**Lab 11: Strings and Structures**

**CSE 4108**

**Structured Programming I Lab**

October 2021

# 

# 

**Lab Tasks**

1. **Built in Functions?:**

You are given two strings ***a*** and ***b***, separated by a new line. Each string will consist of lower case Latin characters ('a'-'z').

In the first line of the output, print two space-separated integers, representing the length of ***a*** and ***b*** respectively. In the second line of the output, print the string produced by concatenating ***a*** and ***b***, means ***(a+b)***. In the third line of output, print two strings separated by a space, ***a’*** and ***b’***. ***a’*** and ***b’*** are the same as ***a*** and ***b***, respectively, except that their first characters are swapped. Length of ***a*** and ***b*** will not exceed 200 characters. If the concatenated string length exceeds 200 characters, produce an error message that says, “Buffer overflow”.

**Sample Input:**

Linkin

Park

**Sample Output:**

6 4

LinkinPark

Pinkin Lark

**Note:** You can’t use any **built-in functions** for this problem.

2. **UNO Reverse:**

Write a program named reverse.c that echoes its ***command-line arguments*** in reverse order. Running the program by typing ⇒ reverse void and null should produce the following output:

null and void.

**Hint:** You have to run the code from the command line. Pass the arguments "void and null" after the name of the .exe file in the command line.

For the following tasks, use Structure where necessary.

3. **Country Codes, Take Me Home!:**

Write a program that asks the user to enter an international dialing code and then looks it up in the country\_codes array. The codes are as follows:

| Country | Code | Country | Code |
| --- | --- | --- | --- |
| Argentina | 54 | Bangladesh | 880 |
| Brazil | 55 | Burma | 95 |
| China | 86 | Columbia | 57 |
| Congo, Dem. Rep. of | 243 | Egypt | 20 |
| Ethiopia | 251 | France | 33 |
| Germany | 49 | India | 91 |
| Indonesia | 62 | Iran | 98 |
| Italy | 39 | Japan | 81 |
| Mexico | 52 | Nigeria | 234 |
| Pakistan | 92 | Philippines | 63 |
| Poland | 48 | Russia | 7 |
| South Africa | 27 | South Korea | 82 |
| Spain | 34 | Sudan | 90 |
| Thailand | 66 | Turkey | 90 |
| Ukraine | 380 | United Kingdom | 44 |
| United States | 1 | Vietnam | 8 |

If it finds the code, the program should display the name of the corresponding country; if not, the program should print a message saying invalid dialing code.

4. **Inventory management:**

Write a program that keeps track of information for 10 items in a shop. Suppose the information stored for each item is given as:

(int productID, char\* name, double unitPrice, int stockQuantity)

In separate lines, print the productID and name for those items which are still in stock and whose price is less than $100.