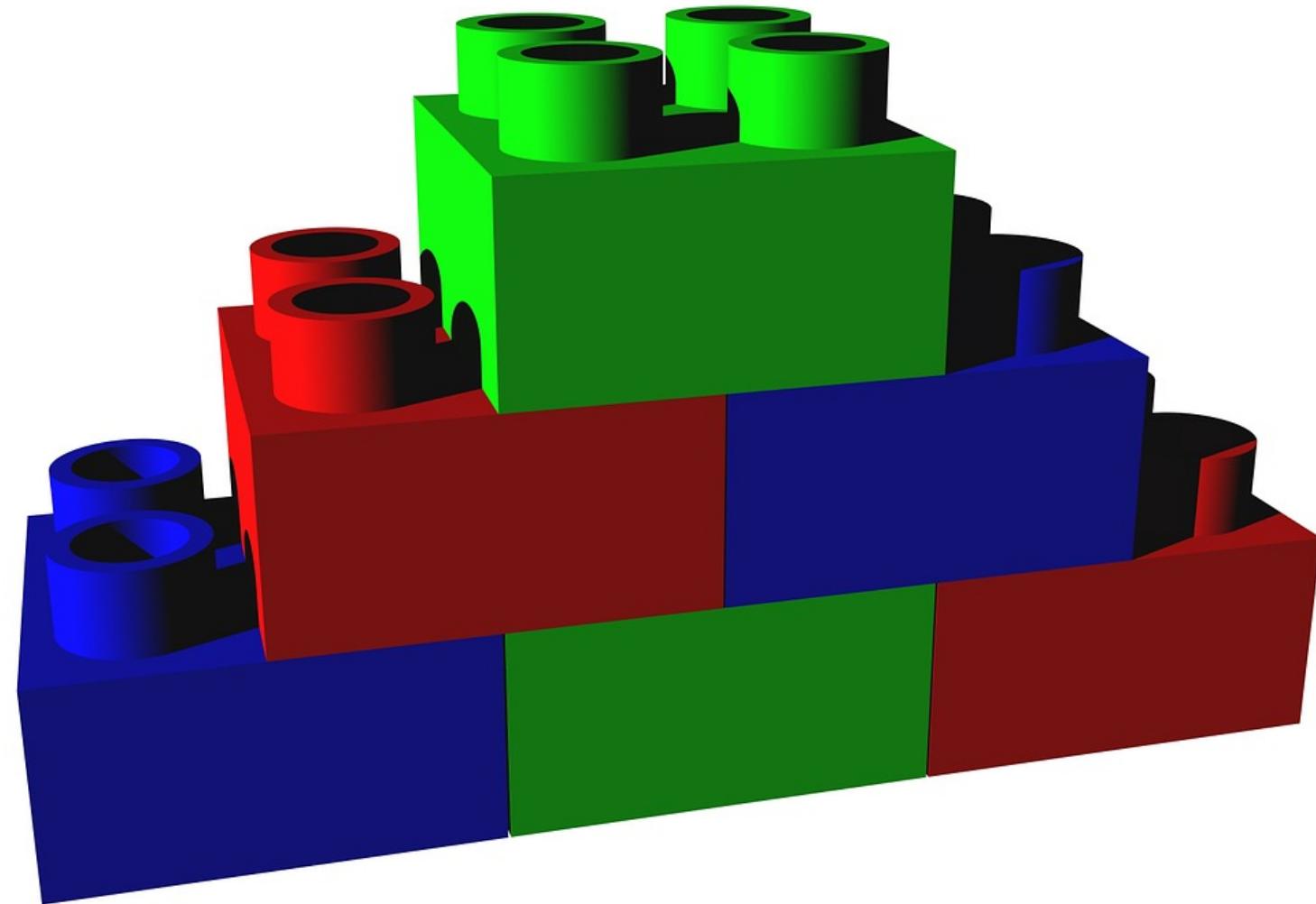


# Elements of User Interaction: Data Input

**UX506**

*Predrag “Pedja” Klasnja*



<https://pixabay.com/p-685015>

