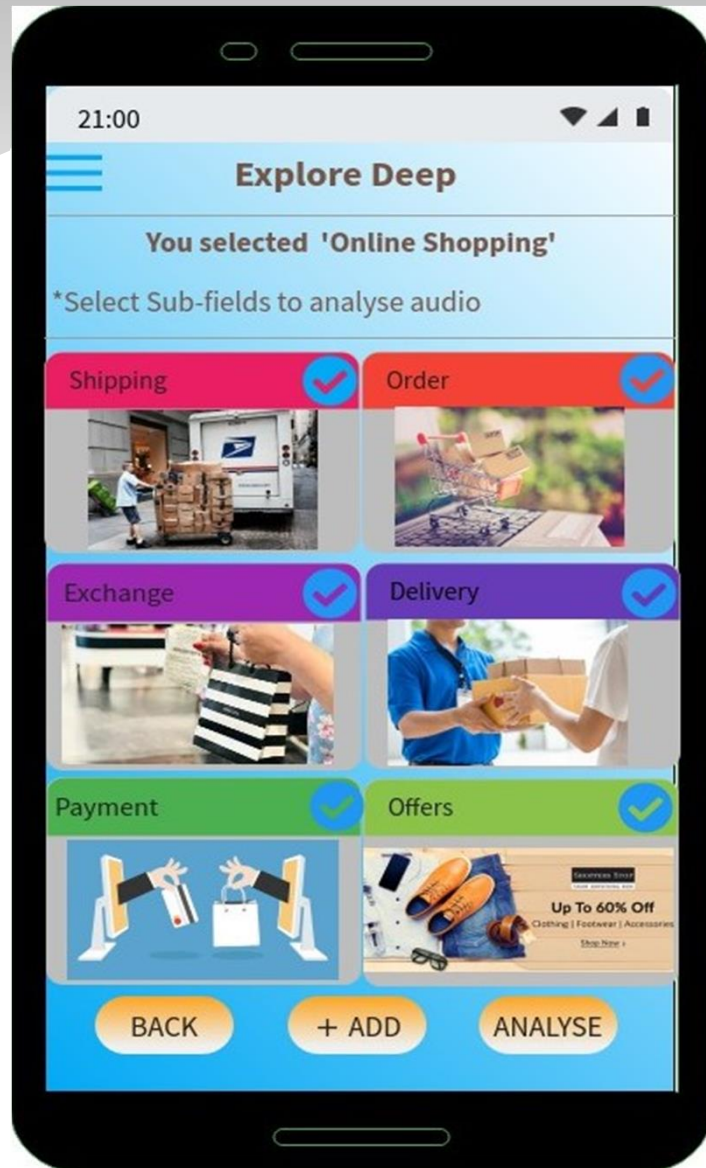
GOMS Analysis

Goals	Sub Goals	Methods	Operators
Selecting Fields form given fields	Select from the given fields	By selecting any field	<ol style="list-style-type: none">1. Click on any one from above given fields2. Click next
	Add new field	Using Add Button	<ol style="list-style-type: none">1. Click on Add Button2. Add field Name

KLM Analysis

Method	Action Sequence	KLM operators	Operator Time	Total time for method
Selecting Fields form given fields	Click on any one from above given fields	MFC	$1.35+0.23+0.2$	3.56
	Click next	MFC	$1.35+0.23+0.2$	

Subfields



- After selection of Industry, one must click on correct button
- If industry chosen is wrong there is back button to go on Industry Page
- Add button will add to Sub fields

