# Speech Bubble

The *next* generation of language learning and speech suggestion wearables

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Amrutha Gujjar, 12/1/2017

# Overall Problem

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Amrutha Gujjar, 12/1/2017

In today's globalized world, we meet people from all over the world, people from many different countries who speak many different languages.

Between accents, colloquial phrases, and slang, it's all too easy to become Lost In Translation.

We aim to tackle the problem of communication difficulties head on.

# Initial Paper Prototype
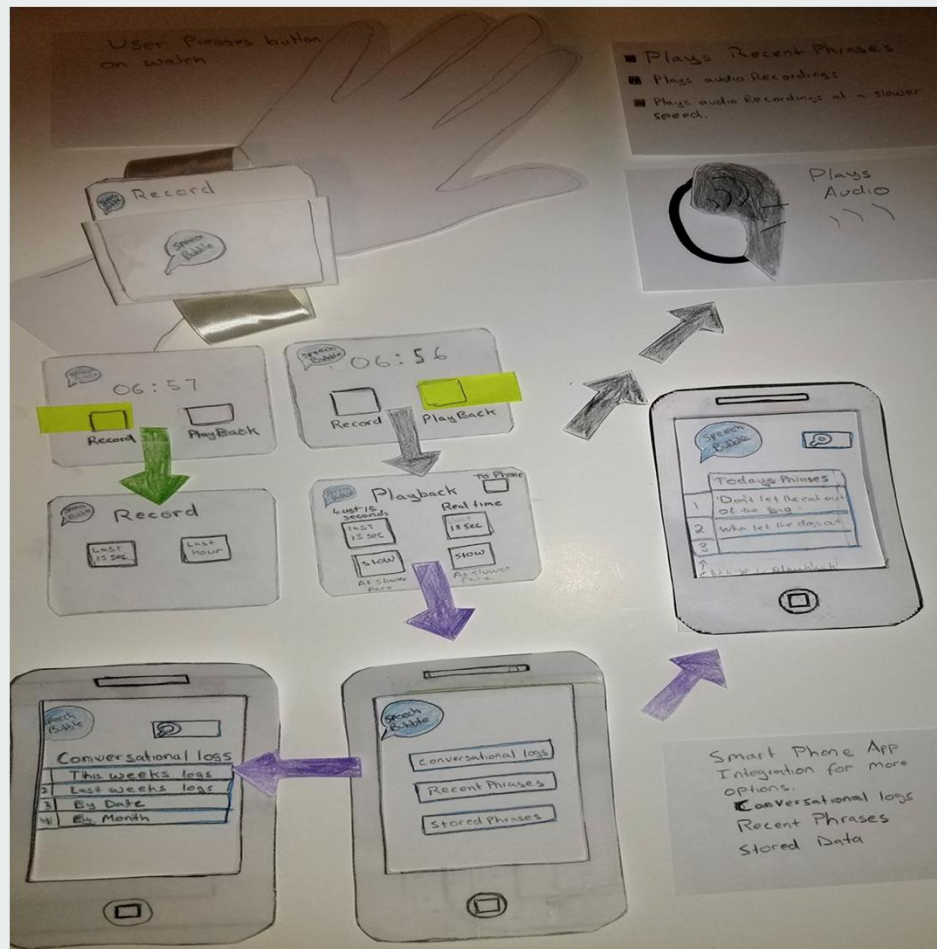
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# Overview



Conversation is misunderstood

Smartwatch interface is pressed

Conversation is recorded and played back.

Pertinent phrases are stored and available for definition lookup and playback.

