

USER INTERFACE SPECIFICATION

The user interface (UI), in the industrial design field of human–computer interaction, is the space where interactions between humans and machines occur. The goal of this interaction is to allow effective operation and control of the machine from the human end, whilst the machine simultaneously feeds back information that aids the operator's' decision-making process. In the instance of mobile application, it is in the form of a Graphical User Interface based on Android SDK.

The following are some user interactions with the mobile app:

1. Touch/Click : The user can touch the GUI component to express his intent if using it. For example, if the user clicks or touches the textbox, the textbox will immediately become editable. If the user touches a drop down list, the options in the list will appear and the user can click on the desired one. Similarly, if the user touches a button, the functionality of the button will be executed.
2. Text Input: If the user touches the textbox, an on-screen/physical keyboard will appear which will enable the user to enter text into it.

5.1 Preliminary Design

The initial design is designated as follows:

- **Login and Authentication:** When the user opens the application, he/she will see two buttons - login and register. If the user already has an account, he/she can login with the existing username and password which they already have and then hit the “Login” button. These details will be compared with the data stored in the database. If there is a match, the user will be authenticated and directed to the home page. If the user is new, he/she can create a new account by pressing the “Register” button. Once it is pressed, the user

will be asked to enter his/her personal details. The details entered in this page will be stored in a database once the user hits the “Submit” button.

- **Main Menu:** The main menu has different buttons like food, sleep, exercise and view statistics for the user to select. Once the user, selects an option he/she will be directed to the respective page. On the top-left corner, the image button will display a drop down list when it is clicked. The drop down list will have options which will allow the user to manage his/her profile and an option to logout. The user can log out anytime by clicking on the “logout” button.
- **Manage Account:** The user can manage his/her account by clicking on the image button on the top-left corner of the application and then select “Manage Profile”. This includes updating or adding a profile picture, height, weight, age and current location of the user.
- **Sleep:** On clicking on the sleep button in the main menu, the user will be directed to a page concerning the sleeping habits of the user. This page has two buttons - Start and Stop. When the user is ready to go to sleep, he/she can activate the timer by click on the “Start” button. Once the user gets up, he/she should press the stop button to stop the timer. The user can view his sleep statistics by clicking on “View Statistics” from the main menu.
- **Smart Alarm:** A smart alarm will set the wake-up time for the user based on his physical activity for that particular day and the type of food the user consumes. The user can either snooze or dismiss the alarm. Snooze will trigger the alarm again in ten minutes. Dismiss will shut down the alarm.
- **Food intake:** When the user clicks on the food button in the main menu, he/she will be directed to a page where there is an option to enter the type of food and quantity consumed by the user. The type of food can be chosen from a drop down list box and

quantity can be entered in the textbox. Once the user hits the “Submit” button, these details get saved in the database.

- **Starting an exercise:** As soon as the user begins to work out, the user can hit the “Start” button. The application will simultaneously be monitoring, recording and displaying the duration, miles covered and calories burnt while the user exercises. The exercise statistics can also be viewed by clicking on the “View Statistics” button in the main menu.
- **View Statistics:** On clicking this button, the user will be directed to a screen which will provide suggestions and display recorded results. This page will show the number of hours the user has slept, the anomaly detected and the suggestions based on anomaly detected. This will also display the number of calories burnt during workout and the number of calories gained during food intake for that particular day. The user can log out anytime by clicking on the “logout” button.