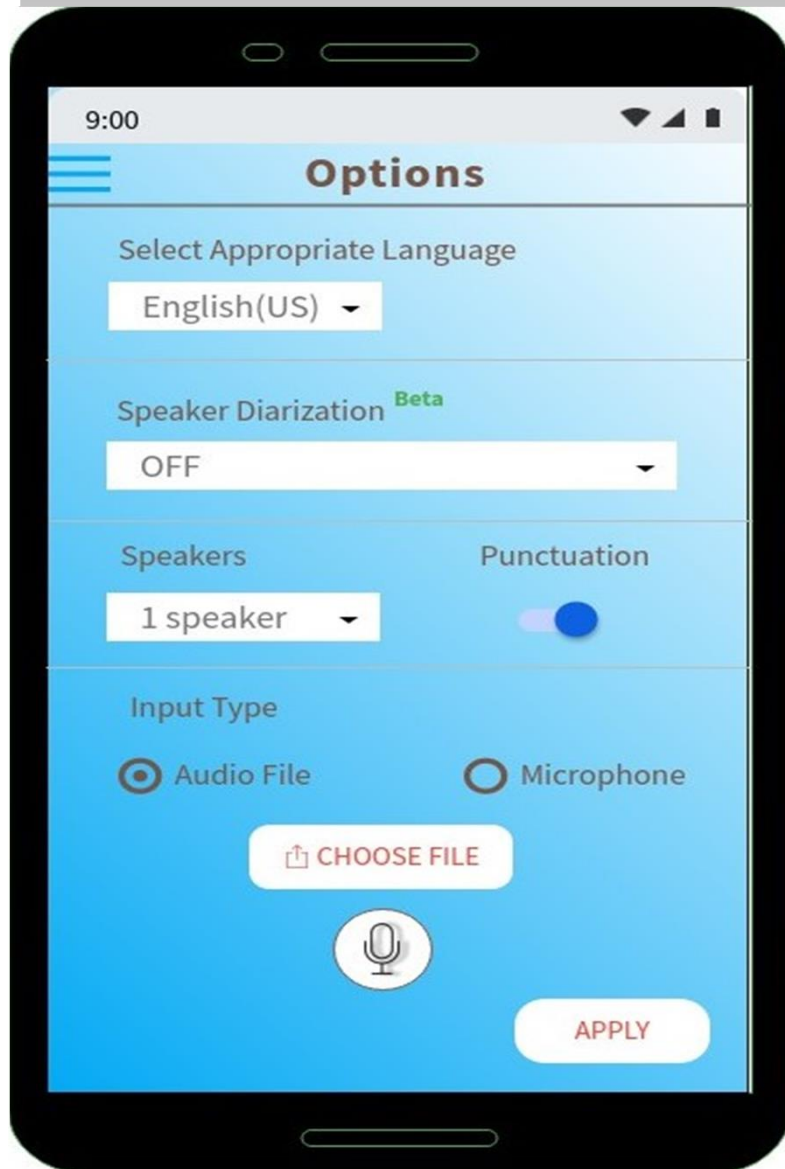
GOMS Analysis

Goals	Sub Goals	Methods	Operators
Selecting Sub Fields form given Sub fields	Select from the given fields	By selecting any Sub field	<ol style="list-style-type: none">1. Click on any one from above given sub fields2. Click next
	Add new field	Using Add Button	<ol style="list-style-type: none">1. Click on Add Button2. Add sub field Name

KLM Analysis

Method	Action Sequence	KLM operators	Operator Time	Total time for method
Selecting Sub Fields form given Sub fields	Click on any one from above given sub fields	MPC	$1.35+0.2+0.23$	3.56
	Click next	MPC	$1.35+0.23+0.2$	

Inputs to Analyser



- English and Hindi are the languages in dropdown button
- Mixture of channels in speaker Diarization
- Number of Speakers up to 5
- Punctuation on off button
- Input type must be selected from
 - I. Audio file
 - II. Microphone