**Task 1 :**

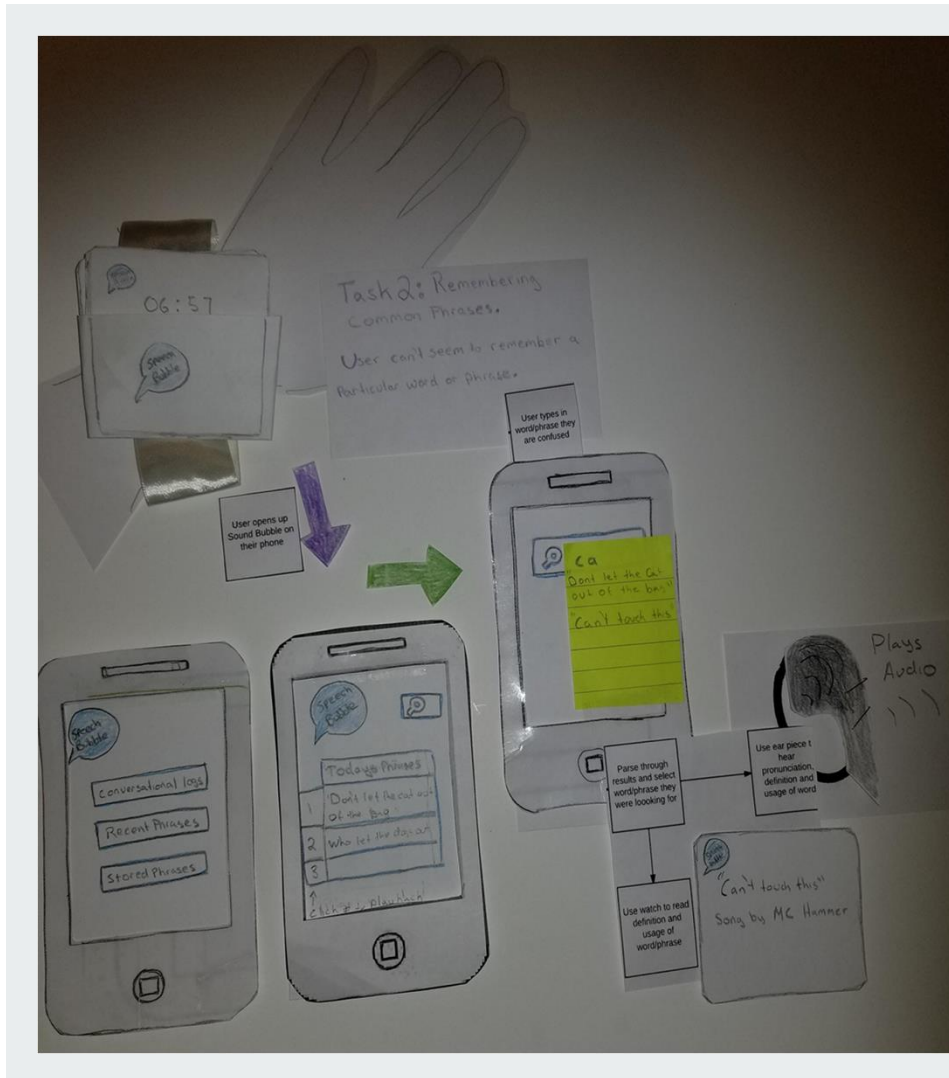Slowing down speech so it is easier to understand.

During conversations the user is able to select playback of real time audio as slowed down version or as normal.

Playback can be for a set to recent 15 seconds.

Replay option for saved speech .

Audio piped in through earpiece.

**Task 2:**

**Remembering Common Phrases.**

User can't remember a phrase heard recently.

Smartphone application allows for access and parsing of the stored results

Earpiece plays back audio of stored phrases for proper pronunciation.

# Testing Process And Results

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# Testing process

Testing participants were non native English speakers who offered further insight into how they would react to our prototype. The environment was a quiet comfortable place to test the prototype

Began the testing process with introduction and overview of prototype.

Discussed tasks.

Encouraged user to think aloud during process and step through of tasks.

Periodically asked questions.

After completion of prototype test, discussed product in more detail.

Heuristic evaluations, critiques, and usability testing prompted many changes.

Initial prototype not user friendly.

Usability needed improvement.

