

Computer Programming 1 - Final Examination - January 9th 2016

- You have 2 hours to complete the assignment.
- You can only use the code provided, you should not access any other material.
- If the code does not compile, the exam won't be accepted for submission.
- If a test does not pass or raises a runtime error, that exercise won't be accepted for submission.
- Tests are provided. They give clues on the implementation. **You cannot modify the tests.**
- Code is expected to be readable, clean and optimal.
- Inside the code, replace "**INSERT YOUR NAME HERE**" with your name and last name.
- When you finish, *ZIP the whole folder* with a filename called "**lastname_name.zip**" and upload it to "**Midterm Exam**" folder.

1. (3 points) Make a function which given a positive integer it **checks if is a prime or not**.

```
int is_seven_prime = is_prime(7);  
TEST("Exercise 1", is_seven_prime);
```

2. (3 points) Make a function which given a cstring it **capitalizes the first letter in each word and returns the total number of words**.

```
char hello_world[] = "hello world";  
int num_words = capitalize_first_letter_and_count_words(hello_world);
```

3. (4 points) Make a function that given a position in a **2D board** creates an **explosion changing the characters in the given row and column by '*'**.

```
char board[4][4] = {  
    {'-', '-', '-', '-'}, // ---->y  
    {'-', '-', '-', '-'}, // |  
    {'-', '-', '-', '-'}, // V  
    {'-', '-', '-', '-'} // x  
};  
explosion(&board[0][0], 1, 2, 4, 4);
```