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BRANCH – B.TECH (CSE)

SEC/GROUP – 26(B)

SEMESTER – 2ND

D.O.P – 3 MAY 2021

SUBJECT – COMPUTER WORKSHOP

TOPIC

"R-r-riddikulus" used in the movie Harry Potter to transform anything from one form to other, Similarly you have to transform the array by rotation.
A left rotation operation on an array shifts each of the array's elements 1 unit to the left. For example, if 2 left rotations are performed on array [1,2,3,4,5], then the array would become [3,4,5,1,2].
Given an array a of n integers and a number, d, perform d left rotations on the array. Return the updated array to be printed as a single line of space-separated integers.
 Input Format
The first line contains two space-separated integers n and d, the size of a and the number of left rotations you must perform.
The second line contains space-separated integers a[i] .

SOLUTION

"R-r-riddikulus" used in the movie Harry Potter to transform anything from one form to other, Similarly you have to transform the array by rotation.

A *left rotation* operation on an array shifts each of the array's elements 1 unit to the left. For example, if 2 left rotations are performed on array [1,2,3,4,5], then the array would become [3,4,5,1,2].

Given an array a of n integers and a number, d, perform d left rotations on the array. Return the updated array to be printed as a single line of space-separated integers.

Example:

```
Input:  n = 5, d = 4, a = [1, 2 ,3 ,4, 5]

Output: 5 1 2 3 4
```

CODE IN TEXT FORM –

```cpp
#include <bits/stdc++.h>

using namespace std;

void shiftDNumbers(int n, int d, int a[])

{

int f[d];

    for (int i = 0; i < d; i++)

        f[i] = a[i];

    int l = 0;

    for (int i = d; i < n; i++)

        a[l++] = a[i];

    for (int i = 0; i < d; i++)

        a[l++] = f[i];

    for (int i = 0; i < n; i++)

        cout << a[i] << " ";

    cout << "\n";

}

int main()

{

int n = 5, d = 4;

 d = d % n;

    int a[n] = {1, 2, 3, 4, 5};

shiftDNumbers(n, d, a);

    return 0;}
```

CODE IN COMPILER/IDE-

```cpp
main.cpp
1   #include <bits/stdc++.h>
2   using namespace std;
3
4   void shiftDNumbers(int n, int d, int a[])
5 - {
6
7       int f[d];
8       for (int i = 0; i < d; i++)
9           f[i] = a[i];
10      int l = 0;
11      for (int i = d; i < n; i++)
12          a[l++] = a[i];
13      for (int i = 0; i < d; i++)
14          a[l++] = f[i];
15      for (int i = 0; i < n; i++)
16          cout << a[i] << " ";
17      cout << "\n";
18  }
19  int main()
20 - {
21      int n = 5, d = 4;
22
23      d = d % n;
24      int a[n] = {1, 2, 3, 4, 5};
25
26      shiftDNumbers(n, d, a);
27      return 0;
28  }
29
```

OUTPUT-

```
input
5 1 2 3 4




...Program finished with exit code 0
Press ENTER to exit console._
```

LEARNING OUTCOMES

1. Apply coding skills to solve application based problems on competitive platforms such as Hacker Rank/ Hacker Earth/Code Chef.
2. Understand the basic concept and structure of computer hardware
3. Identify the existing configuration of the computers and peripherals.
4. Installing and uninstalling multiple operating systems on a machine.
5. Apply their knowledge about computer peripherals to identify /rectify problems on-board.

EVALUATION COLUMN (To be filled by concerned faculty only)

Sr. No.	Parameters	Maximum Marks	Marks Obtained
1.	Worksheet Completion including writing learning objective/ Outcome	10	
2.	Post Lab Quiz Result	5	
3.	Student engagement in Simulation/ Performance/ Pre Lab Questions	5	
4.	Total Marks	20	