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**PROGRAM: CSCI 241 Assignment 1**

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**FUNCTION: This program tests functions for manipulating C**

**strings.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/**

**#include** **<iostream>**

**#include** **<cstring>**

**#include** **<cctype>**

using std::cin;

using std::cout;

using std::endl;

**// Add your function prototypes here**

int main()

{

char\* index;

char str[] = **"adamant"**;

int char\_value;

**//int \*index1;**

**// Tests 1a - 1d: Test the equals() function**

cout << **"Test 1a: "**;

**if** (!strcmp(**"catapult"**, **"catapult"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 1b: "**;

**if** (strcmp(**"catapult"**, **"catamaran"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 1c: "**;

**if** (strcmp(**"cat"**, **"catamaran"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 1d: "**;

**if** (strcmp(**"catapult"**, **"cat"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << endl;

**// Tests 2a - 2d: Test the equalsIgnoreCase() function**

cout << **"Test 2a: "**;

**if** (strcmp(**"catapult"**, **"CATAPULT"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 2b: "**;

**if** (strcmp(**"catapult"**, **"Catamaran"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 2c: "**;

**if** (strcmp(**"Cat"**, **"Catamaran"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 2d: "**;

**if** (strcmp(**"Catapult"**, **"Cat"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << endl;

**// Tests 3a - 3d: Test the indexOf() function**

cout << **"Test 3a: "**;

index = strchr(str, **'a'**);

char\_value = index-str;

**if** (char\_value == 0)

cout << **"correct\n"**<< char\_value;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 0\n"**;

cout << **"Test 3b: "**;

index = strchr(str, **'m'**);

char\_value = index-str;

**if** (char\_value == 3)

cout << **"correct\n"** << char\_value;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 3\n"**;

cout << **"Test 3c: "**;

index = strchr(str, **'t'**);

char\_value = index-str;

**if** (char\_value == 6)

cout << **"correct\n"** << char\_value;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 6\n"**;

cout << **"Test 3d: "**;

index = strchr(str, **'x'**);

char\_value = index - str;

char\_value = char\_value-char\_value-1;

**if** (char\_value == -1)

cout << **"correct\n"** << char\_value;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not -1\n"**;

cout << endl;

**// Tests 4a - 4d: Test the lastIndexOf() function**

cout << **"Test 4a: "**;

index = strrchr(str, **'t'**);

char\_value = index-str;

**if** (char\_value == 6)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 6\n"**;

cout << **"Test 4b: "**;

index = strrchr(str, **'m'**);

char\_value = index-str;

**if** (char\_value == 3)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 3\n"**;

cout << **"Test 4c: "**;

index = strrchr(str, **'a'**);

char\_value = index-str;

**if** (char\_value == 4)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 4\n"**;**// Tests 4a - 4d: Test the lastIndexOf() function**

cout << **"Test 4a: "**;

index = strrchr(str, **'t'**);

char\_value = index-str;

**if** (char\_value == 6)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 6\n"**;

cout << **"Test 4b: "**;

index = strrchr(str, **'m'**);

char\_value = index-str;

**if** (char\_value == 3)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 3\n"**;

cout << **"Test 4c: "**;

index = strrchr(str, **'a'**);

char\_value = index-str;

**if** (char\_value == 4)

cout << **"correct"** << char\_value << **"\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not 4\n"**;

cout << **"Test 4d: "**;

index = strrchr(str, **'x'**);

char\_value = index-str;

char\_value = char\_value-char\_value-1;

**if** (char\_value == -1)

cout << **"correct\n"**;

**else**

cout << **"incorrect - index returned was "** << char\_value << **", not -1\n"**;

cout << endl;

**// Tests 5a - 5c: Test the startsWith() function**

cout << **"Test 5a: "**;

**if** (strstr(**"your house"**, **"your"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 5b: "**;

**if** (!strstr(**"my house"**, **"your"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 5c: "**;

**if** (!strstr(**"you"**, **"your"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << endl;

**// Tests 6a - 6c: Test the endsWith() function**

cout << **"Test 6a: "**;

**if** (strstr(**"your house"**, **"house"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 6b: "**;

**if** (!strstr(**"your mouse"**, **"house"**))

cout << **"correct \n"**;

**else**

cout << **"incorrect\n"**;

cout << **"Test 6c: "**;

**if** (!strstr(**"use"**, **"house"**))

cout << **"correct\n"**;

**else**

cout << **"incorrect\n"**;

return 0;

}