**Input**



**Output**

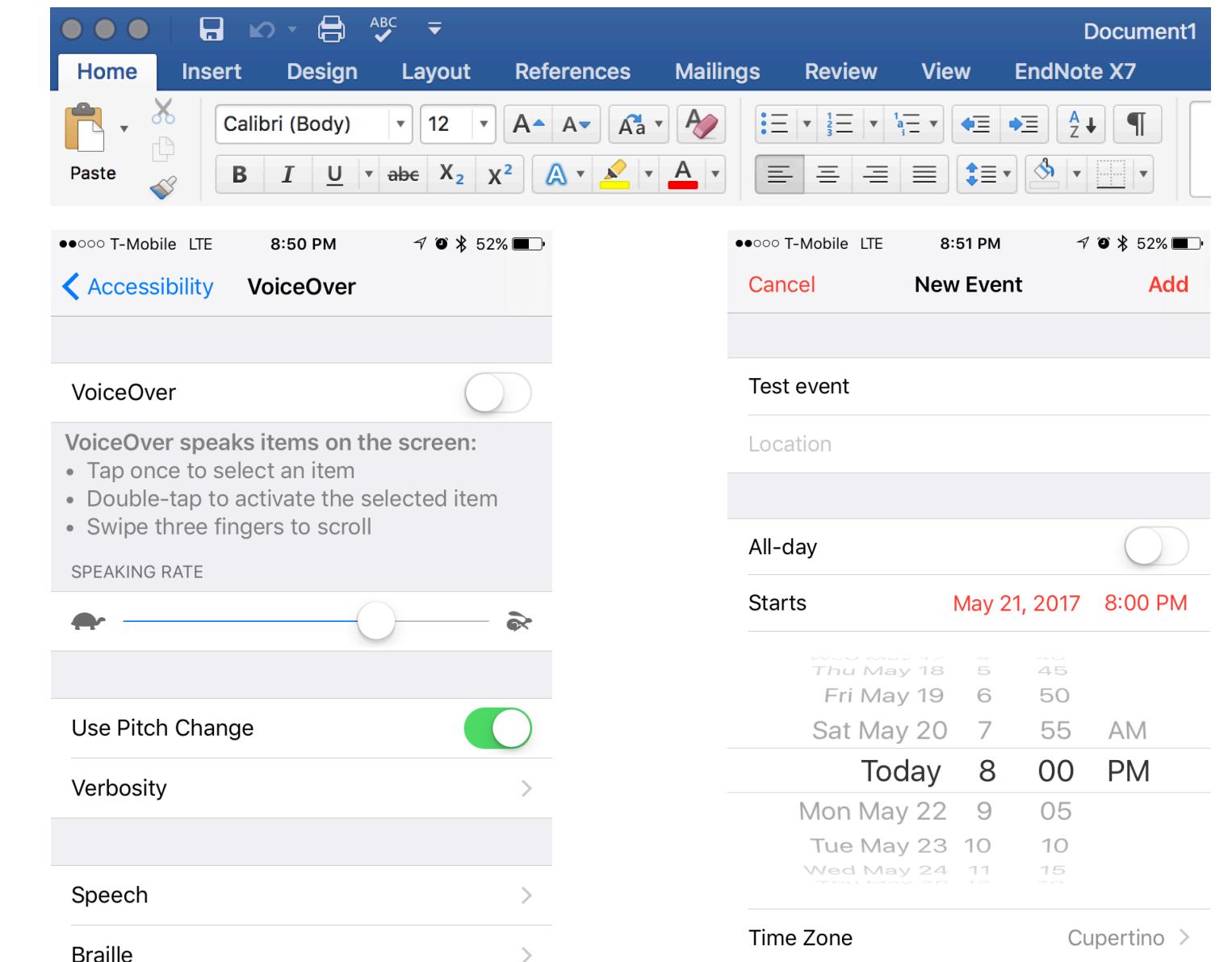
<https://pixabay.com/en/computers-keys-rays-1420200/>  
<https://pixabay.com/en/cogwheel-gear-gearwheel-cog-145804/>



