KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)

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DSA PROGRAMMING LAB-1,2,3
Before Link List
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LAB 1

```c
/*Q1.WAP in C to dynamically allocate memory using malloc or callo
c to store  'N' numbers entered by a user
and display all the numbers and the average of the numbers.*/
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int main()
{
    int n_025, *p_025, sum_025 = 0;
    float avg_025;

    printf("how many elements are there");
    scanf("%d", &n_025);
    p_025 = (int *)malloc(n_025 * sizeof(int));
    for (int i = 0; i < n_025; i++)
    {
```

2005025_Hitu raj

```
        printf("Enter the %d element ", i + 1);
        scanf(" %d", &*(p_025 + i));

        sum_025 = sum_025 + *(p_025+i);
    }
    avg_025 = sum_025 / (float)n_025;
    printf("the elements are ");
    for (int i = 0; i < n_025; i++)
    {

        printf(" %d ", *(p_025 + i));
        sum_025 = sum_025 + *p_025;
    }
    printf("\nthe avg of the entered data is %f", avg_025);
    return 0;
}
```

OUTPUT-1

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 1dma_avg.c -o 1dma_avg } ; if ($?)
{ .\1dma_avg }
how many elements are there4
Enter the 1 element 12
Enter the 2 element 42
Enter the 3 element 2
Enter the 4 element 4
the elements are  12  42  2  4
the avg of the entered data is 15.000000
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

```
//Q2.Find the largest element in an array using Dynamic Memory All
ocation.


#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int main()
{
    int n_025, *p_025, max_025;
```

```c
    printf("how many elements are there");
    scanf("%d", &n_025);
    p_025 = (int *)malloc(n_025 * sizeof(int));
    for (int i = 0; i < n_025; i++)
    {
        printf("Enter the %d element ", i + 1);
        scanf(" %d", &*(p_025 + i));
    }
    max_025 = *p_025;
    for (int i = 0; i < n_025; i++)
    {

        if (max_025 <= *(p_025 + i))
            max_025 = *(p_025 + i);
    }
    printf("the largest no. is %d", max_025);
    return 0;
}
```

OUTPUT-2

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 2_largest_no_in_Array.c -o 2_larges
t_no_in_Array } ; if ($?) { .\2_largest_no_in_Array }
how many elements are there5
Enter the 1 element 21
Enter the 2 element 34
Enter the 3 element 212
Enter the 4 element 2324
Enter the 5 element 21
the largest no. is 2324
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

```c
/*Q3.WAP to read and print the details of 5 CS student details
using Dynamic Memory Allocation (roll, age, cgpa, subject).
*/

#include <stdio.h>
#include <string.h>
#include <stdlib.h>
struct stud
```

```
{
    int roll_025, age_025;
    int cgpa_025;
    char sub_025[10];
};
int main()
{
    int n;
    struct stud *s[10];

    printf("how many students are there");
    scanf("%d", &n);
    for (int i = 0; i < n; i++)
    {
        s[i] = (struct stud * )malloc(n * sizeof(struct stud));
    }


    printf("Enter the details ");
    for (int i = 0; i < n; i++)
    {
        printf("Enter the roll ,age, sub  cgpa, ");

        scanf("%d%d%s%d",&s[i]->roll_025,&s[i]->age_025, &s[i]-
>sub_025, &s[i]->cgpa_025);
    }

    for (int i = 0; i < n; i++)
    {
        printf(" roll ,age, cgpa,sub for %d student  is %d %d %d %
s \n", i + 1, s[i]->roll_025, s[i]->age_025, s[i]->cgpa_025, s[i]-
>sub_025);
    }

    return 0;
}
```

OUTPUT-3

```
Windows PowerShell
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PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 3_struc_student_detaisl.c -o 3_stru
c_student_detaisl } ; if ($?) { .\3_struc_student_detaisl }
how many students are there2
Enter the details Enter the roll ,age, sub  cgpa, 25
23
HINDI
23
Enter the roll ,age, sub  cgpa, 321
43
ECO
43
 roll ,age, cgpa,sub for 1 student  is 25 23 23 HINDI
 roll ,age, cgpa,sub for 2 student  is 321 43 43 ECO
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

```c
//Q4.WAP to find the standard deviation of 20 numbers.

#include <stdio.h>
#include <math.h>
#include <stdlib.h>
int main()
{
    int n_025, *p_025, sum_025 = 0, mean_025;
    double sqr_025 = 0.0, sd_025 = 0.0;
    printf("how many no. u have");
    scanf("%d", &n_025);

    p_025 = (int *)malloc(sizeof(int) * n_025);
    printf("enter the no.s ");
    for (int i = 0; i < n_025; i++)
    {
        scanf("%d", &p_025[i]);
        sum_025 = sum_025 + p_025[i];
    }
    mean_025 = sum_025 / n_025;

    for (int i = 0; i < n_025; i++)
    {
        double t = p_025[i] - mean_025;
        sqr_025 = pow(t, 2);
        sd_025 = sd_025 + sqr_025;
    }
    sd_025 = sd_025 / (n_025 - 1);
```

```c
    printf("the standard deviation is %lf ", sqrt(sd_025));

    return 0;
}
```

OUTPUT-4

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 4_stand_deviation.c -o 4_stand_devi
ation } ; if ($?) { .\4_stand_deviation }
how many no. u have
10
enter the no.s 32
4
432
4323
324342
33223
434
323
212
32
the standard deviation is 101717.410505
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

```c
//WAP to arrange the elements of a dynamic
//array such that even numbers are followed by odd numbe
rs.
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int main()
{
    int n_025, *p_025 ;

    printf("how many elements are there");
    scanf("%d", &n_025);
    p_025 = (int *)malloc(n_025 * sizeof(int));
    for (int i = 0; i < n_025; i++)
    {
        printf("Enter the %d element ", i + 1);
        scanf(" %d", &p_025[i]);
    }

    for (int i = 0; i < n_025 / 2; i++)
    {
```

```
        if (p_025[i] % 2 == 0 && p_025[n_025 - 1 - i] %
2 != 0)
        {
        }

        else if (p_025[i] % 2 != 0 && p_025[n_025 - 1 -
i] % 2 == 0)
        {
            int temp = *(p_025 + i);
            *(p_025 + i) = *(p_025 + (n_025 - i - 1));
            *(p_025 + (n_025 - i - 1)) = temp;
        }
        else if (p_025[i] % 2 == 0 && p_025[n_025 - 1 -
i] % 2 == 0)
        {
            int j = i + 1, c = 0;
            while (c ==0&&j<=n_025/2)
            {
                if (p_025[j] % 2 != 0)
                {
                    int temp = *(p_025 + j);
                    *(p_025 + j) = *(p_025 + (n_025 - i
- 1));

                    *(p_025 + (n_025 - i - 1)) = temp;
                    c = 1;
                }
                j++;
            }
        }
        else if (p_025[i] % 2 != 0 && p_025[n_025 - 1 -
i] % 2 != 0)
        {
            int j = n_025 - 2 - i, c = 0;
            while (c == 0&&j>=n_025/2)
            {
                if (p_025[j] % 2 == 0)
```

```
                {
                    int temp = *(p_025 + j);
                    *(p_025 + j) = *(p_025 + i);
                    *(p_025 + i) = temp;
                    c = 1;
                }
                j--;
            }
        }
    }
    printf("even followed by odd is ");
    for (int i = 0; i < n_025; i++)
    {
        printf("%d ", *(p_025 + i));
    }

    return 0;
}
```

OUTPUT-5

```
Windows PowerShell
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PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 5_even_followed_by_odd.c -o 5_even_
followed_by_odd } ; if ($?) { .\5_even_followed_by_odd }
how many elements are there6
Enter the 1 element 23
Enter the 2 element 44
Enter the 3 element 21
Enter the 4 element 23
Enter the 5 element 46
Enter the 6 element 21
even followed by odd is 46 44 21 23 23 21
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

```
//Q6.WAP to reverse the contents of a dynamic array of ‘
N’ elements.
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int main()
```

```c
{
    int n_025, *p_025;

    printf("how many elements are there");
    scanf("%d", &n_025);
    p_025 = (int *)malloc(n_025 * sizeof(int));
    for (int i = 0; i < n_025; i++)
    {
        printf("Enter the %d element ", i + 1);
        scanf(" %d", &*(p_025 + i));
    }

    for (int i = 0; i < n_025/2; i++)
    {
       int temp=*(p_025+i);
       *(p_025+i)=*(p_025+(n_025-i-1));
       *(p_025+(n_025-i-1))=temp;
    }
    printf("the reverse array is ");
    for (int i = 0; i < n_025; i++)
    {
        printf("%d ", *(p_025+i) );

    }

    return 0;
}
```