Notable heuristics violated:
Recognition rather than Recall
Aesthetics
Consistency
Flexibility

# Revisions made

A lot of small changes had to do with recognition rather than recall, with renaming buttons for the participant to have a better understanding of each button's purpose. As well as consistency, to match android/apple smartphone/smartwatch conventions for icons as well as searching.. Being able to query important phrases on the smartwatch contributed to making the device much more cohesive by incorporating a useful feature throughout the various platforms.

**Included comprehensive tutorial**

**Buttons, buttons, and more buttons playback and record menu options**

**Search options/voice search**
**Earpiece less conspicuous**
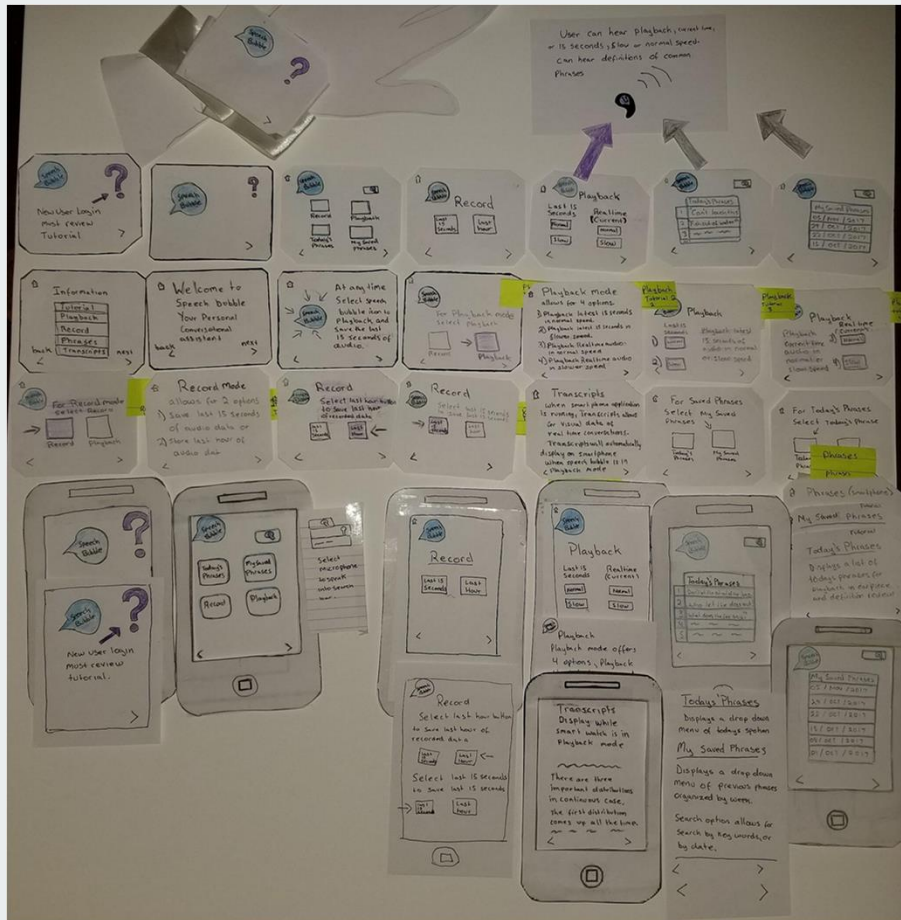**Made our design more modular**

# Final Paper Prototype

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# Overview



Conversation is misunderstood

Smartwatch interface is pressed

Conversation is recorded and played back.

