**SET A**

Q1. **String builder**:

Write a python code that takes two strings as input where each string is a concatenation of two substrings, W1 and W2. First String is represented as W1+W2 and the second string is W2+W1. You have to find these substrings and print them. Your code should be able to handle ALL of these cases:

1. Input 1 = **abcdefgh** Input 2 = **efghabcd** ; then W1 = **abcd** and W2 = **efgh**
2. Input 1 = **abbcde** Input 2 = **cdeabb** ; then W1 = **abb** and W2 = **cde**
3. Input 1 = **cabcababcd** Input 2 = **abcdcabcab** ; then W1= **cabcab** and W2 = **abcd**
4. Input 1 = **aabcd** Input 2 = **abcda** ; then W1 = **a** and W2 = **abcd**

Then, after finding those two strings you need to print the common substring between them. I.e.

For input 3, resulting strings are W1= **cabcab** and W2 = **abcd**; here it should print **“Common substring : abc”**

Similarly for input 4, the output should be **“Common substring : a”**

| **input** | **output** |
| --- | --- |
| **abcdefgh**  **efghabcd** | **w1: abcd, w2: efgh**  **No common substring found** |
| **abbcde**  **cdeabb** | **w1: abb, w2:cde**  **No common substring found** |
| **cabcababcd**  **abcdcabcab** | **w1: cabcab, w2:abcd**  **Common substring : abc** |
| **aabcd**  **abcda** | **w1: a, w2: abcd**  **Common substring : a** |

**Q2. Tracing**

| 1 | **test=""** | **OUTPUT** |
| --- | --- | --- |
| 2 | **i= 10** |  |
| 3 | **j= 77** |  |
| 4 | **while i<=50:** |  |
| 5 | **flag =True** |  |
| 6 | **test=str(i)** |  |
| 7 | **j-=2** |  |
| 8 | **run=j** |  |
| 9 | **while flag:** |  |
| 10 | **if run > i:** |  |
| 11 | **test1 = " --> "+str(run)** |  |
| 12 | **test+=test1** |  |
| 13 | **print(test1,end="")** |  |
| 14 | **run-=20** |  |
| 15 | **else:** |  |
| 16 | **flag=False** |  |
| 17 | **print("!!!")** |  |
| 18 | **print(test)** |  |
| 19 | **i+=15** |  |

**SET B**

**Q1. String Builder v2:**

You will be given one string as an input which is the result of the multiplication string of a certain string. Ie. **“wowowowowo”** is basically **“wo”\*5.** You have to find out the **core substring** and **how many times it was multiplied by to get to the input string** and then make a **pattern** like the output which will take the number of multiplication as the **row numbers**.

| **input** | **output** |
| --- | --- |
| **“abcdabcdabcdabcd”** | **The given string was a multiplied form of : abcd \*4**  **a**  **ab**  **abc**  **abcd** |
| **“CSE110CSE110CSE110”** | **The given string was a multiplied form of : CSE110 \*3**  **C**  **CS**  **CSE** |
| **“xyzwxyzwxyzwxyzwxyzwxyzw”** | **The given string was a multiplied form of : xyzw \*6**  **x**  **xy**  **xyz**  **xyzw**  **Can't print more lines as the string ran out.** |

**Q2. Tracing**

| 1 | **test=""** | **OUTPUT** |
| --- | --- | --- |
| 2 | **i= 15** |  |
| 3 | **j= 82** |  |
| 4 | **while i<=55:** |  |
| 5 | **flag =True** |  |
| 6 | **test=str(i)** |  |
| 7 | **j-=2** |  |
| 8 | **run=j** |  |
| 9 | **while flag:** |  |
| 10 | **if run > i:** |  |
| 11 | **test1 = " --> "+str(run)** |  |
| 12 | **test+=test1** |  |
| 13 | **print(test1,end="")** |  |
| 14 | **run-=20** |  |
| 15 | **else:** |  |
| 16 | **flag=False** |  |
| 17 | **print("!!!")** |  |
| 18 | **print(test)** |  |
| 19 | **i+=15** |  |