

## Assignment 2: Project Plan

CS 161

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Date: April 18, 2018

### 2.a Min-Max

#### Pseudocode:

```
declare "ints" string for storing integers
declare "max", "min" and "numInts" int-variables

prompt user to enter a number of intergers
capture user input and intialize to "numInts" variable

Initialize "max" and "min" to zero.
loop over integers from 1 to "numInts"
    declare "integer" int
    prompt user to enter number
    initialize "integer" to value user enters

    if "integer" is greater than "max"
        set "max" to "integer"
    else if "integer" is less than "min"
        set "min" to "integer"
    else
        do nothing

once loop is finished , display max and min
```

#### Test Plan

test	expected output
user enters all 1's (or integers of same value)	output max = 1, min = 1
user enters 1,2,3,4,5	output max = 5, min = 1
user enters 100, 101, 200, 1000	output max = 1000, min = 100
user enters 10, 5, 0, -5, -10	output max = 10, min = -10
user only enters 1 integer, say 10	output max = 10, min = 10

### 2.b File Adder

#### Pseudocode

```
declare "fileName" string variable
prompt user to enter a file name
intialize "fileName" to user's value
check to see if "fileName" is actually a file
    if it isn't
        print out "Not a file"
    else, if it is a file
        print out "Found file"
```

```

Open file
declare "numLines" int variable
declare "sum" variable and initialize to 0
set the "numLines" to the number of lines in file

if the file is empty
    print "empty file" and quit program
otherwise,
    continue

for each line from 0 to "numLines"
    read in line and cast to int variable "lineNum"
    add "lineNum" to "sum" variable

Close the file
Create a file called "sum.txt" and open it
write the value "sum" to the file
close "sum.txt"

```

### Test plan

test (input)	expected output
empty file	create empty sum file
file with single integer 1	write 1 to sum.txt
file with 1,2,3,4,5	write 15 to sum.txt
file with 10, 100, 1000	write 1110 to sum.txt
file with 10, 5, 0, -5, -20	write -10 to sum.txt

## 2.c Num Guess

### Pseudocode

```

declare "userNum", "playerGuess", and "guessCount" ints
prompt user to enter an integer for player to guess
initialize "userNum" to this value

declare boolean "isCorrect" and initialize to false
initialize "guessCount" to 0

begin loop (probably a do-while)
    prompt player to input a guess
    initialize "playerGuess" to player's value

    if the guess is too low, print out "Too low—try again"
    if the guess is too high, print out "Too high—try again"
    otherwise, if the guess is correct
        change "isCorrect" to true

    increment "guessCount"
    check if "isCorrect" is true. If it is, exit the loop

```

print out "you guessed it in guessCount tries"

### Test Plan

test (input)	expected output
val: 1, guess: 1	1 try
val: 1, guess: 10, -10, 1	too high, too low, 3 tries
val: -10, guess: 100, 10, 0, -1, -10	too high, too high ..., 5 tries
val: 1000, guess: 1, 2, 100, 10000, 1000	too low, too low, too low, too high, 5 tries