# Assignment - 2

**Q1.** Write a pseudo code

1. For an array of integer perform the following operations.
    a. Insert at index.

```
i) define an integer array A with N elements and maximum it can store
is defined by MAX.
ii) index is the index at which element is to be inserted.
iii) if N = MAX
     display message "array is full"
     return
iv) for i = N to index
     A[i + 1] = A[i]
    end i loop
v) A[index] = new_element
vi) N = N + 1
vii) return
```

    b. Delete first element.

```
i) define an integer array A with N elements.
ii) the maximum elements A can store is defined by MAX.
iii) if N = 0
     display message "array is empty"
     return
     else
iv)  for i = 0 to N
          A[i] = A[i+1]
     end i loop
v) N = N - 1
vi) return
```

    c. Traverse in reverse order.

```
i) define an integer array A with N elements and maximum it can store
is defined by MAX.
ii) if N = 0
     display message "array is empty"
    else
iii) for i = N to 0
          display A[i]
     end i loop
iv) return
```

2. For a strings perform the following operations.
    a. Check palindrome.

```
i) let STR be the input string and N be the characters in the string.
ii) temp = STRING variable
iv) for i = N to 0
     temp[n - i] = STR[i]
     end i loop
v) if(STR = temp)
     display “palindrome”
     return true
    else
     display “not palindrome”
     return false
```

    b. Find occurrence of a given character.

```
i) let STR be the input string with N characters
ii) get C character to check the occurrence
iii) let COUNT be the counter with initial value 0
v) for i = 0 to N
     if STR[i] = C
          COUNT = COUNT + 1
    end i loop
vi) display COUNT
vii) return COUNT
```

    c. Compare two strings.

```
i) let STR1 and STR2 be the two input strings with N1 and N2 length
respectively.
ii) if N1 != N2
     display ”Not Equal”
     return false
    else
iii) for i = 0 to N1
          if STR1[i] != STR2[i]
               display ”Not Equal”
               return false
     end i loop
iv) if i = N1
     display “Equal”
     return true
```

3. Multiply two 3x3 matrices.

```
i) let A and B be the input matrices
ii) let ANSWER bet the matrix holding the multiplication
iii) for i = 1 to 3
     for j = 1 to 3
          sum = 0
          for k = 1 to 3
               sum = sum + A[i, k] * B [k, j]
          end k loop
          ANSWER[i, j] = sum
     end j loop
     end i loop
iv) return ANSWER
```