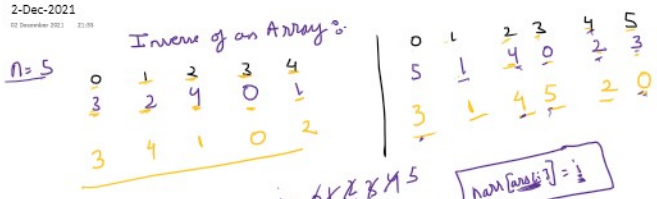
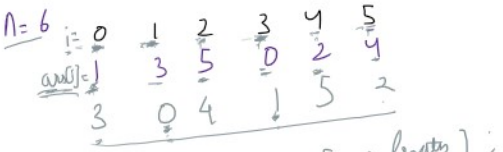
2-Dec-2021

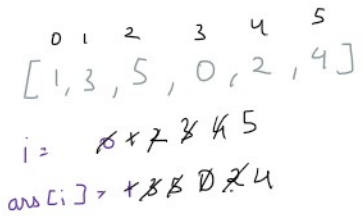
02 December 2021 21:55

Inverse of an Array :-



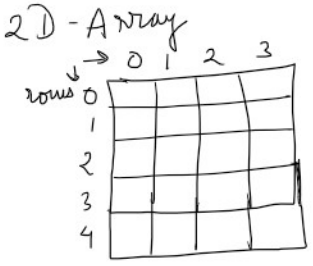



```
int[] narr = new int [arr.length];
for (i = 0 to arr.length - 1) {
  narr [arr[i]] = i;
}
```




```java
public static int[] inverseArray(int[] arr) {
    int[] narr = new int[arr.length];
    for (int i = 0; i < arr.length; i++) {
        narr[arr[i]] = i;
    }
    return narr;
}
```

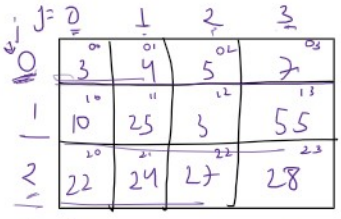
2D - Array



arr.length = 5

arr[0].length = 4 (5×4)

row = 3 col = 4 arr2d = [3] [4]



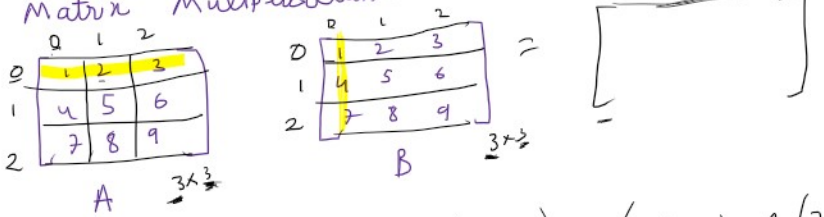

```
for (int i = 0; i < arr2d.length; i++) {
    for (int j = 0; j < arr2d[0].length; j++) {
        arr2d[i][j] = s.nextInt();
    }
}
```

00, 01, 02, 03

2d array

arr2d [1] [2]

Matrix Multiplication :-



⇒ (A (0,0) × B(0,0)) + (A(0,1) × B(1,0)) + (A(0,2) × B(2,0)) =

... no. Row of 2nd array has to be

⇒ [A (00)x B(00)] = [M(0,1) ...] = 0

⇒ Colums of 1st array & Row of 2nd array has to be equal for valid multiplication.

⇒ Row of 1st array & col of 2nd array will be the Row and Col of Result array.

$n = 5$

$n = n + 5$

$n+ = 5$

$(1\times1) + (2\times4) + (3\times1) = 12$

$(1\times1) + (2\times3) + (3\times2) = 13$

$(2\times1) + (2\times4) + (1\times1) = 11$

$(3\times1) + (1\times4) + (2\times1) = 9$

$(3\times1) + (1\times3) + (2\times2) = 10$

$(2\times1) + (2\times3) + (1\times2) = 10$

N =

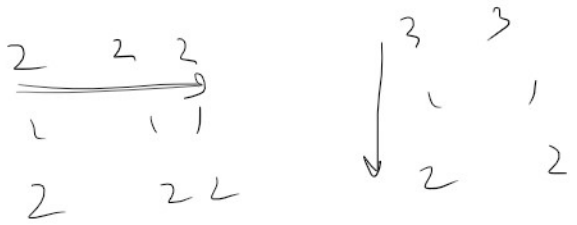
2x2 2x2

```
for (i:0 to N-1) {
    for (j:0 to N-1) {
        int sum = 0
        for (k=0 to N-1) {
            int curSum = A[i][k] x B[k][j];
            Sum = Sum + curSum
        }
```

(00 x 00) + (01 x 10)

A[i][k]

B[k][j]



i = 0 1

j = 0

k = 0

Sum = 0

```java
for (int i = 0; i < ans.length; i++) {
    for (int j = 0; j < ans[0].length; j++) {
        int sum = 0;
        for (int k = 0; k < a[0].length; k++) {
            sum += a[i][k] * b[k][j];
        }
        ans[i][j] = sum;
    }
}
```

1 x 1 = 1

2 x 4

3 x 1

1 x 1

2 x 3

3 x 2

```java
int[][] a = {{1, 2, 3},
             {3, 1, 2},
             {2, 2, 1}};

int[][] b = {{1, 1},
             {4, 3},
             {1, 2}};
```

3 x 3

3 x 2