**ForecastSend Documentation**

* **“Text/String” Part**
  + Fill in Parameters
    - City/Region
      * San Francisco Bay Area
        + **Affects Temperature Parameter: “***The high/low will be 57/50F in SF and 61/50F in Oakland.”*
      * Davis/Sacramento
      * Los Angeles Area
        + **Affects Temperature Parameter** by taking account temperature ranges near the coast and the inland valleys.
      * Tucson
    - Storm type
      * Weak/Moderate/Strong Storm
      * Monsoonal Moisture
      * Tropical Remnants
      * Tropical Storm
    - Weather type
      * Light/Moderate/Heavy Rain
      * Thunderstorms
      * Fog and drizzle
      * Snow
      * Rain mixed with snow
      * **Are there strong winds? Ask user to indicate**
    - Onset of Precipitation
      * Give start and end time
    - Probability of Precipitation
    - Estimated rainfall amount
    - Temperature (High/Low)
      * **Note the region**
    - Wind speed *(not applicable for every forecast)*
  + Write Closing Message *(optional)*
    - Ex: *Next week a strong storm will affect the region, bringing heavy rain and strong winds. Stay tuned!*
  + Provide Default Forecast and Allow User to Edit
    - For example, if user chooses these parameters: **LA Area, moderate storm, moderate rain with wind, rain start at 9 am and end at 7 pm, 90% chance of rain, 0.50-1 inch of rain, coastal high/lows of 62-66/55-59F and valley high/lows of 61-65/50-55F, winds 15-25 mph**
      * *Greetings! A storm will bring rain and wind to SoCal tomorrow. Rain will begin at 9 am and end at 7 pm.*
      * *Chance of rain 90%. Rainfall between 0.50 and 1 inch. The high/low will be 62-66/55-59F near the coast and 61-65/50-55F in the inland valley. Windy—winds 15-25 mph.*
      * *Next week a strong storm will affect the region, bringing heavy rain and strong winds. Stay tuned!*
      * ***CHARACTER COUNT: 370 (WITHIN 480 CHARACTER LIMIT)***
    - Warn user if character count of forecast exceeds 480 (3 text messages).
  + Prompt User to Review Forecast **(DOUBLE CHECK)** for submission
    - Once forecast has been created, save it onto a text file.
    - The “SMS” program will open the text file and send it to cellphone numbers in the database.
      * Check and display the text (count the characters) then prompt user for confirmation.
* **“SMS” Part**
  + When user submits forecast, the program sends the text via SMS messaging to cellphone numbers in the database
  + Use the Twilio API to send SMS messages:
    - <https://www.twilio.com/sms/api>
  + For C++ help:
    - <https://www.twilio.com/blog/2010/12/new-c-twilio-api-wrapper-by-laurent-luce.html>
  + TwiML:
    - <https://www.twilio.com/docs/api/twiml>
  + Set up server and deploy to external URL:
    - Web Server:
      * <https://github.com/eidheim/Simple-Web-Server>
    - <https://www.twilio.com/docs/quickstart/python/devenvironment>
    - <https://www.twilio.com/docs/quickstart/php/android-client/setup>
  + Building a Web Server
    - <https://ruslanspivak.com/lsbaws-part1/>
  + More Info:
    - Basically create a web server and deploy it to an external URL
    - On the web server you write the TwiML instructions
    - Once that's done simply input the URL under "ForecastSend" on Twilio's website
  + For searching text files
    - <http://stackoverflow.com/questions/12463750/c-searching-text-file-for-a-particular-string-and-returning-the-line-number-wh>
    - <http://stackoverflow.com/questions/4940032/search-for-string-in-txt-file-python>
    - Parsing strings
      * <http://stackoverflow.com/questions/14265581/parse-split-a-string-in-c-using-string-delimiter-standard-c>
    - Array of String
      * [https://www.quora.com/How-can-I-declare-array-of-strings-C++](https://www.quora.com/How-can-I-declare-array-of-strings-C)
* **User Interface**
  + Look for simple and straight-forward UI that allows user to input information and review the forecast most efficiently
  + ***MORE LATER ONCE RESEARCH HAS BEEN DONE***