Homework 4

Dr. Manna

CS 10 | 30 points | due: 02/08/17 @ 11:59 pm

Problem statement

1. (2 points) Please look at `w3w-string.cpp` uploaded. Your task is to go over the code, run them with different parameters and try to understand what each line of the code does. Make a list of the predefined functions used in the code and learn how they work. Please refer to Display 8.7 (page 482) of your textbook for more help. Upload a .pdf file of your list and their usage.

2. (8 points) Using the functions you learnt in Problem 1, you have to write a function `codeWord(string str)`, where you will have to generate a code from `str` given in the parameter and return it. The code should be generated using the following rules → first character followed by the last character followed by the length of the string. For example, if `str` is "`sukanya`", then the code should be "`sa7`". You have to decide the return type based on the problem description. Also write a `main()` to call it with 5 different strings and print their respective code in the following way:

   ```
   Code of Sukanya is Sa7
   Code of Jack is Jk4
   Code of monkey is my6
   ...
   ```

3. (8 points) Write a function `reverse(int n)` which reverses the digits in its parameter and returns the result. For example if `n` is `927`, it would return `729`. Call the function in your `main()` that asks the user to enter 10 numbers and reverses them.

4. (6 points) Write a function `isPalindrome(string str)` to check if a string is palindrome or not. It should return `true` if it is a palindrome and `false` otherwise. Write a `main()` to print an appropriate message.

   ```
   aabaa is a palindrome!
   abs is not a palindrome!
   ```

5. (6 points) Write a function `printPattern(int n, char c)` to print a full pyramid. Here `n` is the number of rows to be printed and `c` is the character you want to use to print your pyramid. For example, if `n = 3, c = '*'`, then the pyramid would look like:

```
    *
   * * *
  * * * * *
```

You have to test your function from main for `n = 5, c = '#'` and `n = 10, c = '$'`

Submission instructions

After you complete the assignments, please upload the corresponding .cpp files to camino under Assignment→ Homework 4→ 4.2, 4.3, 4.4 and 4.5 respectively. For 4.1, upload a .pdf file. Please make sure you have enough comments and proper indentation (do NOT use tab, rather use double spaces).