

CSc 3320: Systems Programming

Spring 2021

Homework

4: Total points 100

Submission instructions:

1. Create a Google doc for each homework assignment submission. 2. Start your responses from page 2 of the document and copy these instructions on page 1.
3. Fill in your name, campus ID and panther # in the fields provided. If this information is missing in your document TWO POINTS WILL BE DEDUCTED per submission.
4. Keep this page 1 intact on all your submissions. If this *submissions instructions* page is missing in your submission TWO POINTS WILL BE DEDUCTED per submission.
5. Each homework will typically have 2-3 PARTS, where each PART focuses on specific topic(s).
6. Start your responses to each PART on a new page.
7. If you are being asked to write code copy the code into a separate txt file and submit that as well.
8. If you are being asked to test code or run specific commands or scripts, provide the evidence of your outputs through a screenshot and copy the same into the document.
9. Upon completion, download a .PDF version of the document and submit the same.

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ALL PROGRAMS MUST BE COMMENTED. YOUR SOLUTION WILL NOT BE ACCEPTED IF THERE ARE NO COMMENTS IN YOUR SCRIPT. Also note that the comments MUST be useful and not be random.

PART 1: 40pts

Must incorporate use of Functions and Pointers

1. checkCountPasswd.c

```
rtognoni1@gsuad.gsu.edu@snowball:~/HW4
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
BeepbeepImASheep!
passlen: 10
The password is safe! Deduction: 0
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
beepbeep
passlen: 8
The password is safe! Deduction: 10
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
asd
passlen: 3
The password is unsafe! Please reset. Deduction: 35
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
asdf
passlen: 4
The password is safe! Deduction: 30
[rtognoni1@gsuad.gsu.edu@snowball HW4]$
```

2. checkPasswd.c

```
rtognoni1@gsuad.gsu.edu@snowball:~/HW4
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
=CruDay11
Your password is safe. It received a score of 100 out of 100.
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
aaaaaaaaaaaa
Your password is unsafe. It received a score of 40 out of 100.
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Please enter a password:
$$!$#!^@^
Your password is unsafe. It received a score of 20 out of 100.
[rtognoni1@gsuad.gsu.edu@snowball HW4]$
```

Part II : 40pts

Must incorporate the use of Functions and Pointer arrays

3. palindrome.c

```
rtognoni1@gsuad.gsu.edu@snowball:~/HW4
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Enter a word to check:
aabaa
The word you entered (aabaa) is a palindrome
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Enter a word to check:
abba
The word you entered (abba) is a palindrome
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./a.out
Enter a word to check:
cat
The word you entered (cat) is not a palindrome
[rtognoni1@gsuad.gsu.edu@snowball HW4]$
```

4. SwapVars.c (Swaps two predefined strings. Not set up for user input) String A and B can be of arbitrary length, it will only swap for the length of A; but could cause divergent results if $A > B$.

```
rtognoni1@gsuad.gsu.edu@snowball:~/HW4
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./SwapVars
Before: A: a-ABC123, B: b-321CBA
After: A: a-321CBA, B: b-ABC123
[rtognoni1@gsuad.gsu.edu@snowball HW4]$
```

Part III : 20pts

Must incorporate Functions, Pointers or PointerArrays, and Structures or Unions

5. Write a program that asks the user to enter an international dialing code and then looks it up in the `country_codes` array (see Sec 16.3 in C textbook). If it finds the code, the program should display the name of the corresponding country; if not, the program should print an error message. For demonstration purposes have at least 20 countries in your list.

(Programming Project 1 on pg412 in C textbook)

```
rtognoni1@gsuad.gsu.edu@snowball:~/HW4
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./countryLookup
Please enter a code to look up:
420
Country with code 420 found: Greenland
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./countryLookup
Please enter a code to look up:
55
Country with code 55 found: Brazil
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./countryLookup
Please enter a code to look up:
sdfdsfgfs
No country with code 0 found.
[rtognoni1@gsuad.gsu.edu@snowball HW4]$ ./countryLookup
Please enter a code to look up:
1233
No country with code 1233 found.
[rtognoni1@gsuad.gsu.edu@snowball HW4]$
```