1. The semantic, syntactic, lexical design specification:

1.1 Semantic: meaning/desired function

1.1.1 search/add/drop classes
   a) Function: search/add/drop classes
   b) Parameters: what class it is? (class number, class name)
   c) Description: Users can search a class by term and class number, or by key words. They can also add a class to their class lists or delete a class from the class list.
   d) Feedback: When 'search' a class, a list of classes, which meet the requirements will be shown on the screen. When 'add' a class, the class selected will be added from user's class list. When 'drop' a class, the class selected will be deleted from user's class list.
   e) Errors: 1. Add a wrong class. (Can go the class list and delete the class.) 2. Accidentally delete a class. (Can search again and re-add the class.)

1.1.2 view schedule
   a) Function: view schedule
   b) Parameters: When is the schedule?
   c) Description: The users can choose a day and view the schedule of that day.
   d) Feedback: the schedule of the day will be shown on the screen.
   e) Errors: chose the wrong day (Can slide on the screen to choose another day.)

1.1.3 view grade
   a) Function: view grade
   b) Parameters: the information of the grade (e.g. which term? which class? what is the score?)
   c) Description: Users can select a class and view their grade of this class.
   d) Feedback: The grade of a give class will be shown on the screen.
   e) Errors: Chose the wrong class (Can be canceled and go back to the previous page.)
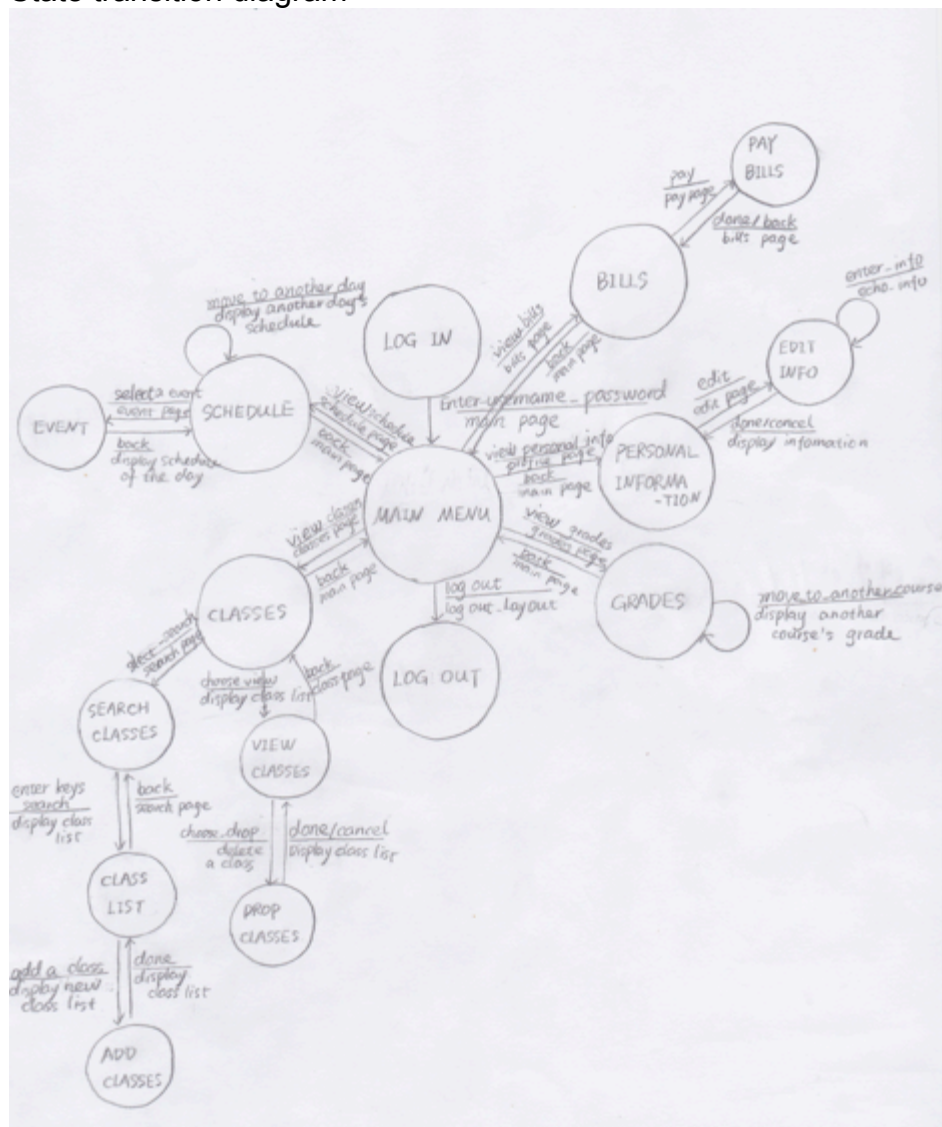
1.1.4 view/edit profile
   a) Function: view/edit personal information
   b) Parameters: what kind of the personal information it is? (e.g. address, phone number…)
   c) Description: Users can view and edit their personal information, including permanent address, local address, email, phone number and emergency contact.
   d) Feedback: When 'view' profile, all the personal information of this user will be shown on the screen. When 'edit' profile, some area of the personal information can be changed.
   e) Errors: Put the wrong information. (Can edit the information again.)