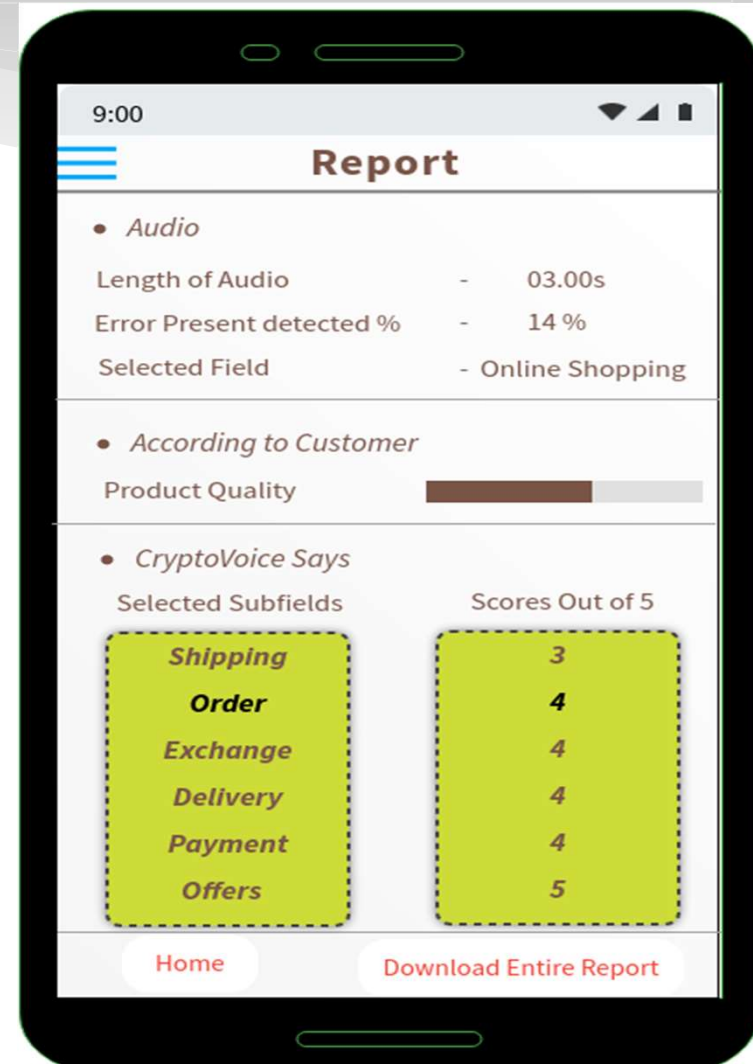
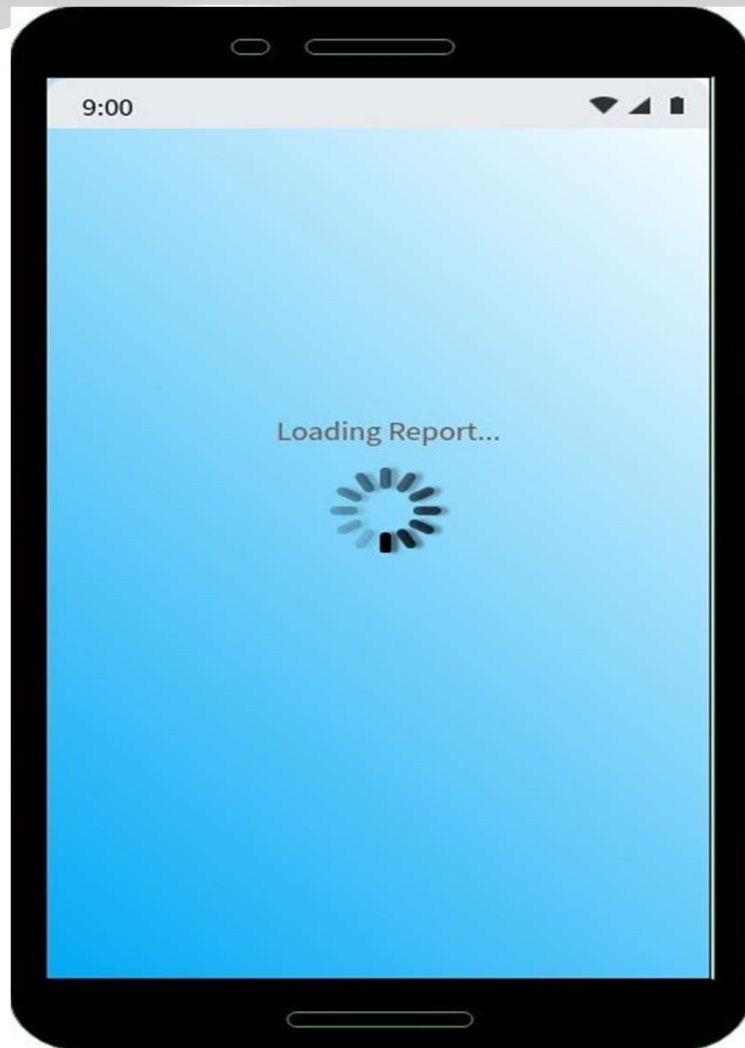
GOMS Analysis