OUTPUT-6

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab 1_2.8.21> cd "d:\my codes\DSA_clg\lab 1_2.8.21\" ; if ($?) { gcc 6REVERSE_ARAY_DMA.c -o 6REVERSE_ARA
Y_DMA } ; if ($?) { .\6REVERSE_ARAY_DMA }
how many elements are there5
Enter the 1 element 21
Enter the 2 element 32
Enter the 3 element 324
Enter the 4 element 21
Enter the 5 element 21
the reverse array is 21 21 324 32 21
PS D:\my codes\DSA_clg\lab 1_2.8.21>
```

LAB-2

```c
/*Q1. Write a program using C to allocate memory dynamically for 2D arr
ay ,read the values and display them using 3 functions separately
I. Keeping no columns fixed and using variable no of rows
II. Keeping no rows fixed and using variable no of columns
III. Using both variable no of rows and columns(use double pointer)

*/
#include <stdio.h>
#include <stdlib.h>
void rfcv()
{
    printf(".....THIS IS  2D DMA WITH fix Row & Var Column.....\n");
    int r_025, c_025;

    printf("how many columns you have ");
    scanf("%d", &c_025);

    int *p_025[10], l = 1;

    for (int j = 0; j < 5; j++)
    {
        p_025[j] = (int *)malloc(c_025 * sizeof(int));
    }

    for (int i = 0; i < 5; i++)
    {
        for (int j = 0; j < c_025; j++)
        {

            p_025[i][j] = l;
            l++;
        }
    }

    for (int i = 0; i < 5; i++)
    {
        for (int j = 0; j < c_025; j++)
        {

            printf("%d ", p_025[i][j]);
        }
        printf("\n");
    }
```

```c
}
void rvcf()
{
    printf(".....THIS IS  2D DMA WITH var Row & fix Column.....\n");
     int(*p_025)[5];
    int r_025, l = 1;
    printf("how many rows you have ");
    scanf("%d", &r_025);
    p_025 = (int(*)[5])malloc(r_025 * 5 * sizeof(int));

    for (int i = 0; i < r_025; i++)
    {
        for (int j = 0; j < 5; j++)
        {

            p_025[i][j] = l;
            l++;
        }
    }

    for (int i = 0; i < r_025; i++)
    {
        for (int j = 0; j < 5; j++)
        {

            printf("%d ", p_025[i][j]);
        }
        printf("\n");
    }
}
void rvcv()
{
    printf(".....THIS IS  2D DMA WITH var Row & Var Column.....\n");
    int r_025, c_025, l = 1;
    printf("how many rows you have ");
    scanf("%d", &r_025);
    printf("how many columns you have ");
    scanf("%d", &c_025);

    int **p_025;
    p_025 = (int **)malloc(r_025 * sizeof(int));
    for (int j = 0; j < r_025; j++)
    {
        p_025[j] = (int *)malloc((j + 1) * sizeof(int));
    }
    for (int i = 0; i < r_025; i++)
```

```
    {
        for (int j = 0; j < c_025; j++)
        {

            p_025[i][j] = l;
            l++;
        }
    }

    for (int i = 0; i < r_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {

            printf("%d ", p_025[i][j]);
        }
        printf("\n");
    }
}

int main()
{
    rfcv();
    return 0;
                                }
```

OUTPUT-1

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic> cd "d:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic\" ; if ($?) { gcc 1_2d_arr
ay_dynamically.c -o 1_2d_array_dynamically } ; if ($?) { .\1_2d_array_dynamically }
.....THIS IS  2D DMA WITH fix Row & Var Column.....
how many columns you have 4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
17 18 19 20
PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic>
```