1.1.5 view/ pay bills
a) Function: view/ pay bills

b) Parameters: information about the bill (e.g. what is the bill name? How much it is? When is statement date? When is the due day?)

c) Description: Users can view and pay their bills through the system.

d) Feedback: When 'view' a bill, the detailed information of the bill will be shown on the screen. When 'pay' a bill, the user will be directed to the pay where a bill can be paid.

e) Errors: Accidentally clicked the bill, which the user does not want to view or pay (Can be canceled and go back to the previous page)

1.2 Syntactic: how the semantic command is formed
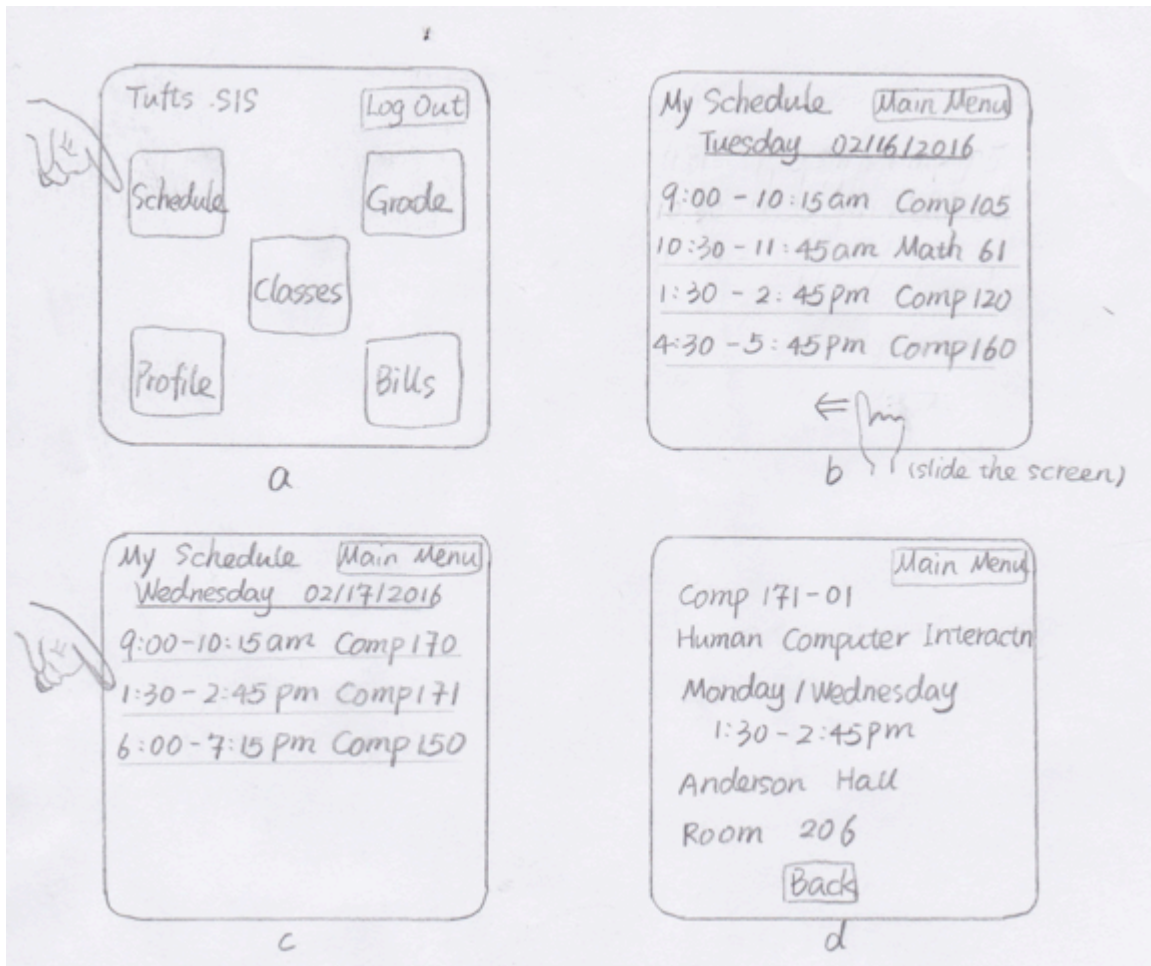
State transition diagram

1.3 Lexical: sequence of actions and definitions of the tokens.

- view schedule: click the 'schedule' button in the main menu.
- move to another day's schedule: slide the screen.
- select an event: click the event name on the screen
- back (to main page): click 'back' button or click 'main page' button.
- view bills: click the 'bills' button in the main menu.
- pay a bill: click 'pay' button in the 'bills page'.
- view personal information: click the 'profile' button in the main menu.
- edit personal information: click 'edit' button in the 'view personal information' page
- enter the new information: type in the information in the text box.
- view grade: click the 'grade' button in the main menu (the newest posted grade will be shown on the screen).
- move to another course's grade: slide the screen.
- view classes: click the 'view classes' button in the 'classes' page.
- select a class: press the class on the screen.
- drop classes: click 'drop' button when a class is selected.
- select search (classes): click the 'search classes' button in the 'classes' page.
- search classes: type in the term and class number or key words in the text box -> click 'search' button.
- add classes: click 'add' button after selecting a class.
- class number: start with letters represent department, followed by a 3-digit number. 0-100 represents classes for undergraduates; while >200 represents classes for graduates only.
- user name: a string consists of letters and number, unique for each user.
- password: a combination of upper letters, lower letters and numbers.

2. Storyboard:
(after logged in), show schedule and check the location of tomorrow's class
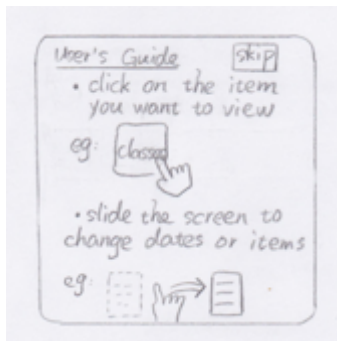(Please look at the picture in the next page)

   a) click 'schedule' button in the main page
   b) today's schedule shown on the screen. (For example, the schedule of 02/16/2016.) Slide the screen to switch date to tomorrow.
   c) tomorrow's schedule shown on the screen. (For example, the schedule of 02/17/2016.) Click on one class. (For example, comp171)
   d) the detailed information about this class, including the location shown on the screen.

Tufts SIS [Log Out]
Schedule | Grade
Classes
Profile | Bills
a

My Schedule [Main Menu]
Tuesday 02/16/2016
9:00 - 10:15am Comp 105
10:30 - 11:45am Math 61
1:30 - 2:45pm Comp 120
4:30 - 5:45pm Comp 160
b (slide the screen)

My Schedule [Main Menu]
Wednesday 02/17/2016
9:00 - 10:15am Comp 170
1:30 - 2:45pm Comp 171
6:00 - 7:15pm Comp 150
c