Goals	Methods	Operators
Give Input Audio to Analyse the product	Using Audio file as input	<ol style="list-style-type: none">1. Click language button select language2. Click diariization to select channel3. Select No of speakers4. Select Punctuation5. Click on choose file button
	Using micro-phonetic audio as input	<ol style="list-style-type: none">1. Click language button select language2. Click diariization to select channel3. Select No of speakers4. Select Punctuation5. Click on microphone icon

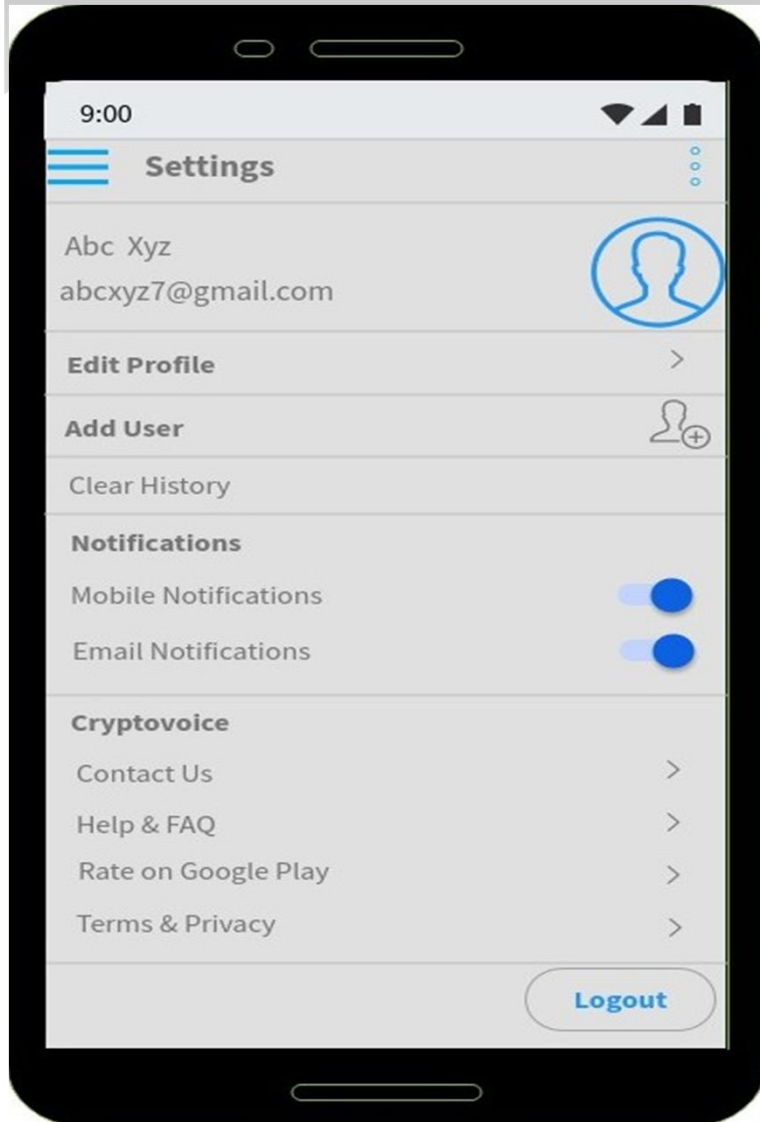
KLM Analysis

Method	Action Sequence	KLM operators	Operator Time	Total time for method
Give Input Audio to Analyse the product	Click language button select language	MFCMFC	1.35+0.2+0.23+ 1.35+0.2+0.23	16.02+ FT
	Click diarization to select channel	MFCMFC	1.35+0.2+0.23+ 1.35+0.2+0.23	
	Select No of speakers	MFCMFC	1.35+0.2+0.23+ 1.35+0.2+0.23	
	Select Punctuation	MFCMFC	1.35+0.2+0.23+ 1.35+0.2+0.23	
	Click on choose file button	MFC	1.35+0.2+0.23+ FT(File time)	

