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Click or tap here to enter text.

**Follow the following link to get the C sample codes**

**https://cpr101.ca/SDLC-Testing/index.html**

**See the topic's slides, the activity instructions, and the Programming Test Cases.docx   
(** BlackBox-StringDemo.c**)**

The number of rows in the tables below are for convenience; they do not indicate the number of cases expected.

**Test Cases for the Black box program**

| **Description** | **+ / − Purpose** | **Data Input** | **Expected Output** | **Actual output if unexpected** | **Success?** | **Comments** |
| --- | --- | --- | --- | --- | --- | --- |
| **Testing the actual length of string the program can handle** |  | **String: abcdefghijk** |  |  |  |  |
| String: abcdefghijk Position: 3 | + | Position: 3 | c | e | FAIL | The program returns the incorrect character. |
| String: abcdefghijk Position: 13 | - | Position: 13 | ‘ ‘ | ‘ ‘ | PASS | The program correctly handles the empty string. |
| String: abcdefghijk Position: 1 | + | Position: 1 | a | c | FAIL | This much length of the string cannot be handled by this program, it should be fixed by assigning unsigned string to it. |
| String: abcdefghijk Position: 15 | - | Position: 15 | ‘ ‘ | ‘ ‘ | PASS | The program correctly handles the empty string. |
| String: abcdefghijk Position:7 | + | Position: 7 | g | i | FAIL | The program returns the incorrect character. |
| **Testing if the position entered is a character, then does it displays an error?** |  | **String: Hello World! How are you?** |  |  |  |  |
| Input number in length of string: 7 | + | Position: 7 | W | r | FAIL | If I put a character into the input when position is demanded, then the program is terminated. |
| Input number in length of string: 18 | + | Position: 18 | a | e | FAIL | The program returns the incorrect character. |
| Input number in length of string: 20 | + | Position: 20 | e | y | FAIL | The program returns the incorrect character. |
| Input number out of length of string: 34 | - | Position: 34 | ‘ ‘ | ‘ ‘ | PASS | The program correctly handles the empty string. |
| Input number in length of string: 5 | + | Position: 5 | o | W | FAIL | The program returns the incorrect character. |
| **Testing if the position entered is a character, then does it displays an error?** |  | **String: This is last activity** |  |  |  |  |
| Input number out of length of string: 24 | + | Position: 24 | ‘ ‘ | ‘ ‘ | PASS | The program correctly handles the empty string. |
| Input number in length of string: 19 | + | Position: 19 | t | y | FAIL | The program returns the incorrect character. |
| Input number in length of string: 8 | - | Position: 8 | ‘ ‘ | a | FAIL | The program returns the incorrect character. |
| Input number out of length of string: 23 | - | Position: 23 | ‘ ‘ | ‘ ‘ | PASS | The program correctly handles the empty string. |
| Input number in length of string: 12 | + | Position: 12 | t | a | FAIL | The program returns the incorrect character. |

**Test Cases for the White box program.**

| **Description** | **+ / − Purpose** | **Data Inputs for X and O** | **Expected Output** | | **Actual output if unexpected** | **Success?** | **Comments** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Start program | Record initial condition | n/a | 1 2 3  4 5 6  7 8 9 |  |  |  | To copy a grid from terminal, hold [Alt] while click & drag to select. |
| Nominal test | + check recording of alternating moves to open grid positions | X > 1 O > 2 | **X** 2 3  4 5 6  7 8 9 | X **O** 3  4 5 6  7 8 9 | X **O** 3  4 5 6  7 8 9 | PASS | It is output according to the location as input by the user. |
| Nominal test | **+** | X >3 O >5 | X O **X**  4 5 6  7 8 9 | X **O** X  4 **O** 6  7 8 9 | X **O** X  4 **O** 6  7 8 9 | PASS | It is output according to the location as input by the user. |
| Nominal test | **+** | X >9 O >8 | X O X  4 O 6  7 8 **X** | X O X  4 O 6  7 **O** X | X O X  4 O 6  7 **O** X | PASS | The result of the game is ‘O is COLUMN 2-5-8 WINNER!’ |
| Integrated testing | **-** | X >0 O >-1 | ‘ ‘ | ‘ ‘ | Instead of 0, use grid position 1 - 9 | FAIL | The result is about number is not valid. |
| Unit Test | **-** | X >k O >! | ‘ ‘ | ‘ ‘ | Please enter a numeric value between 1 and 9. | FAIL | The result is about the user’s input is not number. |
| Nominal test | + check recording of alternating moves to open grid positions | X >5 O >1 | 1 2 3  4 **X** 6  7 8 9 | **O** 2 3  4 X 6  7 8 9 | O 2 3  4 X 6  7 8 9 | PASS | It is output according to the location as input by the user. |
| Nominal test | + | X >3 O >6 | O 2 **X**  4 X 6  7 8 9 | O 2 X  4 X **O**  7 8 9 | O 2 X  4 X O  7 8 9 | PASS | It is output according to the location as input by the user. |
| Nominal test | + | X >2 O >8 | O **X** X  4 X O  7 8 9 | O X X  4 X O  7 **O** 9 | O X X  4 X O  7 O 9 | PASS | It is output according to the location as input by the user. |
| Nominal test | + | X >7 O >9 | O X X  4 X O  **X** O 9 | O X X  4 X O  X O **O** | O X X  4 X O  X O 9  X is DIAGONAL 3-5-7 WINNER! | PASS | The result of the game is ‘X is DIAGONAL 3-5-7 WINNER!’ |
| System Test | - | X >4 O >3 | O X X  X X O  X O O | The number is not valid | O X O  X X O  X O O  O is COLUMN 3-6-9 WINNER! | FAIL | The result of the game is ‘O is COLUMN 3-6-9 WINNER!’ |