Loops

for and while loops

Assignment 1: Draw upside down triangle

Write a program that outputs a right triangle of asterisks given the height as input. Each line ends with a blank space.

Example 1: If the input is: 3 => The output is

In [ ]:
```
* * *
* *
*
```

In [ ]:
```
Example 1: If the input is: 4 => The output is
```

In [ ]:
```
* * * *
* * *
* *
*
```

main.cpp

```
#include <iostream>
using namespace std;

int main() {

   /* Type your code here. */

   return 0;
}
```

Assignment 1 Tests

Apply and report the results of all 4 different input examples 12 points.

1. Compare output (2 points)

When input is

3

Standard output exactly matches

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

2. Compare output (2 points)

When input is

4

Standard output exactly matches

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

3. Compare output (3 points)

When input is

1

Standard output exactly matches

```
*
```

4. Compare output (3 points)

When input is

6

Standard output exactly matches

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

,

Assignment 2: Matching strings

Write a program that compares two strings given as input. Output the number of characters that match in each string position. The output should use the correct verb (match vs matches) according to the character count.

Example 1: If the input is: crash crush => The output is: 4 characters match

Example 2: If the input is: cat catnip => The output is: 3 characters match

Example 3: If the input is: mall saw => The output is: 1 character matches

Example 4: If the input is: apple orange => The output is: 0 characters match

Example 4: If the input is: xxxxxxxx xyxyxyxyxy => The output is: 5 characters match

main.cpp

```
#include <iostream>
#include <string>
using namespace std;

int main() {

   /* Type your code here. */

   return 0;
}
```

Assignment 2 Tests

Apply and report the results of 5 different input examples to receive 10 points.

Assignment 3: Checker for integer string

Forms often allow a user to enter an integer. Write a program that takes in a string representing an integer as input, and outputs Yes if every character is a digit 0-9.

Example 1: If the input is: 1995 => The output is: Yes

Example 2: If the input is: 42,000 => The output is: No

Example 3: If the input is: 2001! => The output is: No

Example 4: If the input is: 938751 => The output is: Yes

Example 5: If the input is: -1995 => The output is: No

Example 6: If the input is: 32.45 => The output is: No

Hint: Use a loop and the isdigit() function (don't forget to include the cctype library).

main.cpp

```
#include <iostream>
#include <string>
using namespace std;

int main() {
   string userString;

   cin >> userString;

   /* Type your code here. */

   return 0;
}
```

Assignment 3 Tests

Apply and report the results of 6 different input examples to receive 12 points.

Submissions

Note: Do not forget to submit all three assignments to receive full credit.

1 - Name your C++ files FirstName_Lastname_DrawTriangle.cpp, FirstName_Lastname_MatchingString.cpp, and FirstName_Lastname_IntegerCheck.cpp

2 - Prepare your report in docx or pdf format and name it Firstname_Lastname.docx or Firstname_Lastname.pdf. Put both your assignments and corresponding tests in ONE report file.

3 - Add the screenshot of your code to the report. All tests should be performed and the result screenshot be included in the report.

Note: Make sure to have your report containing both explanatnations and screenshots.