Report Page

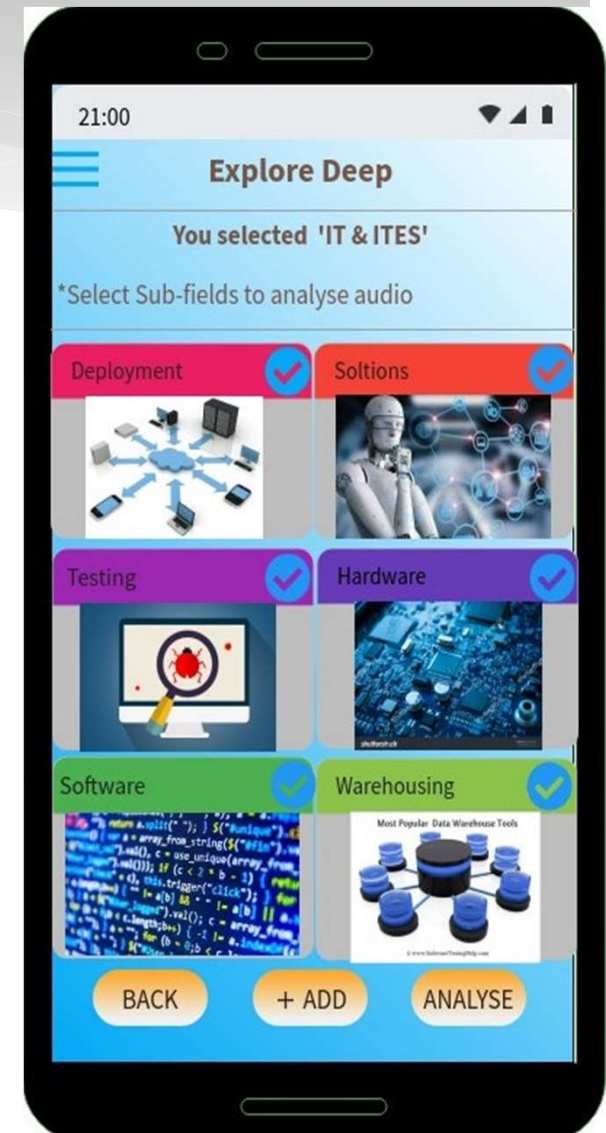
