a. Write a program where you have to take 2 numerical inputs. Depending on some comparisons, you need to carry out three operations: addition (+), subtraction (-) and multiplication (*). Each of these operations will be implemented in separate methods.

i. If the first number is greater than the second number, do subtraction and print the result.
ii. If the first number is less than the second number, do an addition and print the result.
iii. If the second number is equal to the first number, do multiplication and print the result [2 Marks]

b. Write a program that allows you to erase multiple spaces in a **text file**. Then re-write 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 Marks]

c. 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 Missing", "Uppercase Missing", "Digit Missing" or "Special 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

d. 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 a 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• Email address is outdated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

e. Take a string input from the user and find out whether it is a palindrome or not using pointers. [3 Marks]

Sample Input:
AAABBAAA
AABBABA
Aabcbaa

Sample Output:
Palindrome
Not Palindrome
Palindrome