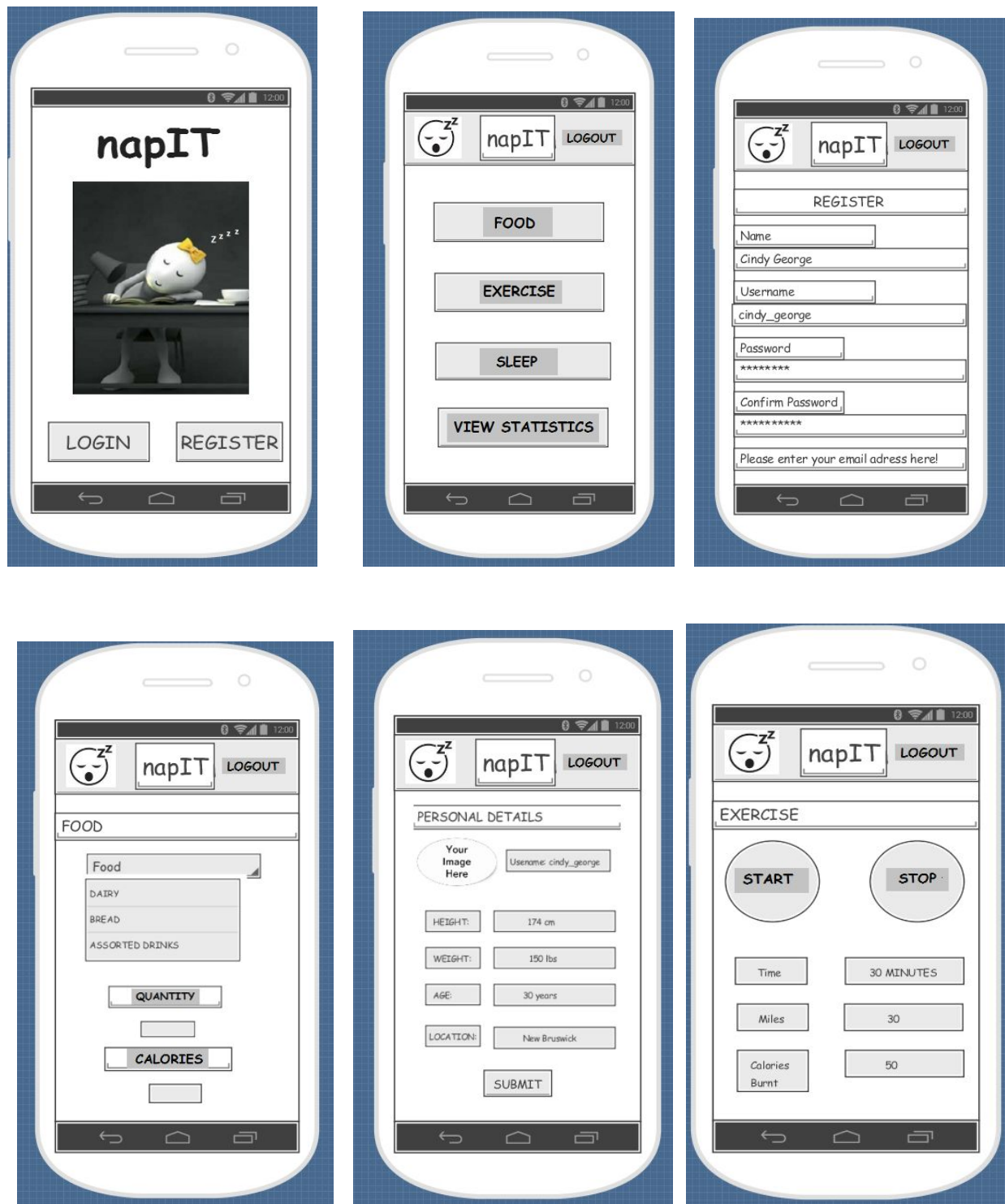


Fig 16: Mock-ups: Login, Main Menu, Register, Food, Personal Details, Exercise

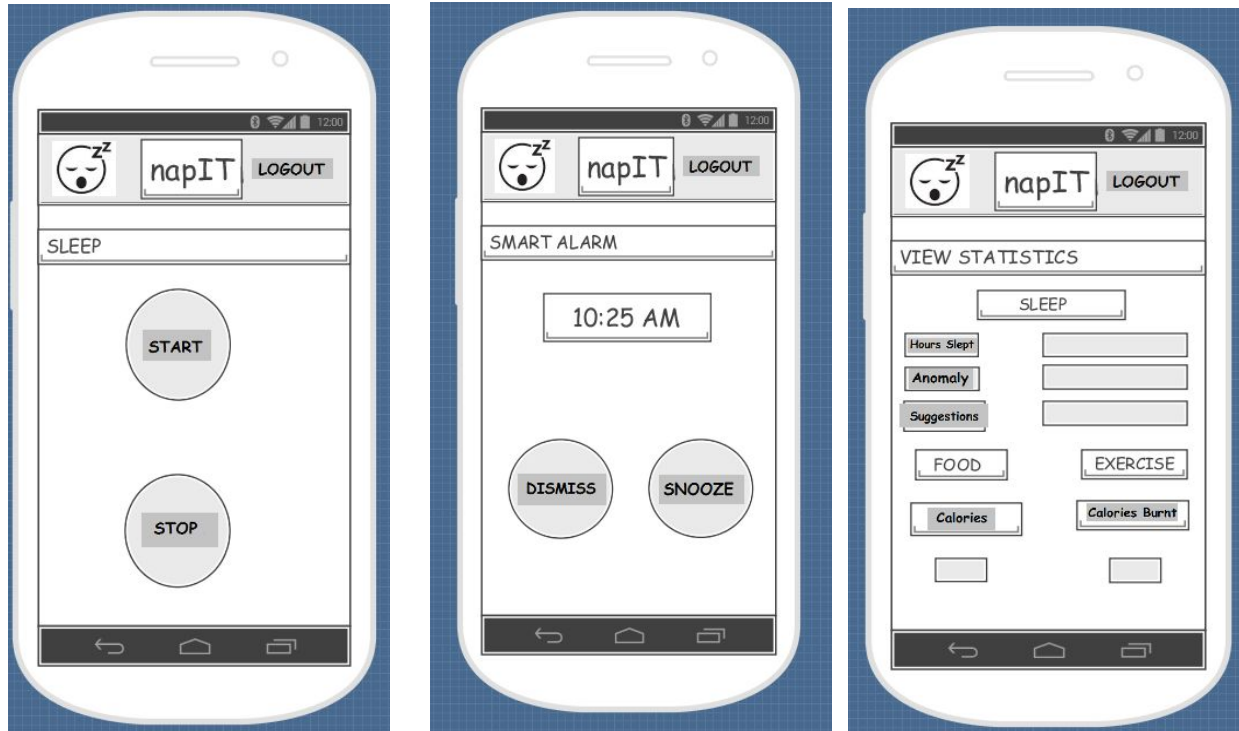


Fig 17: Mock-ups: Sleep, Smart Alarm, View-Statistics

5.2 User Effort Estimation

This section describes the number of mouse clicks or keystrokes the user has to make to navigate through the different windows in the mobile application and find the way to the context where the user can actually enter data.

1. Start Page

- Navigation - 1 mouse click
 - Click button “LOGIN” or button “REGISTER”.

2. Registration

- Navigation - 2 mouse clicks
 - Click on the “Register” button in start page.
 - Finally click on the “Submit” button.
- Data Entry - 1 mouse click and 22 key presses minimum.
 - Click on the ‘Name’ field text box.
 - Enter the name(keys>1)
 - Press tab to move to the next field(key=1)
 - Enter user name(keys>1)
 - Press tab to move to the next field(key=1)
 - Enter password(keys>3)
 - Press tab to move to the next field(key=1)
 - Enter the password again(keys>3)
 - Press tab to move to the next field(key=1)
 - Enter email address(keys>10)

3. Login

- Navigation - 1 mouse click
 - Click on the “LOGIN” button in start page.
- Data Entry - 1 mouse click and 6 key presses minimum.

- Click on the 'Username field text box.
- Enter the name(keys>1)
- Press tab to move to the next field(key=1)
- Enter password(keys>3)
- Press tab to move to the next field(key=1)

4. Main Menu

- Navigation - 1 mouse clicks