Pertinent phrases are stored and available for definition lookup and playback.
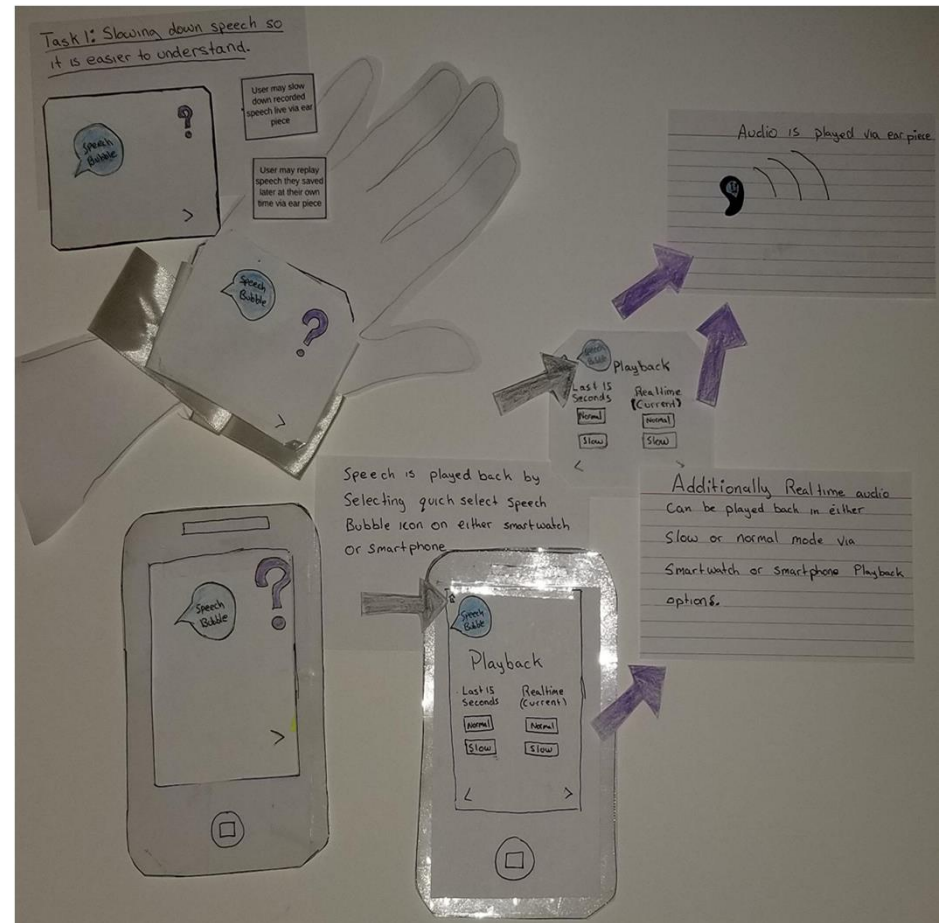
Tutorial is included as well as modularity.

**Task 1 :**

**Slowing down speech so it is easier to understand.**

Speech bubble icon from either the smartphone app or the smartwatch plays the last 15 seconds by default.

Previous playback options both normal and slow playback options remain.
Audio is played back via earpiece.

**Task 2:**

**Remembering Common Phrases.**

User can't remember a phrase heard recently.

Smartphone and smartwatch applications both now allow for access of stored phrases. Voice search also allows for phrase look up..

