GIT CSE102 HW04

Fall 2014

Due Date

16.10.2014, 23:59

Implement the following functions;

1. A function that computes and prints the result of the following equation;

$$\sum_{n=2}^{m} \frac{n^{1/2}}{\log_2 n}$$

   Your function should get *m* as a parameter.

   Function Header:

```
double compute_serie( int m );
```

2. A function that draws a triangle of given `size_triangle`.
   For example if the given `size_triangle` is 7, the resulting triangle would be similar to this;

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

   Function Header:

```
void draw_triangle( int size_triangle );
```

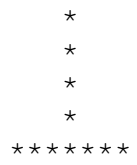
3. A function that draws several triangles of a given size.
   For example if the given triangle `size_triangle` is 7, and the given triangle `count_triangle` is 3, then your function will draw a shape similar to this;

Function Header:

```
void draw_multi_triangle( int size_triangle, int
count_triangle);
```

```
Sample Run:
{ draw_multi_triangle(7, 3); }
```

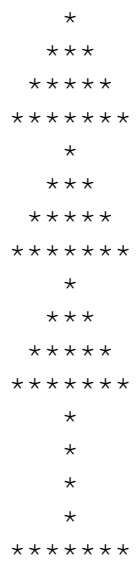
4. A function that draws a shape like upside-down 'T' of a given `size_root`.
   For example if the given `size_root` is 7, the resulting rectangle would be similar to this;



Function Header:

```
void draw_root( int size_root);
```

5. A function that draws a tree of given parameters.
   For example if the given parameters are (`size_triangle, count_triangle, size_root)` is 7, 3, 7 respectively, the resulting tree would be similar to this;



Function Header:

```
void draw_tree( int size_triangle, int count_triangle, int
size_root);
```

Sample Run:

```
{draw_tree(7, 3, 7); }
```

6. An encryption function that reads the content of a file. Your function should encrypt the content by adding given `n` value to each character. Also, your function should print encrypted text on the screen. For example if the content is “hal9000” and `n` is 1, then the encrypted text should be identical to this; “ibm9000” (Don’t encrypt numeric characters).

   ```
   void encrypt(  const char[] filename, int n);
   ```

7. A decryption function that reads the content of a file. Your function should decrypt the content by subtracting given `n` value from each character. Also, your function should print decrypted text on the screen. For example if the content is “ibm9000” and `n` is 1, then the decrypted text should be identical to this; “hal9000” (Don’t decrypt numeric characters).

   ```
   void decrypt(  const char[] filename, int n);
   ```

8. A function that reads all alpha-numeric characters from user as long as he/she doesn’t hit space key. Your function should prints third largest input character in terms of acsi value.

   ```
   void third_largest();
   ```

Your main function must be in following format;

```
int main(){


    int m;
    int size_triangle;
    int count_triangle;
    int size_root;

    double result;
    ////////////////////////////////////////
    printf("input for compute_serie:\n");
    scanf ("%d", &m);
    result  = compute_serie(m);
    printf("Result is: %lf\n", result);
    puts("-------------------------------");
    ////////////////////////////////////////


    ////////////////////////////////////////
    printf("input for draw_triangle:\n");
    scanf ("%d", &size_triangle);
    draw_triangle(size_triangle);
    puts("-------------------------------");
    ////////////////////////////////////////



    ////////////////////////////////////////
    printf("input for draw_multi_triangle:\n");
    scanf ("%d %d", &size_triangle , &count_triangle);
    draw_multi_triangle(size_triangle, count_triangle);
    puts("-------------------------------");
    ////////////////////////////////////////


    ////////////////////////////////////////
    printf("input for draw_tree:\n");
    scanf ("%d %d %d", &size_triangle , &count_triangle,
    &size_root);
    draw_tree(size_triangle, count_triangle, size_root);
    puts("-------------------------------");
    ////////////////////////////////////////



    ////////////////////////////////////////
    printf("input for encrypt:\n");
    scanf ("%d", &m);
    encrypt(  "enc.txt", m);
    puts("-------------------------------");
    ////////////////////////////////////////
```

```
    ////////////////////////////////////////
    printf("input for decrypt:\n");
    scanf ("%d", &m);
    decrypt (  "dec.txt", m);
    puts("--------------------------------");
    ////////////////////////////////////////


    ////////////////////////////////////////
    third_largest();
    puts("--------------------------------");
    ////////////////////////////////////////



}
```

Notes:

- You should submit 1 files;
  - main.c
- Add all files into a folder and compress it for submission. The folder names will be restricted to the following format:
  HW#_studentid_studentname.
  - Example:
    HW04_121044001_Abdullah_Akay
- Upload soft copy of your homework to Moodle course web page
- Submit hard copy of your assignment to Teaching Assistant within 24 hours after the soft copy submission deadline.
- Don't forget to test your code in the provided Linux virtual machine.
- Obey good programming rules (Indentation, Documenting, Well Commenting, Avoidıng magic numbers, Non-ascii characters etc.)
- **Strictly follow submission and file, folder naming rules.**