CS1580 - Introduction to Programming Lab (FS2024)
Lab 3

Lab Objectives

In this lab, you will be implementing the following topics:

- Logical operators
- If-else branching
- For Loops

Lab Task: Is the Number Even or Odd? There's more...

Assume that the user inputs a positive number of length $n = 5$. For the given number, separate the digits and print them in separate lines. BUT, while printing individual digits, follow these rules:

1. RULE 1 – If the digit is even,
    a. Add 5 to it.
    b. Upon adding, if the resultant number is a 2-digit number, then print the right most digit only.
2. RULE 2 – If the digit is odd,
    a. Subtract 8 from it.
    b. Upon subtracting, if the resultant number is a negative number, square it and then print the left most digit only.

Sample input/output

```
Enter a positive number of length 5: 15465
Individual digits after rules applied:
9
1
9
9
4
```

(**NOTE**: The output is in reverse order, either way is fine)

For input 15465, the processing for each digit is as follows.

- **Digit 5**: It's odd, so subtract 8. Result is $5 - 8 = -3$. Since it's negative, square it $(-3)2 = 9$. Print 9.
- **Digit 6**: It's even, so add 5. Result is $6 + 5 = 11$. Print the rightmost digit 1
- **Digit 4**: It's even, so add 5. Result is $4 + 5 = 9$. Print 9.
- **Digit 5**: It's odd, so subtract 8. Result is $5 - 8 = -3$. Since it's negative, square it $(-3)2 = 9$. Print 9.
- **Digit 1**: It's odd, so subtract 8. Result is $1 - 8 = -7$. Since it's negative, square it $(-7)2 = 49$. Print the leftmost digit 4.

Test Cases

Test your code for the following input numbers.

1. 80005 ---> 3 5 9 9 9
2. 12345 ---> 4 5 7 5 2

Gitlab Cloning Instructions

- Open the browser and go to https://git-classes.mst.edu/. Click on the Lab3 repository named *2024-FS-303-lab3-<your_username>*
- Click on 'Clone' button and copy the HTTPS link.
- Open Putty and
    - Change the directory to SDRIVE: `cd SDRIVE`
    - Clone the repository: `git clone <copy_the_HTTPS_link_here>`
    - Change the directory to cloned repository: `cd 2024-FS-303-lab3<your_username>`
- Start coding by opening a new file in nano: `nano lab3.cpp`

Compiling Instructions

- To run your code, `fg++ *.cpp`
- To get the output, `./a.out`

Submission Instructions

Push your code to your gitlab account.

- Add all your files to the repository, `git add .`
- Commit your changes, `git commit -m "<your_message_goes_here>"`
- Push the changes, `git push`