Shanice Abigail - Project Portfolio

PROJECT: 3VIA

Overview

3VIA is a desktop trivia application used by learners for material iteration in active recall. The user interacts with it using a Command Line Interface (CLI), and it has a GUI created with JavaFX. It is written in Java, and has about 12 kLoC.

Summary of contributions

- **Major enhancement**: added **Navigation Tab Commands**
  - What it does: allows user to take note of which AppState they are at, as well as simplifies navigation through writing the page they want to navigate to as a command or through, more intuitively, mouse clicks.
  - Justification: This feature reduces the need for the user to remember and additional commands to use the app. It allows the user to visually check the location of their app state, and the methods available in that page, through the user guide.
  - Highlights: This enhancement requires an understanding of the user, and well-designed learning experience for the user, also known as design thinking methodology. It requires both technical and non-technical skills to analyse the needs of the potential users, as well as technical skills to implement the analysis. The implementation was challenging as it required editing the user interface, and learning to use additional software and coding languages to make desired changes in a short time span.
  - Credits: *[Vertical, Stateful JFXTabPane tutorial]*
- **Major enhancement**: added **Mode command**
  - What it does: Allows the user to toggle between the modes of the application through a simple command, changing the GUI, by providing a more comfortable use of the app depending on their preference and environment.
  - Justification: This feature allows the user to use the app in any situation, being in a bright or dark surrounding. This feature has also been implemented in a lot of web-applications and social media, such as Twitter and Reddit. With the user in mind, they are likely to continue using the app if they’re able to use it comfortably.

  - Highlights: This is an enhancement which is designed specifically for the user in mind. Design and implementation of this feature requires a lot of technical and non-technical skills get to know the user and how they will use the app. Implementation of this feature required a new CSS file to toggle between back and forth, as well as a proper design to toggle the modes, which was not part of the main learning curve.
- **Minor enhancement**: modified the "learn" and "review" command to allow navigation between tabs.
- **Code contributed**: Shanice’s Reposense
- **Other contributions**:
  - Enhancements to existing features:
    - Redesigned GUI colour scheme: PR #155
  - Documentation:
    - Edited existing contents of the User Guide: PR #159
    - Added and edited User and Developer guides: PR #180
  - Tools:
    - Integrated a third party library (JFoenix) to the project: PR #73