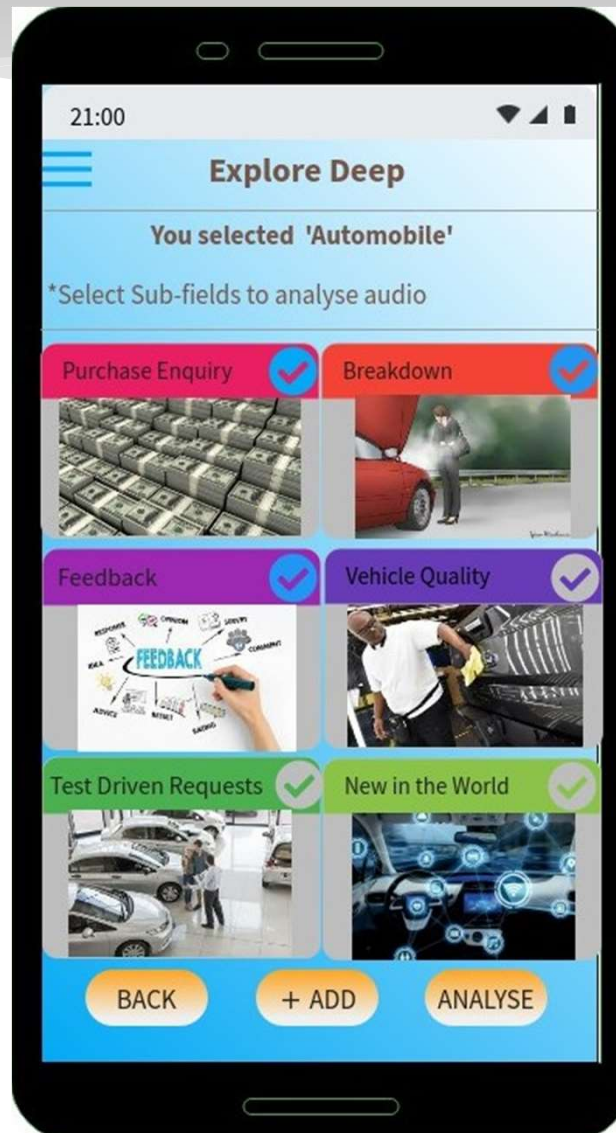
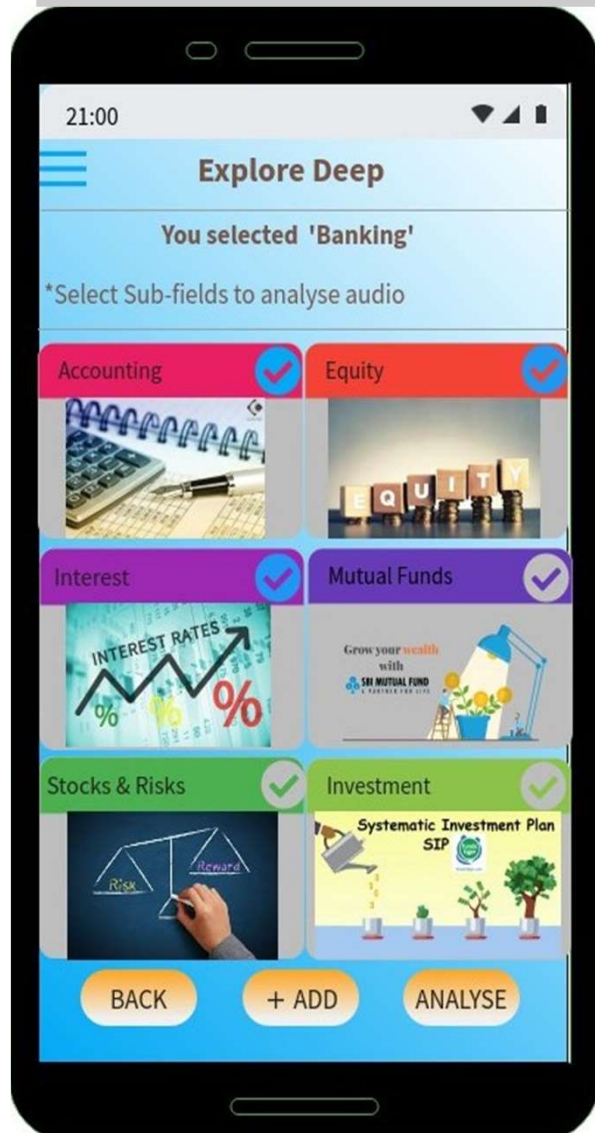


