V.1

```
def main():
        myWin = GraphWin("Word Cloud", 700, 700)
        background = Rectangle(Point(0,0),Point(600,600))
        background.setFill('sky blue')
        background.draw(myWin)
        print_intro()
        file = use_file()
        stopwords = process_stopwords()
        clean_file = remove_junk(Stopwords, File)
        analysis()
        end_menu()
```

V.2

```
from graphics import *
from random import *
def main():
        myWin = GraphWin("Word Cloud", 700, 700)
        background = Rectangle(Point(0,0),Point(600,600))
        background.setFill('sky blue')
        background.draw(myWin)
        print_intro()
        file = use_file()
        stopwords = process_stopwords()
        clean_file = remove_junk(Stopwords, File)
        analysis()
        end_menu()
# draw myWin and display a nice opening screen with intro and instructions
def print_intro(myWin):
# determine what file to use based on users input (on myWin with text/entry objects ect.)
def use_file(myWin):
        return contents
# open stopwords file and use .split so its a list of each stopword
def process_stopwords():
        return stopwords
# remove all the special characters from the file then the split words from users file into a list
# and loop through it to remove the stopwords
def remove_junk(Stopwords, File):
        return counts
# for formatting (from zelle chapter 11.7.3)
def byFreq(pair):
        return pair[1]
# display formatted analysis of n most frequent words and draw them on myWin randomly
def analysis(counts,myWin):
# give option to run program again or exit
def end_menu():
```

V.3

```
from graphics import *
from random import *
def main():
        myWin = GraphWin("Word Cloud", 700, 700)
        background = Rectangle(Point(0,0),Point(600,600))
        background.setFill('sky blue')
        background.draw(myWin)
        print_intro()
        file = use_file()
        stopwords = process_stopwords()
        clean_file = remove_junk(Stopwords, File)
        analysis()
        end_menu()
def print_intro():
  # draw myWin and display a nice opening screen with intro and instructions
  # welcome text
  welcome = Text(Point(180, 120), "Welcome to the word cloud")
  welcome.setFace("arial")
  welcome.setSize(25)
  welcome.setTextColor("white")
  welcome.setStyle("bold")
  welcome.draw(myWin)
  # instructions
  prompt = Text(Point(115, 160), "Instructions: Click the screen to continue")
  prompt.setFace("arial")
  prompt.setSize(10)
  prompt.setTextColor("orange")
  prompt.setStyle("bold")
  prompt.draw(myWin)
          myWin.getMouse()
          welcome.undraw()
          prompt.setTextColor("white")
          prompt.setFace("courier")
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```
        prompt.move(235, 180)
        background.setFill("green")
        # description about
        about = Text(Point(350, 300), "This is a program built to examine a text file in order to
determine the most frequently used words. "
                                      "\nThen the words are shown on the screen as s word cloud. You
can also choose how many words to display")
        about.setFace("courier")
        about.setSize(10)
        about.setTextColor("white")
        about.setStyle("bold")
        about.draw(myWin)
        # get mouse click before moving on to send off
        myWin.getMouse()
        prompt.undraw()
        about.undraw()
        background.setFill("blue")
        sendoff = Text(Point(350, 120), "Thank you for trying out this program! \nClick the
screen one more time to begin.")
        sendoff.setFace("arial")
        sendoff.setSize(22)
        sendoff.setStyle("bold")
        sendoff.setTextColor("orange")
        sendoff.draw(myWin)
        # undraw everything and send user to home screen
        myWin.getMouse()
        sendoff.undraw()
        about.undraw()
        prompt.undraw()
        background.setFill("purple")
