

Practice problems in C & C++

Set - 1

1. Read a number n from user and create an array of size n . Store the indices as values and print them in reverse order.

2. Implement a minimal version of grep command. List its limitations.

3. Implement a minimal version of tac command, that does opposite of cat.

4. Implement a function that takes matrix A and a number n to push the contents as follows:

```
n: 2
A:   1  2  3  4
     5  6  7  8
     9 10 11 12
    13 14 15 16
```

results in ...

```
A:   15 16  1  2
     3  4  5  6
     7  8  9 10
    11 12 13 14
```

5. Implement a function that takes matrix A , power p and number n so that:

$$A = A^p \quad \text{if } n=0$$

$$A = (A^T)^p \quad \text{otherwise}$$

6. Implement insertion sort using:

(a) linked lists

(b) arrays

7. Implement a function that takes a number r to print a circle of '*' with radius of r columns. With a small trick, it might be made to look like the one below:

