**Introduction**

The purpose of the project is to take a “dumb” phone and create an auxiliary program that will serve to mimic some features of the modern smartphone. The dumb phone must be capable of SMS messages. Each phone number in the network is assigned an email address with the username being the phone number and the domain being determined by the network provider. This email address can be used to receive SMTP messages as text messages on the phone.

**Overall Description**

The general setup for this project is as follows. The main program for this project is to be written in Python 3. A Gmail account will be set up which will receive SMS/SMTP messages from the dumb phone. The program will log into this account via SMTP and also via IMAP. Emails will be retrieved via IMAP and the commands will be processed. Any information and texts/emails that need to be sent out will also be handled from this email account.

**Features**

Email Notifications

One desired feature of this new server will be to send text message notifications to the phone number. The intended implementation is to obtain an IMAP connection with the email address that notifications are intended to be created for. This email will be read into the server and the subject line extracted. This subject line will then be concatenated onto a string which reads: Email Alert. The server will then instantiate an SMTP connection to the server email address and send an email with this string as the body of the email.

Emoji Translation

Another desired feature of this server will be to take any emoji data that is sent to the phone and cannot be displayed properly and to turn it onto characters that can be displayed properly. The ultimate goal is to be able to issue the command “demoji” followed by the text message that contains emojis and send the entire text message to the server email account. This email will then be taken by the server program and all emojis will be replaced with plain text. The new string will then be embodied in an email and sent back to the phone.

**General Program Structure**

The server program will consist of 3 main classes and also several module classes. There will be a MailAccessor class which will handle all IMAP and SMTP connections and operations involved with these connections. There will also be a SmartServer class. This class will perform tasks such as general command structure and it will contain the functions for all of the commands. The third major class is a InformationLogger class which will involve logging to files and contain information relating to errors. All module classes will contain the necessary functions and member variables to complete the tasks that they are designed to do. For example, the Emoji module class will contain a member dictionary which will be keyed by the decimal representation of the Unicode code point. The value for this dictionary will by default be the name assigned by the Unicode database. Functions for this include the handling of any new emojis that get sent to the server. Functions will also include retrieving the plain text data from the dictionary given a key and also retrieving the Unicode code point give the associated plain text value. A general diagram of this project is provided as follows:

ServerEmailAccount

Phone

Module

EmojiCoder

Has-A

IMAP

IMAP/SMTP

Email

SMTP/SMS

SmartServer

Logger

MailAccessor

**Individual Class Descriptions:**

MailAccessor

This class will provide all the functionality for accessing email accounts whether it be IMAP or SMTP. It will contain a list of known email connections for email notifications and also a member variable for the email connection to retrieve commands.

SmartServer

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SmartInterfaceLogger

This class will contain a logger class that will be connected to a file for writing purposes. It will also contain a list of formatted errors which have occurred.

EmojiCoder

This class will handle all things related to Emojis. It will contain a member dictionary which will be loaded from a file. A function will be define that