# determine what file to use based on users input (on myWin with text/entry objects ect.)
def use_file():
  title = Text(Point(350, 100), 'Choose a File')
  title.setFace("arial")
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```
title.setSize(30)
title.setStyle("bold")
title.setTextColor("black")
title.draw(myWin)
filename = Entry(Point(350, 220), 20)
filename.setFill("black")
filename.setText("ex: beemovie.txt")
filename.setTextColor("white")
filename.setFace("arial")
filename.setStyle("bold")
filename.draw(myWin)
userkey = Entry(Point(350, 310), 7)
userkey.setFill("black")
userkey.setText('')
userkey.setTextColor("white")
userkey.setFace("arial")
userkey.setStyle("bold")
userkey.draw(myWin)
filename_msg = Text(Point(350, 175), "Type your file name below:")
filename_msg.setFace("arial")
filename_msg.setSize(15)
filename_msg.setStyle("bold")
filename_msg.setTextColor("white")
filename_msg.draw(myWin)

key_msg = Text(Point(350, 265), "Type the number of frequent words you want to find below:")
key_msg.setFace("arial")
key_msg.setSize(15)
key_msg.setStyle("bold")
key_msg.setTextColor("white")
key_msg.draw(myWin)
instruct = Text(Point(350, 480), "Click this text to analyze")
instruct.setFace("arial")
instruct.setSize(15)
```

```
    instruct.setStyle("bold")
    instruct.setTextColor("orange")
    instruct.draw(myWin)
    myWin.getMouse()
    title.undraw()
    filename.undraw()
    userkey.undraw()
    filename_msg.undraw()
    key_msg.undraw()
    instruct.undraw()
    background.setFill("grey")
    # key = text but it needs to be an integer
    keytext = userkey.getText()
    key = int(keytext)
    # filenameText stores the story the user wants to analize using the getText() function
    filenametext = filename.getText()
    with open(filenametext, "r") as text:
        # the wholetext is stored as contents by using "text.read()"
        contents = text.read()
        contents = contents.lower()
    return contents, key
# for formatting (from zelle chapter 11.7.3)
def byfreq(pair):
    return pair[1]
def remove_junk(contents, key):
    # remove all the special characters from the file then the split words from users file into a list
and loop
    # through it to remove the stopwords then display an analysis of the most frequent words
    # get the sequence of words from the file
    for ch in "!'\"#$%&()*+,-./:;<=>?@[\\]^_{|}~":
        contents = contents.replace(ch, '')
    words = contents.split()
    stopwords = open('stopwords.txt', "r").read()
    stopwords = stopwords.lower()
```

```
  stopwords = stopwords.split()
  # create dictionary of word counts
  counts = {}
  for w in words:
     if str(w) not in stopwords:
        counts[w] = counts.get(w, 0) + 1
  items = list(counts.items())
  items.sort()
  items.sort(key=byfreq, reverse=True)
  label = Text(Point(180, 40), 'Most frequent words and the number of their occurrences')
  label.setFace("arial")
  label.draw(myWin)
  output = Text(Point(500, 350), '')
  continuemsg = Text(Point(165, 60), "Instructions: Click the screen to display the word cloud\n
Then click the screen again when you are ready to continue")
  continuemsg.draw(myWin)
  anal = ''
  newline = '\n'
  for i in range(key):
     word, count = items[i]
     result = '{0:<15}{1:>5}'.format(word, count)
     anal = anal + result + newline
  output.setText(anal)
  output.setTextColor(color_rgb(randint(0,255),randint(0,255),randint(0,255)))
  output.draw(myWin)
  myWin.getMouse()
  continuemsg.undraw()
  label.undraw()
  output.undraw()
  background.setFill("white")
  anal_list = anal.split()

  frequent_words = []
  for words in anal_list:
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```
        frequent_words.append(words)
    for i in range(key):
        frequent_words.remove(frequent_words[i+1])
    return frequent_words
def wordcloud(frequent_words):
    # display formatted analysis of n most frequent words and draw them on myWin randomly
    for i in frequent_words:
        print(i)
        word = Text(Point(randint(50,650), randint(50,650)), i)
        word.draw(myWin)
    myWin.getMouse()
    #myWin.close()
def end_menu():
# give option to run program again or exit
    newWin = GraphWin('Word Cloud', 700, 700)
    background = Rectangle(Point(0, 0), Point(700, 700))
    background.setFill('sky blue')
    background.draw(newWin)
    choice_msg = Text(Point(350, 100),"Do you want to run this program again? \n\nType: Y to
jump to the beginning or type N to finish up:")
       choiceBox = Entry(Point(350, 150), 2)
      exit_message = Text(Point(350, 350), 'Thank you for trying my program!\n Click the screen to
close program.\n Have a wonderful day :)')
    instructions = Text(Point(350, 350),'Click the screen to once you type your response')
    newWin.getMouse()
    instructions.undraw()
    choiceBox.undraw()
# choice gets the text from entry ans is used to determine whether to decode or encode
    choice = choiceBox.getText()
    if choice == 'y' or choice == 'Y':
        newWin.close()
        background = Rectangle(Point(0, 0), Point(700, 700))
        background.setFill('sky blue')
        background.draw(myWin)
```

```
        repeat()
    elif choice == 'n' or choice =='N':
        choice_msg.undraw()
        exit_message.draw(newWin)
        newWin.getMouse()
        myWin.close()
        newWin.close()
def repeat():
    print_intro()
    contents, key = use_file()
    frequent_words = remove_junk(contents, key)
    wordcloud(frequent_words)
    end_menu()
main()
```