 - Click on any of the 4 buttons - "Sleep", "Exercise", "Sleep", "View Statistics".

5. Sleep

- Navigation - 3 mouse clicks
 - Click on the "Sleep" button in main menu.
 - Click on the "Start" button in the sleep page.
 - After waking up, click on the "Stop" button in the sleep page.

6. Exercise

- Navigation - 3 mouse clicks
 - Click on the "Exercise" button in main menu.
 - Click on the "Start" button in the sleep page.
 - After completing the work out, click on the "Stop" button in the sleep page.

7. Food

- Navigation - 2 mouse clicks
 - Click on the "Food" button in main menu.
 - Click on the "Submit" button after completing data entry.
- Data Entry - 3 mouse clicks and one keypress minimum.
 - Click on the Drop down List and then click on the food type.

- Click on the “Quantity” field.
- Enter the quantity(keys>1)

8. View Statistics

- Navigation - 1 mouse click
 - Click on the “View Statistics” button in main menu.

9. Manage Profile

- Navigation - 3 mouse clicks
 - Click on the ‘Settings’ (top left corner) button in the main menu.
 - Then click on the “Manage Profile” option.
 - Finally click on the “Submit” button after entering data.
- Data Entry - 3 mouse clicks and 12 key presses minimum.
 - Click on the “Height” field.
 - Enter the height(keys>4)
 - Press tab to move to the next field(key=1)
 - Enter weight(keys>3)
 - Press tab to move to the next field(key=1)
 - Enter age(keys=2)
 - Press tab to move to the next field(key=1)
 - Enter current location.