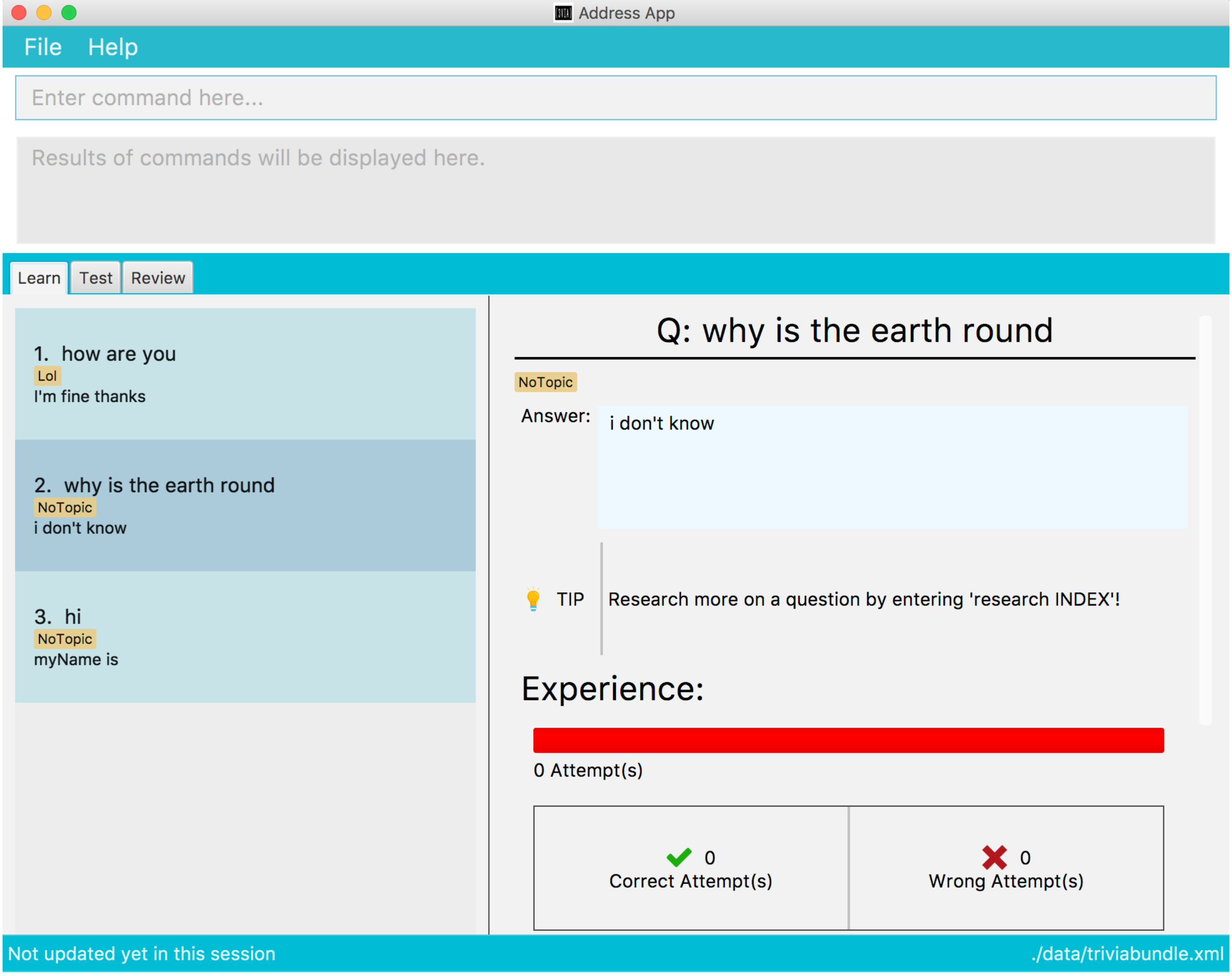
Contributions to the User Guide

> *Given below are sections I contributed to the User Guide. They highlight my ability to write documentation for end-users.*

Navigation to another tab

You can type `learn` to go to learn page, `test` to go to test page and `review` to go to review page. But in case you forget, type any of the tab names and you’ll navigate there, as long as you’re not in the middle of a test! No running away from the test you’re doing, you can do this and keep learning! Format: `learn` , `test` , `review`

Changing the day and night mode of the app: `mode`



1. how are you
Lol
I'm fine thanks

2. why is the earth round
NoTopic
i don't know

3. hi
NoTopic
myName is

Q: why is the earth round

NoTopic

Answer: i don't know

TIP Research more on a question by entering 'research INDEX'!

Experience:

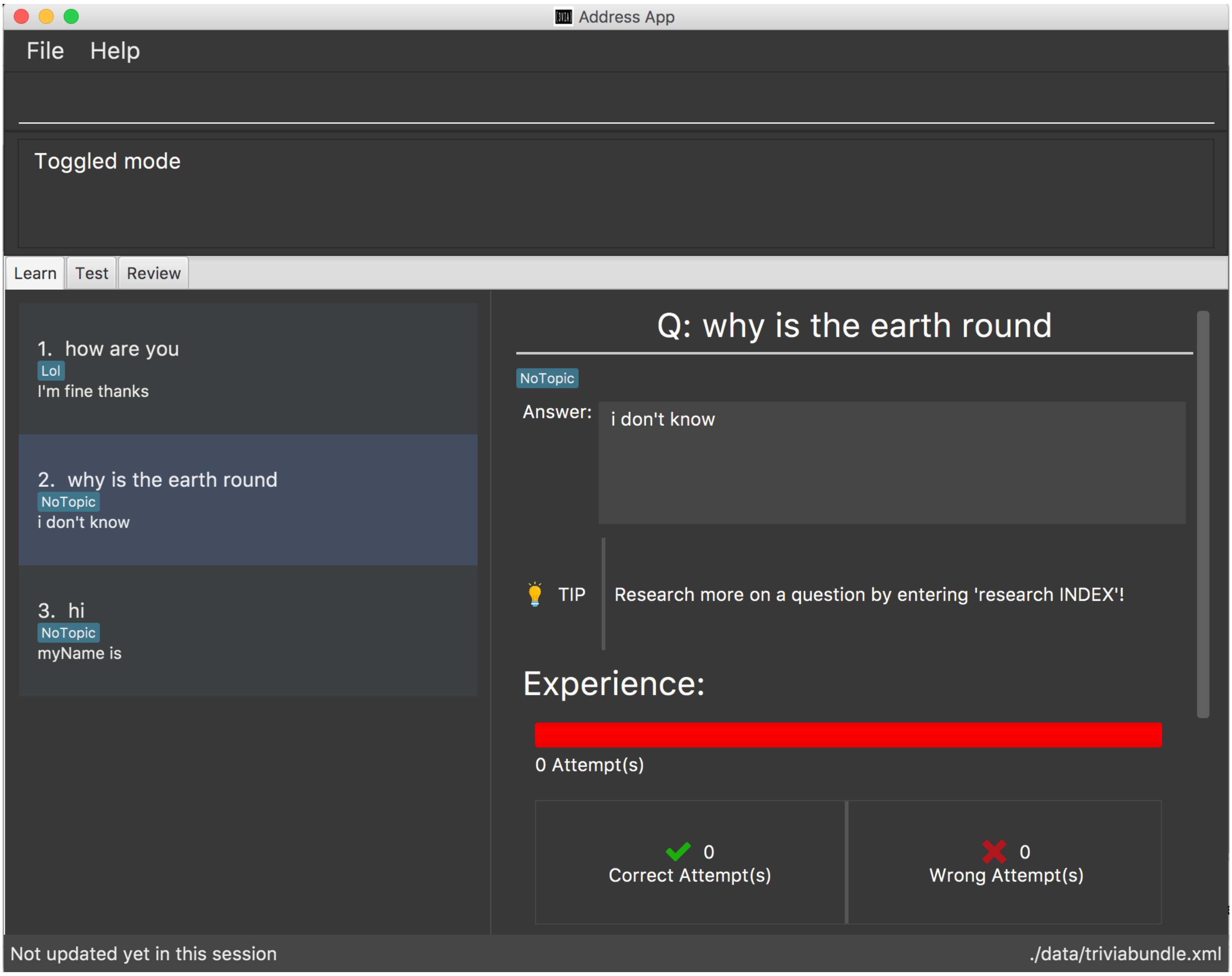
0 Attempt(s)

✓ 0 Correct Attempt(s)

✗ 0 Wrong Attempt(s)

Not updated yet in this session ./data/triviabundle.xml

Figure 1. Day Mode / Light Theme



Toggled mode

1. how are you
Lol
I'm fine thanks

2. why is the earth round
NoTopic
i don't know

3. hi
NoTopic
myName is

Q: why is the earth round
NoTopic
Answer: i don't know

Research more on a question by entering 'research INDEX'!

0 Attempt(s)
0 Correct Attempt(s)
0 Wrong Attempt(s)

Not updated yet in this session ./data/triviabundle.xml

Figure 2. Night Mode / Dark Theme

Type `mode` in any page, or section of the app to switch between the modes to suit your comfort in learning and using 3VIA. Format: `mode`

Contributions to the Developer Guide

> *Given below are sections I contributed to the Developer Guide. They showcase my ability to write technical documentation and the technical depth of my contributions to the project.*

Navigation Feature

Current Implementation

The Navigation Tab is designed for users to be aware of the different functionality of our app and paired with its relevant content. We added a navigation tab feature which can be accessed through commands of the tabs the user wants to navigate to.

The contents of the each AppState, or the functionalities of that page is attached to the tab itself, to allow the user to check and use the app more efficiently. Commands and mouse click events will handle the updating of AppState.