Settings



- User Credentials
- Profile Update
- New user can be added
- History, previously done work
- Manage Notifications
- CryptoVoice Credentials
- Logout Button

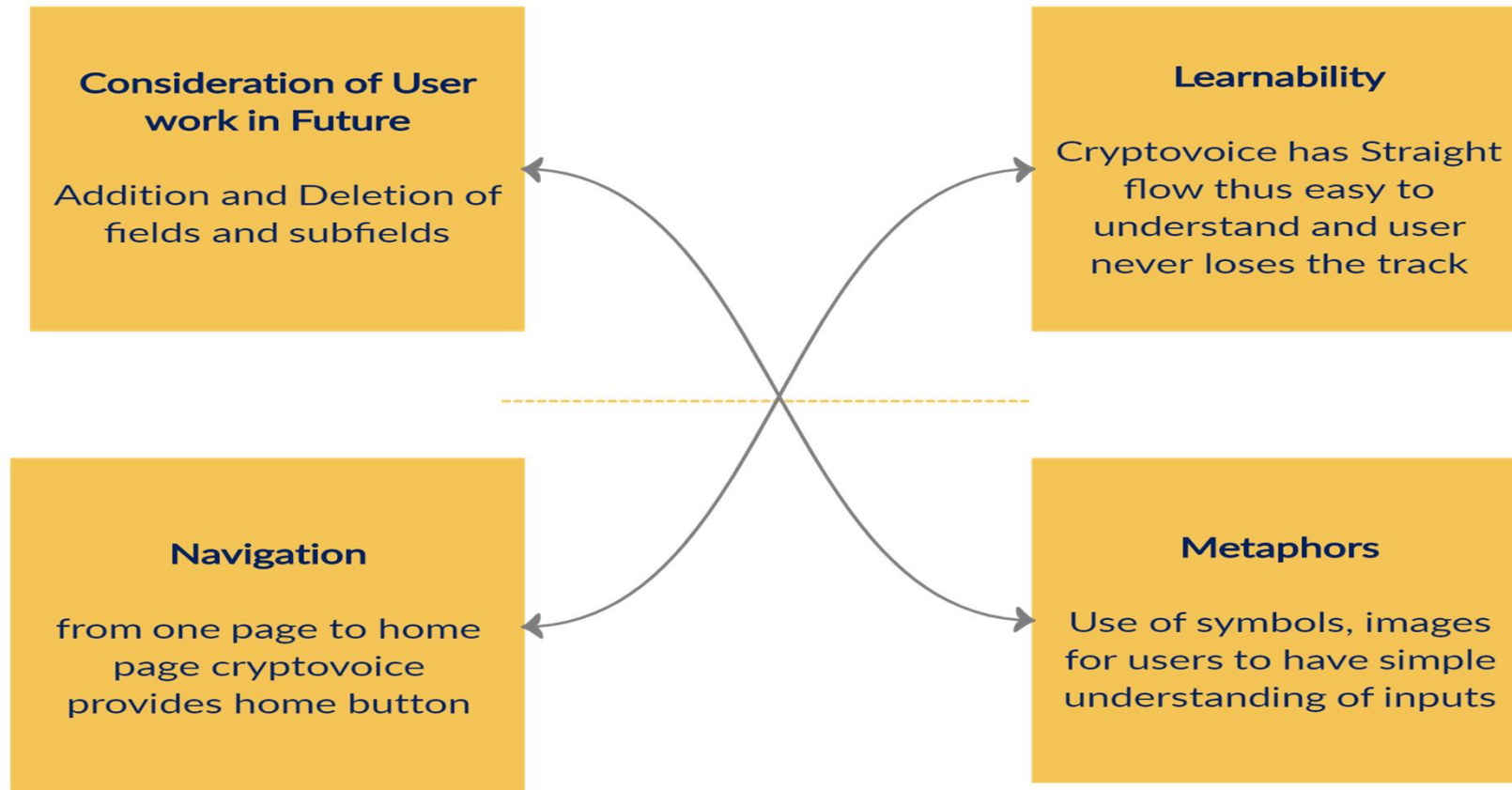
Other UI's



Expert Testing using Heuristic Evaluation

Eight Golden Rules of UI designing	Explanation
Consistency	Use of symbols, text and images throughout the UI's
Shortcuts	Use of Home Button on selection UI's if any selections goes wrong
Informative Feedback	Report generation at the end of analysing
Dialogue	Loading Report UI page
Error handling	Error occurrence internally directs to previous page
Permit reversal of actions	Availability of Back button
Support internal locus of control	Not given as may damage processing at the server
Reduce short-term memory load	Less load as UI includes images to remember

Usability Testing



Conclusion

- UI of **CryptoVoice** is developed by taking industries as workforce.
- This UI's ability to guide merchant for improving firm's services makes it different from other application.
- State of the art says, '*there are applications which convert voice to text but analysing it is new in the market*'.

References:

HCI course on COEP Moodle

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