Earpiece audio plays back stored phrase for proper pronunciation.
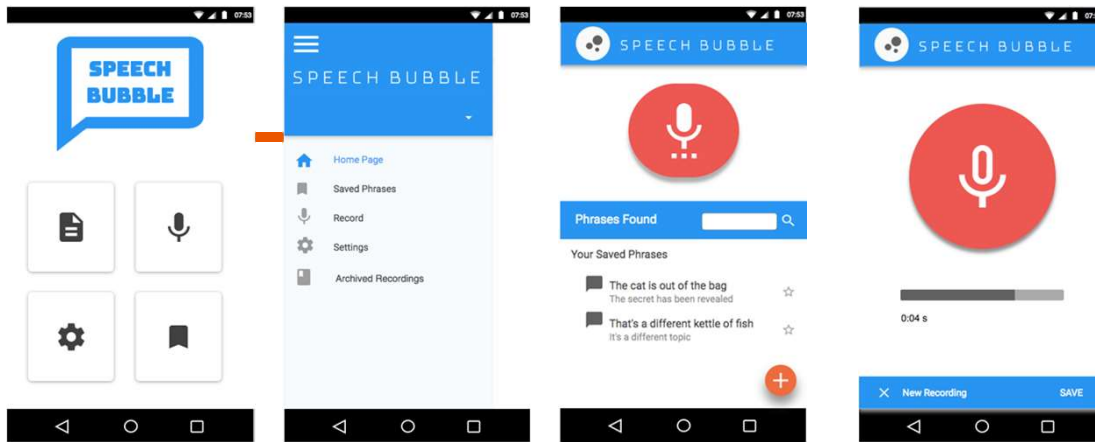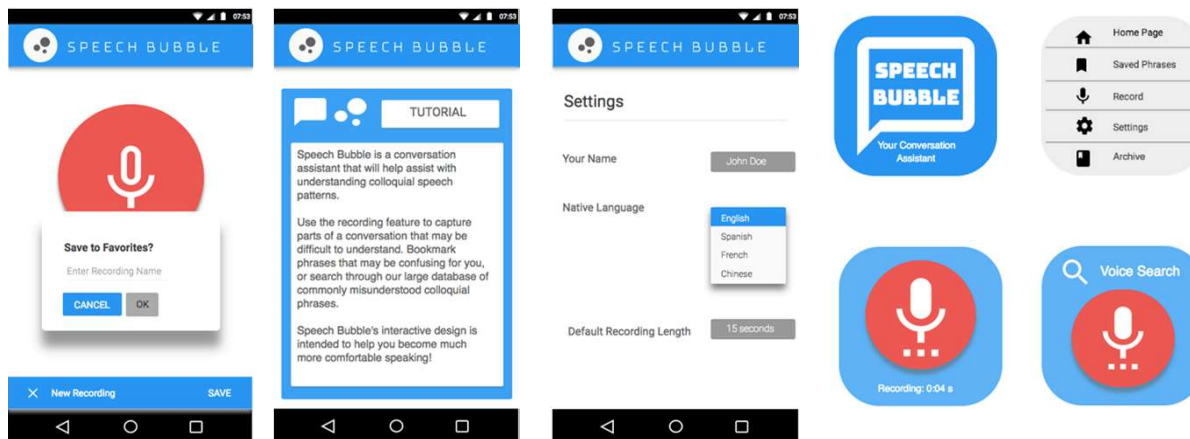
# Digital Mockup
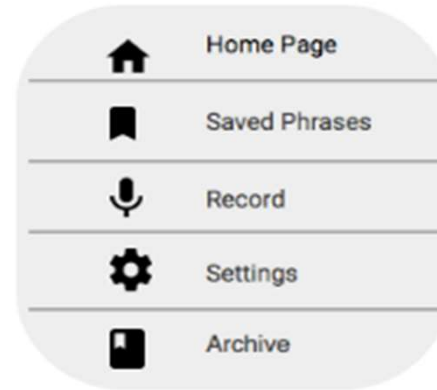
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# Overview



Focuses on the outlay of icons and screens in the interface which runs primarily on a smartwatch, smartphone, and earpiece

Allows for quick navigation of search phrases and playback.

SPEECH BUBBLE

Home Page
Saved Phrases
Record
Settings
Archived Recordings

SPEECH BUBBLE

Phrases Found

Your Saved Phrases

The cat is out of the bag
The secret has been revealed

That's a different kettle of fish
It's a different topic

SPEECH BUBBLE

0:04 s

New Recording                SAVE

SPEECH BUBBLE

Save to Favorites?

Enter Recording Name

CANCEL        OK

New Recording                SAVE

SPEECH BUBBLE

TUTORIAL

Speech Bubble is a conversation
assistant that will help assist with
understanding colloquial speech
patterns.

Use the recording feature to capture
parts of a conversation that may be
difficult to understand. Bookmark
phrases that may be confusing for you,
or search through our large database of
commonly misunderstood colloquial
phrases.

Speech Bubble's interactive design is
intended to help you become much
more comfortable speaking!