[Main Menu]
Comp 171-01
Human Computer Interactn
Monday / Wednesday
1:30 - 2:45pm
Anderson Hall
Room 206
[Back]
d

3. User documentation:

This product is a simplified version of SIS system in websites or smart phones. So the users should be already familiar with the interface. No user documentation needed actually.

  If there has to be one, due to the limited size of the smart watches, the user documentation has to be very short. I will be something like the following:

User's Guide [Skip]
• click on the item you want to view
eg: [class]
• slide the screen to change dates or items
eg:

4. Task-command analysis:

The following task-command analysis are stated with the main menu page (after login).

4.1 edit personal information
(For example, edit email to new@tufts.edu)
click 'profile' button -> click 'edit' button -> select the edit area (In this case, email) -> (the old information will be selected automatically) enter the new information new@tufts.edu will cover the old one automatically -> click 'done'.
  Thus, totally 3 button presses ('profile' button, 'edit' button and 'done' button), 13 keyboard enters (new@tufts.edu), 1 select (select email).
Because smart watch do not have a keyboard, so keyboard enters are also button presses.
  Therefore, button press: 16 times; hand movement across device or screen: 1 time; hand movements between screen and other parts of the device: 0 times.

4.2 search and add a class
(For example, search by key words and add class Comp171)
click 'classes' button -> click 'search classes' button -> enter the key words in the text box (In this case, enter 'human computer interaction) -> click 'search' button, then the class will shown on the screen. -> select the class comp171 -> click 'add' button.
  Thus, totally 4 button presses ('classes' button, 'search classes' button, 'search' button and 'add' button), 26 keyboard enters, 1 select (select the class).
  Therefore, button press: 30 times; hand movement across device or screen: 1 time; hand movements between screen and other parts of the device: 0 times.

4.3 show schedule and check some information
(For example, the location of tomorrow's class)
click 'schedule' button -> slide on the screen to switch the date. (For example, switch to tomorrow only need slide to the left ones) -> click on one of the classes, and detailed information including the location of this class will be shown on the screen.
  Thus, totally 1 button press ('schedule' button), 1 slide on screen and 1 select (select the event).
  Therefore, button press: 1 time; hand movement across device or screen: 2 times; hand movements between screen and other parts of the device: 0 times.

4.4 drop a class
(For example, drop class Comp171)
click 'classes' button -> click 'view classes' button, the list of classes will shown on the screen -> select the class you want to drop (In this case, Comp171) -> click 'drop' button.
  Thus, totally 3 button presses ('classes' button, 'view classes' button and 'drop' button), 1 select (select the class).

Therefore, button press: 3 times; hand movement across device or screen: 1 times; hand movements between screen and other parts of the device: 0 times.