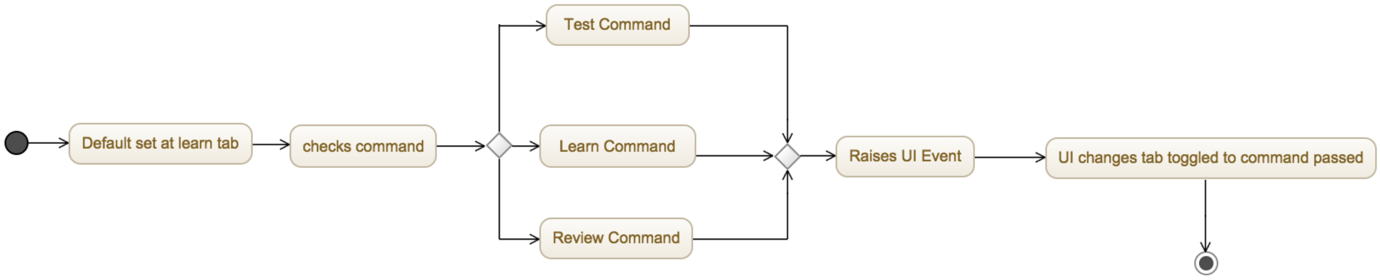


Figure 3. Toggle Tab Event

Handling event

At the present, the Navigation Tab is not a separate class on its own, and is embedded into the `MainDisplay` class. Event raised is ToggleTabEvent.

GUI Handling

The tabs are expected to toggle and display their respective tab contents according to the user’s interaction:

- Commands from Command Line Interface
- Mouse clicks
- Keyboard shortcuts [future release]

Design Considerations

Location of Navigation tab

- Side bar
  - pros: easy to see, optimized for user experience
  - cons: harder to implement
- Top bar (*currently implemented*)
  - pros: easier to implement
  - cons: less visually intuitive for users compared to side bar

Using external library

Originally we were using JFoenix, however due to a bug which causes the alignment of our pages to the tabs to be visually off, we decided to implement a regular tab.