SPEECH BUBBLE

Settings

Your Name                John Doe

Native Language          English
                         Spanish
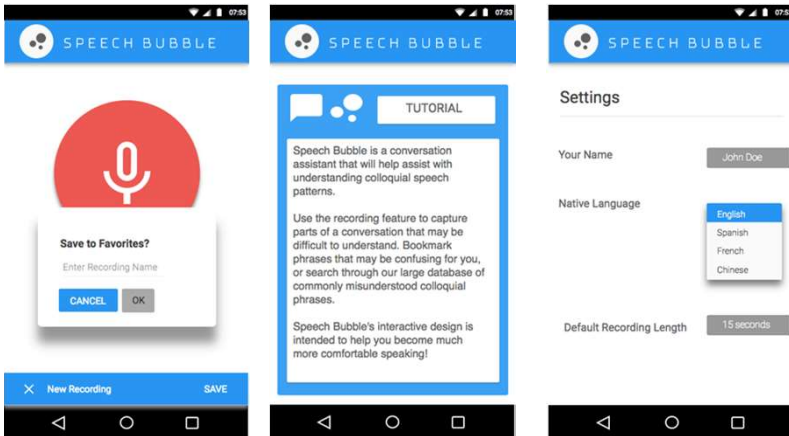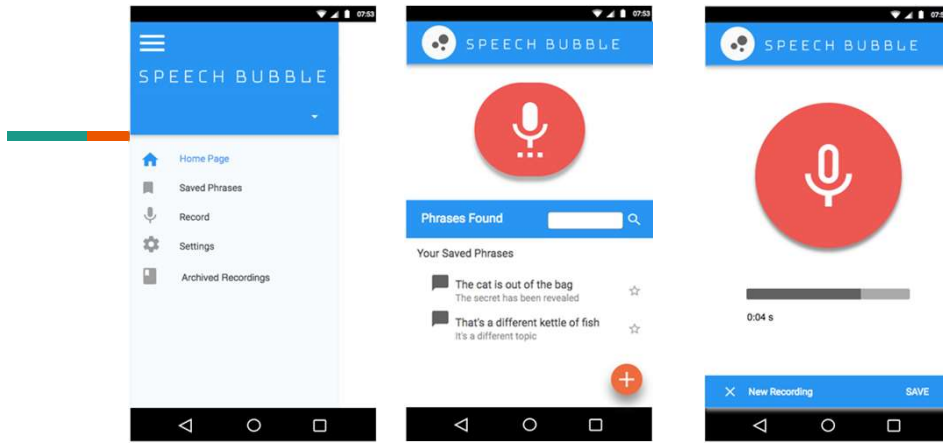                         French
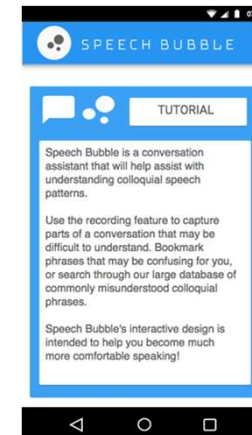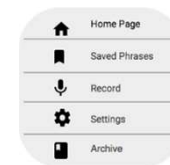                         Chinese

