CIS 573 Software Engineering - Fall 2013
First Iteration Report

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1. Agreed-upon User Stories Targeted for this Iteration:

1. As a user, I want to log my sleep or my naps.
2. As a user, I do not want use of the application to itself be an inhibitor to my sleep
3. As a user, I want to set up my user profile with my year in school, whether or not I'm a smoker, etc.
4. As a user, I want to be able to modify my user profile at any time while using the application.
5. As a user, I want to look at a graphical representation of my sleep patterns over the past week/month/year.
6. As a user, I want to be log any sleep inhibitors I used close to bedtime for any previously logged night of sleep or nap.
12. As a user, I want to be able to listen to the sleep podcast as I'm going to sleep, if I would like, to help me get to sleep faster.

2. Iteration Outcomes:

- General User Interface improvements (#1, 2, 5, 6, 12)
  - Changed color scheme from blue to amber
  - Reduced screen brightness and fluorescence when using the application based on ambient light levels
- Bug/crash fixes (#1, 2, 5, 6, 12)
  - Inconsistencies in Android version compatibility were causing several crashes
- Refactoring of existing code (#1, 2, 5, 6, 12)
  - Eliminated redundant and confusing code structures
  - Removed multiple copied implementations of identical code
  - Decreased coupling between database helper and accessor classes
  - Optimized SQL queries when retrieving application data
  - Increased modularity to allow for addition of new features
  - Separated all database functionality into a self-contained module

3. Incomplete User Stories:

- Implement User Profiles (#3, 4)

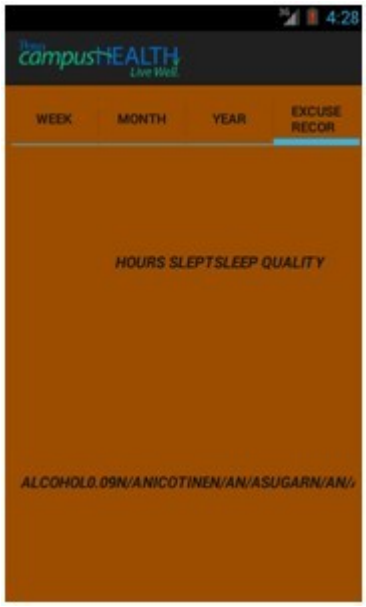
- Unfinished in this iteration due to additional testing and refactoring activities needed to improve the stability of the application before new features can be reliably added
- Targeted for completion in the next iteration (see Section 8)

4. Additional User Stories Targeted Ahead of Schedule:

7. As a user, I want to get tips on improving my sleep, tailored to my user profile and data logged so far, so that I can better manage my sleep cycle.

- List of sleep tips has been incorporated into the application database and is filtered based on the factors impacting sleep that the user has entered
- The user will now only see sleep tips relevant to the data they have logged

5. Known Issues:



- ChartActivity has some bugs in the layout when the user attempts to look at the charts of data when no data has yet been recorded
  - Pulling additional fields up to the SleepTrackerApplication class will mitigate the null pointer exceptions causing this

6. Unit Tests Add this Iteration:

- Additional test cases for MainActivity in MainActivityTests.java
  - Test correct color scheme application (testSleepColor() and testWakeColorAndAddEntry())
  - Test correct filtering of sleep tips with ‘alcohol’ flag enabled (testGetTipsWithAlcohol())
- New unit test framework for DataActivity in DataActivityTests.java
  - Test database setup and access and verify correct object creation (testQueryAllEmptyList())

7. Proposed New User Stories:

13. As a user, I want the application to automatically guess whether I took a nap or sleep, without me having to provide additional input
14. As a user, I want to be able to modify whether or not a given period of rest should be classified as sleep or a nap, overriding the automatically generated input

8. Proposed Goals for Second Iteration:

- Implement User Profile creation and modification (#3, 4)
    - Proposed user profile attributes:
        - Class year
        - School at Penn
        - "How many cigarettes do you smoke per day?"
        - "How many alcoholic drinks do you consume in an average week?"
        - "How many cups of coffee do you drink per day?"
        - Any others?
- Filter sleep tips based on user profile as well as behavior, if the user has answered profile questions (#7)
- Allow users to enter concentration, fatigue and productivity self-assessment ratings for a given day when they go to sleep for the night (i.e. when "Go To Sleep" is triggered after 8pm and before 6am) (#8)
- Implement automatic logging of naps based on the time of day at which that sleep begins (#13, 14)
- Ongoing debugging and testing activities (#All)

9. Ideas for Future Iterations:

- Integrate alarm clock functionality to minimize user time spent entering data/user error
- Aggregate and anonymize data locally on device and periodically send to central repository (#10, 11)
- Include additional and Penn-specific sleep tips (#7)
- Visualization of correlation of sleep patterns to concentration, fatigue, productivity on subsequent days (#9)

Index of User Stories

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4. As a user, I want to be able to modify my user profile at any time while using the application.
5. As a user, I want to look at a graphical representation of my sleep patterns over the past week/month/year.
6. As a user, I want to be log any sleep inhibitors I used close to bedtime for any previously logged night of sleep or nap.
7. As a user, I want to get tips on improving my sleep, tailored to my user profile and data logged so far, so that I can better manage my sleep cycle.
8. As a user, I want to be able to rate my concentration, fatigue and productivity for a given day.
9. As a user, I want to be able to view a summary of my data that shows how my sleep patterns affect my concentration, fatigue, and productivity the following day.
10. As an SHS administrator, I want to be able to view anonymized, aggregated data from users so that I can better understand sleep habits and use of sleep inhibitors in the student population.
11. As a user, I want to be sure that I cannot be identified from any of the information submitted by the application to the central datastore
12. As a user, I want to be able to listen to the sleep podcast as I'm going to sleep, if I would like, to help me get to sleep faster.
13. As a user, I want the application to automatically guess whether I took a nap or sleep, without me having to provide additional input
14. As a user, I want to be able to modify whether or not a given period of rest should be classified as sleep or a nap, overriding the automatically generated input