**Input:** Data that needs to be entered into the program to enable it to perform desired tasks.

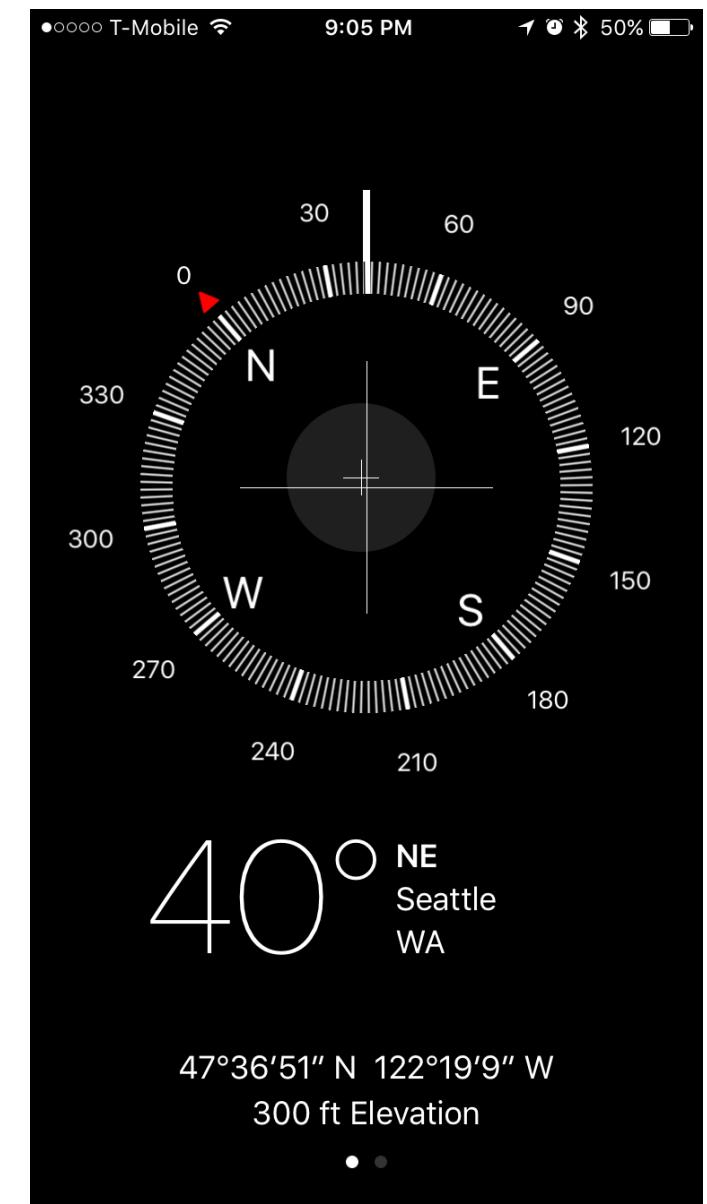
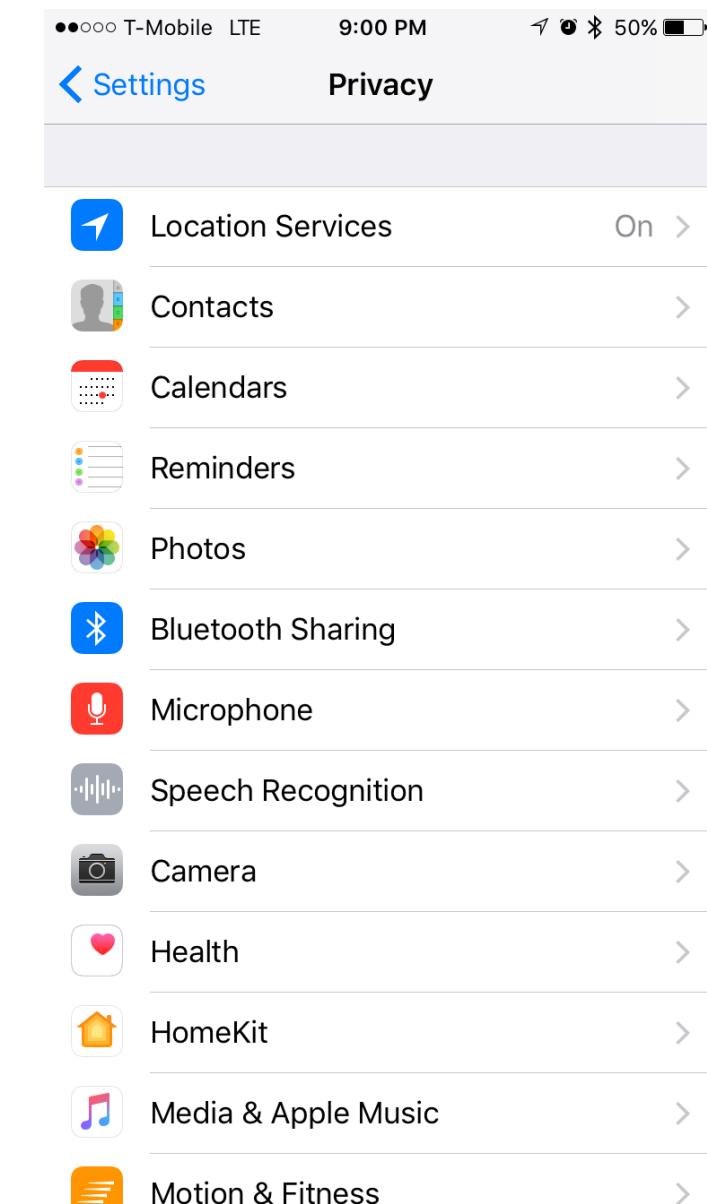
# User-Entered Input