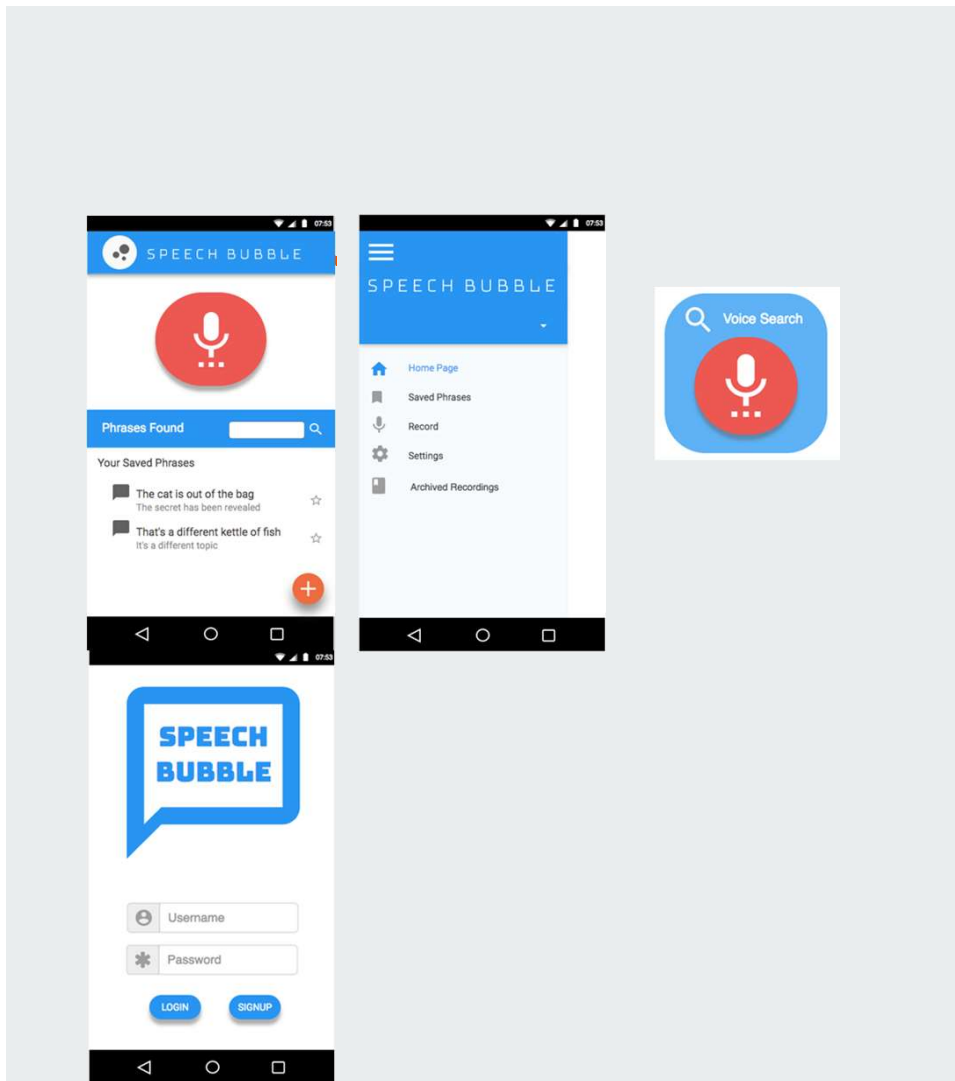Default Recording Length   15 seconds

**Task 1 :**

**Slowing down speech so it is easier to understand.**

User misunderstands what is being said and presses speech bubble icon on smartwatch. During recording speech is played back.

Tutorial is available to provide instructions and clear up any confusion.

SPEECH BUBBLE
Your Conversation Assistant

Recording: 0:04 s

Recording: 0:04 s

- Home Page
- Saved Phrases
- Record
- Settings
- Archive

07:53

SPEECH BUBBLE

TUTORIAL

Speech Bubble is a conversation assistant that will help assist with understanding colloquial speech patterns.

Use the recording feature to capture parts of a conversation that may be difficult to understand. Bookmark phrases that may be confusing for you, or search through our large database of commonly misunderstood colloquial phrases.

Speech Bubble's interactive design is intended to help you become much more comfortable speaking!

**Task 2:**

**Remembering Common Phrases.**

User can't remember a phrase heard recently.

User is able to search and playback recently saved phrases on both smartphone and smartwatch. User selects saved phrases.

User is able to playback recently saved phrases.

# Summary Of Lessons Learned In Design Process

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# What we learned

How to fit a complex and potentially very drawn out iterative process into a quick timeline.

Improve placement and accessibility of various commands, and to clarify visual elements in our technology.

The process of iteration we followed was especially helpful to our group during the

"Getting the Right Design" part of the class.

Interpret and implement feedback about usability and various directions for our project.

# What we learned (continued)

New perspectives.

Narrow scope on our project, and to come up with many possible tasks and iteratively narrow them down

Articulate our ideas for our project more clearly as we went.

Careful documentation.

# Thank You!