- Library used: JFoenix

- Tutorial inspiration: Vertical Tabs

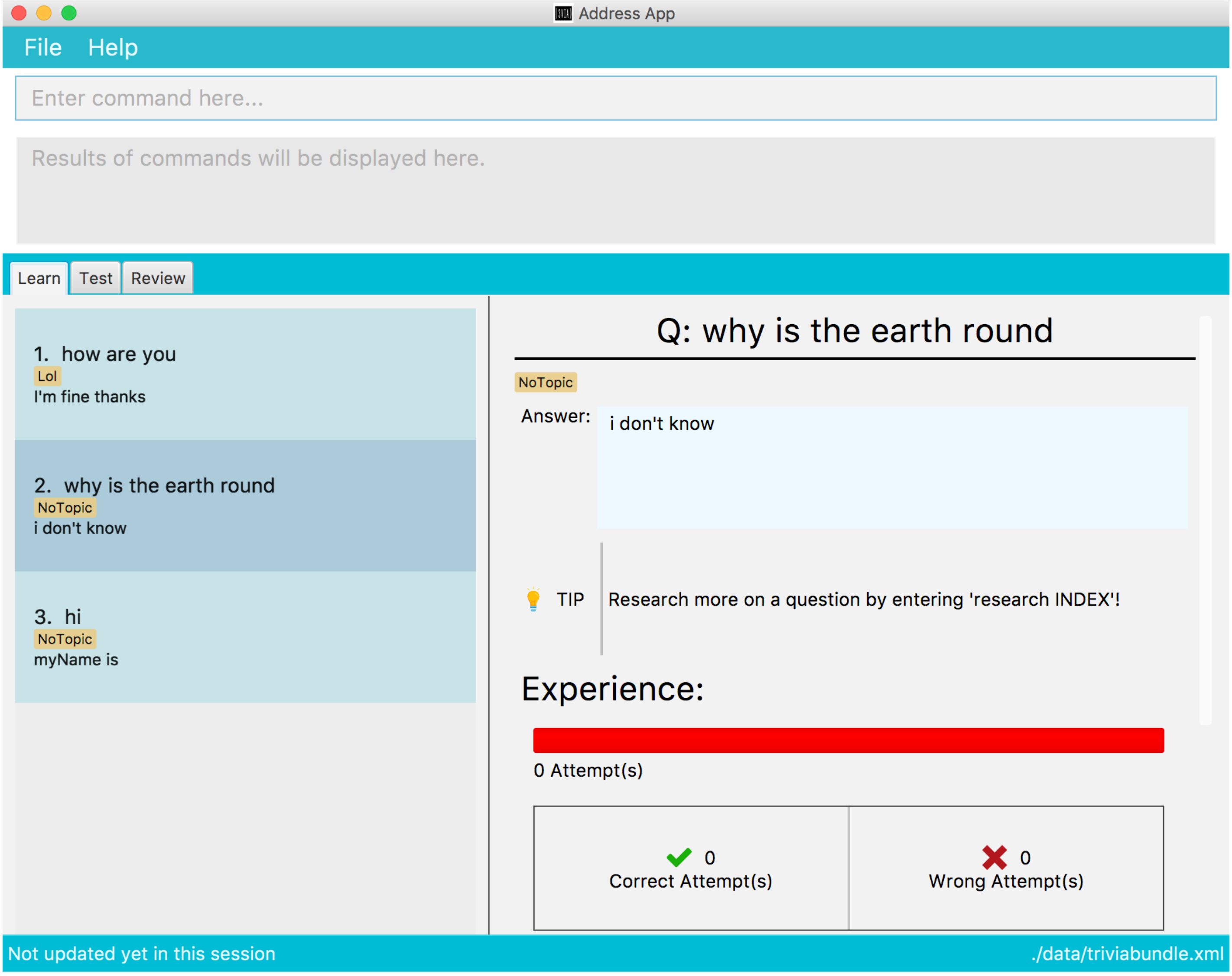
Icons on the Tabs

We have added the icon images for the tabs, but implementation is still a work in progress.

Day and Night Mode Feature

Current Implementation

Mode allows you to toggle between day and night mode anywhere in the app and it can be accessed as a command in any AppState of 3VIA.



Enter command here...

Results of commands will be displayed here.

1. how are you
Lol
I'm fine thanks

2. why is the earth round
NoTopic
i don't know

3. hi
NoTopic
myName is

Q: why is the earth round

NoTopic

Answer: i don't know

TIP Research more on a question by entering 'research INDEX'!

Experience:

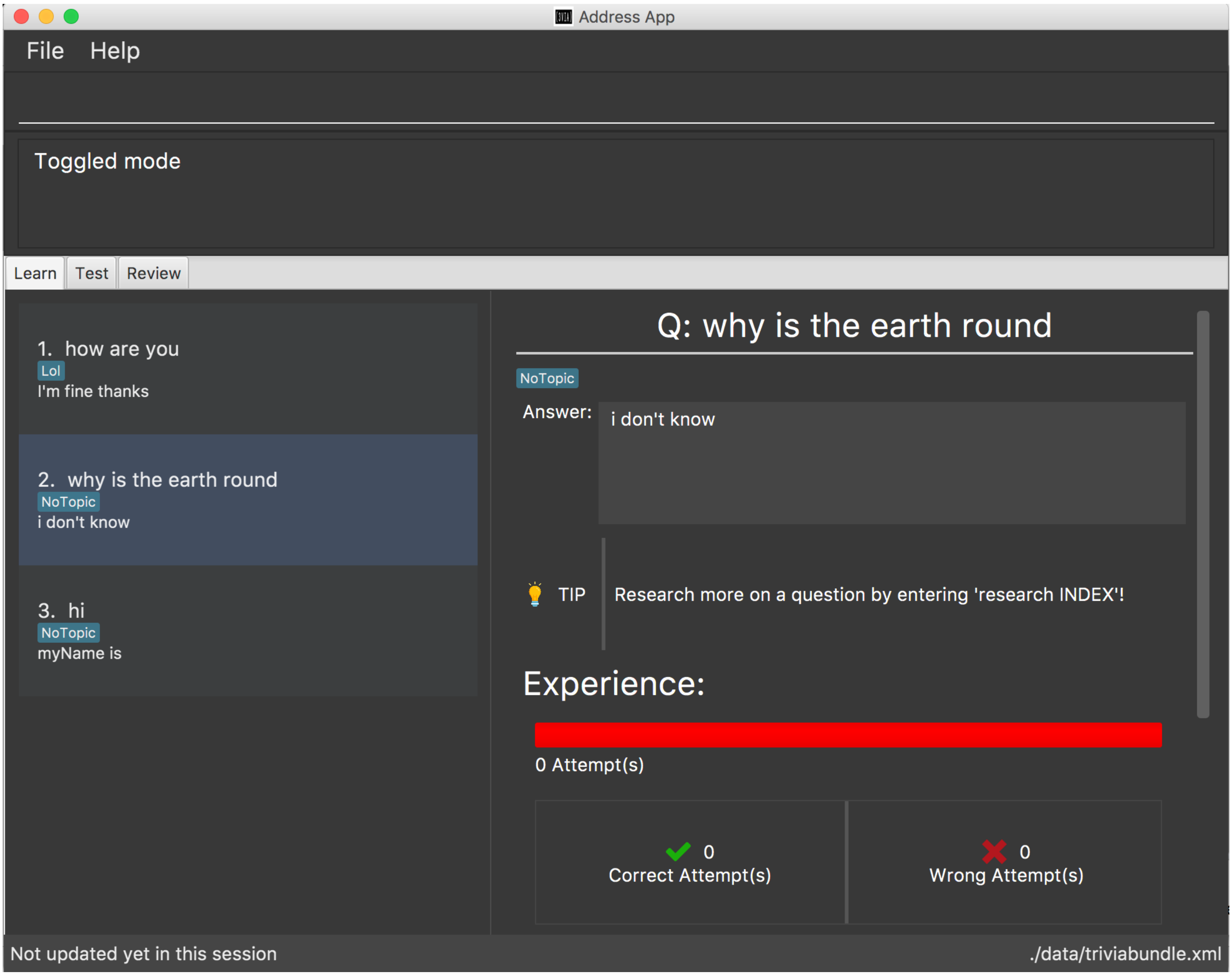
0 Attempt(s)

✓ 0 Correct Attempt(s)

✗ 0 Wrong Attempt(s)

Not updated yet in this session ./data/triviabundle.xml

Figure 4. Day Mode / Light Theme



Toggled mode

1. how are you
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Q: why is the earth round

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Answer: i don't know

TIP Research more on a question by entering 'research INDEX'!

Experience:

0 Attempt(s)

✓ 0
Correct Attempt(s)

✗ 0
Wrong Attempt(s)

Not updated yet in this session ./data/triviabundle.xml

Figure 5. Night Mode / Dark Theme

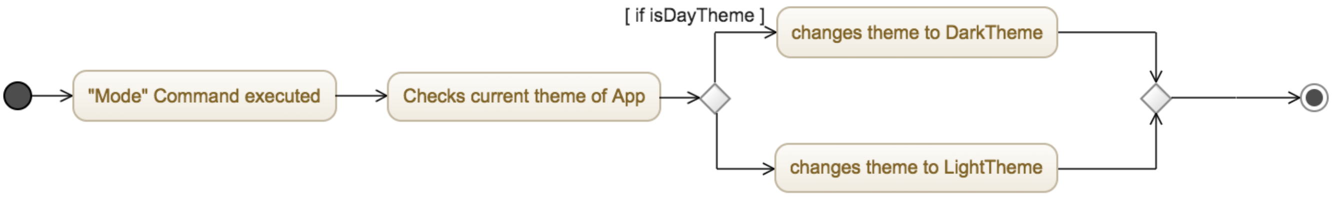
"Mode" Command executed
Checks current theme of App
[if isDayTheme]
changes theme to DarkTheme
changes theme to LightTheme

Figure 6. Mode activity diagram

Handling event

Event is handled in the `MainWindow.java` .

GUI Handling

The default of the application is a "Day Theme" stylesheet, meaning a generally white background with dark text. The command will swap the current theme set to a "Dark Theme" stylesheet. Each time the the `mode` command is called, the boolean in `MainDisplay.java` acts as a toggle between the 2 themes.

Last updated 2018-11-12 22:52:05 SGT