- **GUI elements**
  - Buttons
  - Icons
  - Menus
  - Switches
- **Self-report data**
  - Free-text
  - Structured forms (e.g., checkboxes, sliders, date picker)
  - Voice input
  - Taking a picture



# Passive Input

- **Sensor readings**
  - Location
  - Camera
  - Microphone
  - Accelerometer
  - ...
- **Data from other applications**
  - Calendar
  - Pictures
  - Health data
  - ...
- **Information from the internet**
  - Web app data (Fitbit, Yelp, etc.)
  - Weather
  - RSS feeds
  - ...

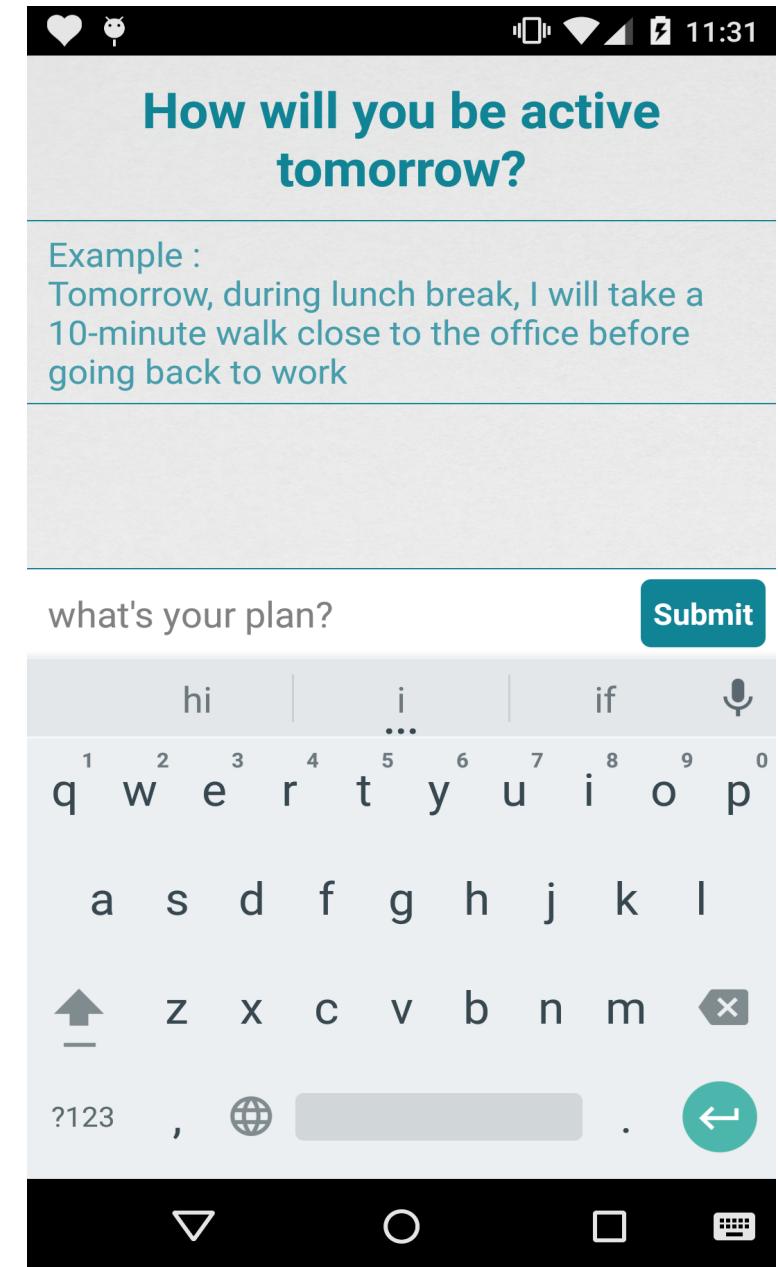
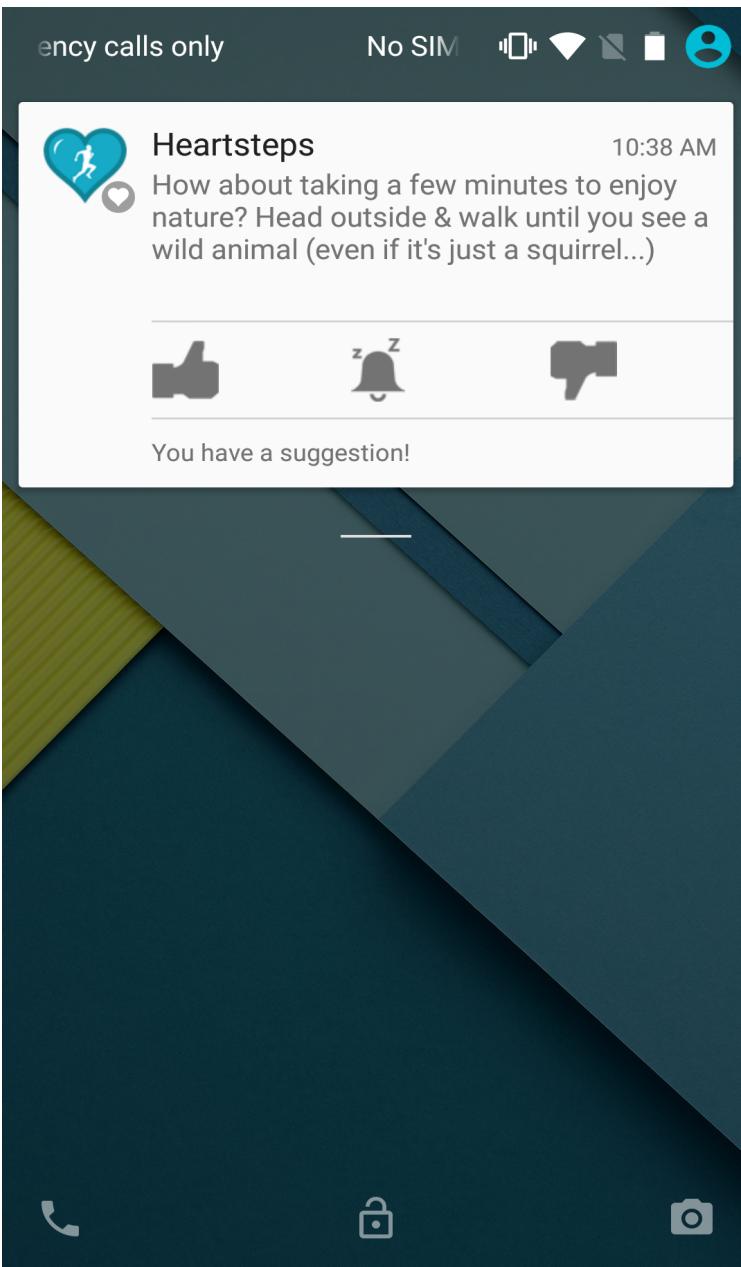
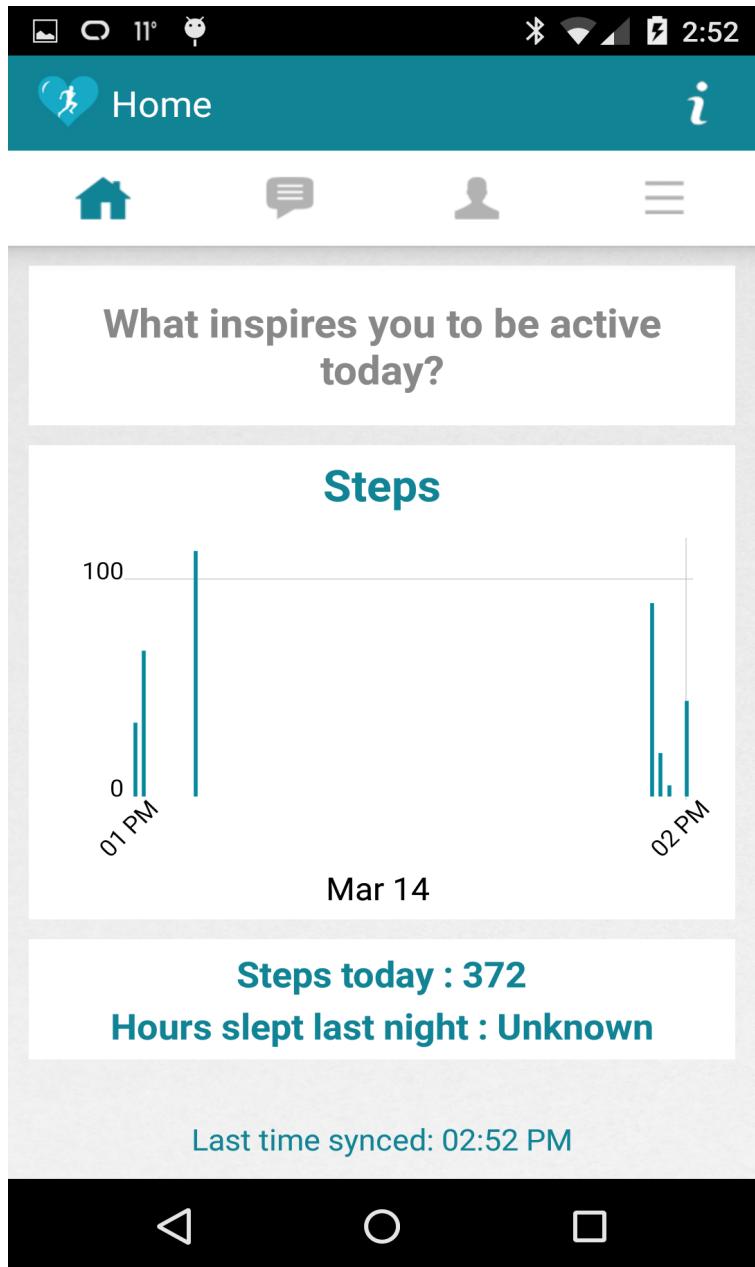


