

## **Intro to C Programming:**

1. Write a program where you have to take 2 numerical inputs. Depending on some comparisons, you need to print any of the statements below:  
If the first number is greater than the second number, do subtraction and print the result.
  - a. If the first number is less than the second number, perform addition and print the result.
  - b. If the first number is equal to the second number, do multiplication and print the result.
2. Write a program that allows you to erase multiple spaces in a text file. Then rewrite the sentence without extra spaces in another text file.

**Input:**

I        love              Python              Programming.

**Output:**

I love Python Programming.

=====

**Hints:**

You can use the split function to separate the words into a list.

3. Again, you have lost your USIS password!! You went to the registrar's office and requested a new password. This time, you need to follow some rules to set your password. Otherwise, they won't change it. The rules are:

- At least one lowercase letter
- At least one uppercase letter
- At least one digit (0-9)
- At least one special character (\_ , \$, #, @)

Your task is to find whether a given password follows all those rules. If it breaks any rule, you have to print “**Lowercase character missing**”, “**Uppercase character missing**”, “**Digit missing**” or “**Special character missing**” respective to the missing case. For more than one rule break, print all the rules that were broken (order doesn't matter). If the password is ok, print “**OK**” [3 Marks]

**Sample Input:**

- BR@CUspring
- bracuspring
- BR@CU20spring22

**Sample Output**

- Digit missing
- Uppercase character missing, Digit missing, Special character missing

- OK
4. A company named Sheba.xyz has recently moved from their old domain to a new domain. However, a lot of the company email addresses are still using the old one (employeeName@kaaj.com). Write a function in C that takes the email id of an employee as input and checks whether that email id is updated (I.E. using the new domain employeeName@sheba.xyz) or not.

**[3 Marks]**

**Sample Input:**

- fahmid@kaaj.com
- zaki@sheba.xyz

**Sample Output:**

- Email address is outdated
- Email address is okay

5. Take a string input from the user and find out whether it is a palindrome using pointers.

**Sample Input:**

AAABBAAA  
AABBABA  
aabcbaa

**Sample Output:**

Palindrome  
Not Palindrome  
Palindrome

6. Suppose you and your friends go to have breakfast in a restaurant. Each of you orders Paratha, Vegetable, and Mineral Water. Treat each of the ordered items as structures and each of the structures will have two properties which are: quantity and unit price. Each property of the structure will be taken as input from the user. After taking all the inputs calculate what is the total bill and also, take input from the user on how many people are there in total. Lastly calculate how much each person will have to pay and print it (Note: This value will be a float).

**Sample Input:**

Quantity Of Paratha: 25

Unit Price: 10

Quantity Of Vegetables: 5

Unit Price: 20

Quantity Of Mineral Water: 20

Unit Price: 20

Number of People: 6

**Sample Output:**

Individual people will pay: 125.00 tk

7. Write a C program to print perfect numbers between given intervals using a function. A perfect number is a positive integer equal to the sum of its positive divisors, excluding the number itself.

**Sample Input:**

1

10000

**Sample Output:**

6

28

496

8182