# Input Design Considerations

- What granularity of data is needed?
- When / how often is the data needed?
- In what state is the user when input is needed? (e.g., driving? in a loud environment?)
- What is the value vs. burden of obtaining the data?

# Elements of User Interaction: Data Input

Wireframe to  
Prototype



# Steps

- Data type: User's steps
- Input modality: sensor (Jawbone Up)
- Frequency: continuous
- Granularity: minute-level
- Burden: charging, comfort, remembering to wear



<https://www.flickr.com/photos/djkeino/8667722768>

# Location

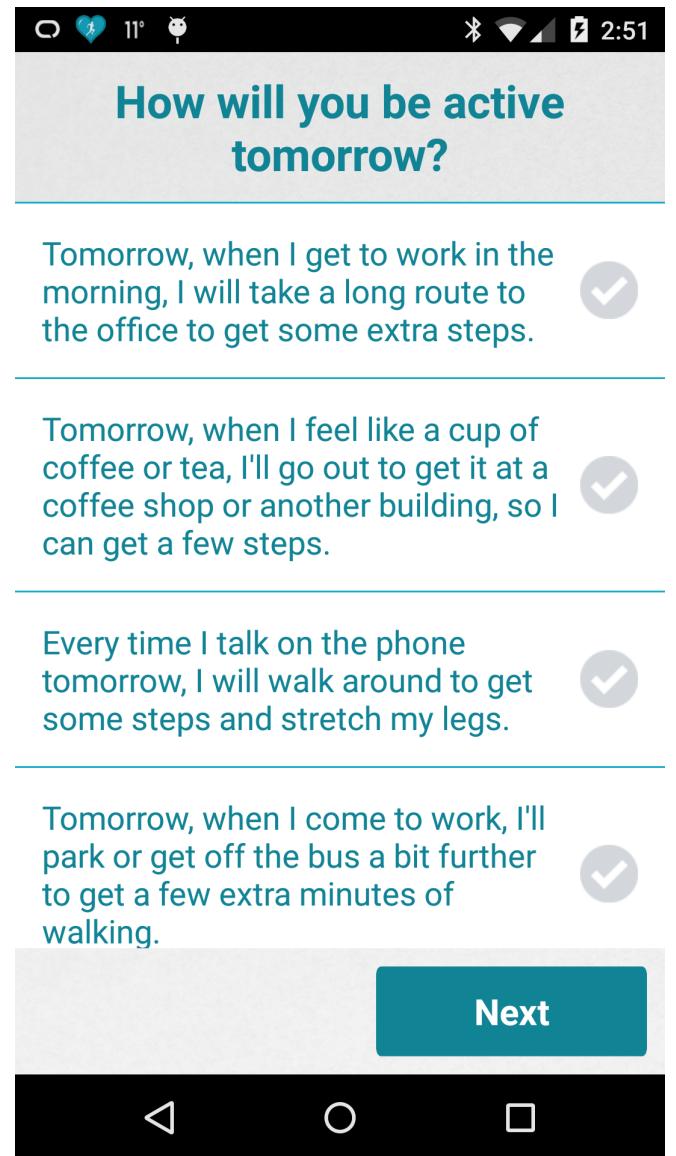
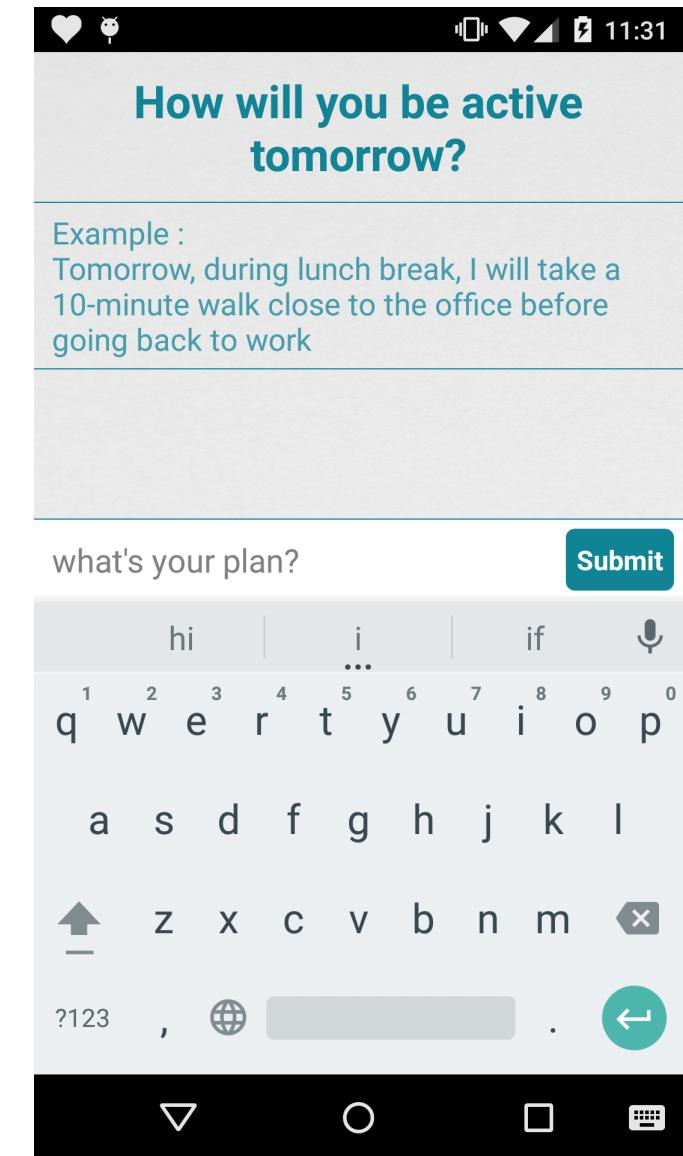
- Data type: User's current location
- Input modality: sensor (GPS)
- Frequency: at suggestion times
- Granularity: home/work/other
- Burden: privacy, battery life



<https://pixabay.com/en/gps-navigation-garmin-device-304419/>

# Activity Plan

- Data type: Plan for being active
- Input modality: User-entered text
  - Free-text
  - Selecting from a list
- Frequency: daily
- Granularity: user-determined
- Burden: cognitive effort, typing on the phone keyboard



# Consequences of Input Design

- Format, granularity, and frequency of input set limits on what application can do.
  - Automatic reminders difficult for free-text plans
- User experience greatly affected by input design.
  - Risk of frustration, annoyance, privacy concerns
  - Input can lead to engagement
  - Mismatch between user state and input modality problematic