/*Q2 Let A be nXn square dynamic matrix. WAP by using appropriate user defined functions for the following:
a. Find the number of nonzero elements in A
B. Find the sum of the elements above the leading diagonal.

```c
C. Display the elements below the minor diagonal.
D. Find the product of the diagonal elements.
*/
#include <stdio.h>
#include <stdlib.h>
void zero_el(int *a[10], int c_025)
{
    int count = 0;
    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            if (a[i][j] == 0)
            {
                count++;
            }
        }
    }
    printf("no. of zero element is %d \n\n", count);
}

void sumabovediad(int *a[10], int c_025)
{
    int sum = 0;
    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            if (j > i)
            {
                sum = sum + a[i][j];
            }
        }
    }
    printf("sum of elements above leading diagnol is %d\n\n", sum);
}

void disp_b_lead_diag(int *a[10], int c_025)
{
    printf("the  elements below leading disgnol are :");
    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            if (i > j)
            {
```

```
                printf("%d ", a[i][j]);
            }
        }
    }
    printf("\n\n");
}
void diag_prod(int *a[10], int c_025)
{
    int prod = 1;

    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            if (i ==j)
            {
                prod = prod * a[i][j];
            }
            else if ((i + j) == (c_025 - 1))
            {
                prod = prod * a[i][j];
            }
        }
    }


    printf("the prod of the diag elements are %d \n\n:", prod);
}

int main()
{

    int *p_025[10], c_025, l = 0;
    printf("how many columns you have ");
    scanf("%d",&c_025);
    for (int i = 0; i < c_025; i++)
    {
        p_025[i] = (int *)malloc(c_025 * sizeof(int));
    }
    printf("Enter elements \n");
    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            scanf("%d",&p_025[i][j]);
        }
```

```
    }

    for (int i = 0; i < c_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {
            printf("%d ", p_025[i][j]);
        }
        printf("\n");
    }

zero_el(p_025,c_025);
sumabovediad(p_025,c_025);
disp_b_lead_diag(p_025,c_025);
diag_prod(p_025,c_025);
    return 0;
}
```

OUTPUT-2

```
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PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic> cd "d:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic\" ; if ($?) { gcc 2_matrix
.c -o 2_matrix } ; if ($?) { .\2_matrix }
how many columns you have 4
Enter elements
23 43 1 32 00 0 0 233 221 23 32 43 21 42 23 21 42
23 43 1 32
0 0 0 233
221 23 32 43
21 42 23 21
no. of zero element is 3

sum of elements above leading diagnol is 352

the  elements below leading disgnol are :0 221 23 21 42 23

the prod of the diag elements are 0

:
PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic>
```

```
/*Q3. WAP to swap all the elements in the 1st column with all the corre
sponding elements in the last column, and 2nd column with the second la
st column\
 and 3rd with 3rd last etc. of a 2-
D dynamic array.  Display the matrix.
*/

#include <stdio.h>
#include <stdlib.h>
void swap(int *a[10], int r_025, int c_025)
{
```

```c
    for (int i = 0; i < c_025/2; i++)
    {
        for (int j = 0; j < r_025; j++)
        {
            int temp = a[j][i];
            a[j][i] = a[j][c_025 - 1-i];
            a[j][c_025 - 1-i] = temp;
        }

    }
    for (int i = 0; i < r_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {

            printf("%d ", a[i][j]);
        }
        printf("\n");
    }
}
int main()
{
    int r_025, c_025, l = 1;
    printf("how many rows you have ");
    scanf("%d", &r_025);
    printf("how many columns you have ");
    scanf("%d", &c_025);

    int **p_025;
    p_025 = (int **)malloc(r_025 * sizeof(int));
    for (int j = 0; j < r_025; j++)
    {
        p_025[j] = (int *)malloc(c_025 * sizeof(int));
    }
    for (int i = 0; i < r_025; i++)
    {
        for (int j = 0; j < c_025; j++)
        {

            p_025[i][j] = l;
            l++;
        }
    }

    for (int i = 0; i < r_025; i++)
    {
```

```
        for (int j = 0; j < c_025; j++)
        {

            printf("%d ", p_025[i][j]);
        }
        printf("\n");
    }
    printf("\n");
swap(p_025,r_025,c_025);

return 0;
}
```

OUTPUT-3

```
Windows PowerShell
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PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic> cd "d:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic\" ; if ($?) { gcc 3_swap_2
d_Array.c -o 3_swap_2d_Array } ; if ($?) { .\3_swap_2d_Array }
how many rows you have 4
how many columns you have 4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16

4 3 2 1
8 7 6 5
12 11 10 9
16 15 14 13
PS D:\my codes\DSA_clg\lab 2 10.8.21_2d_dynamic>
```

LAB-3

```
//Q1.   WAP to add two distances (in kilometre-meter) by
//passing structure to a function.
#include <stdio.h>
struct dist
{
    int kilometre;
    int metre;
} ;
```

```c
void add_dis(struct dist s[2])
{
    int kilometre, metre;
    metre = s[0].metre + s[1].metre;

    kilometre = s[0].kilometre + s[1].kilometre + metre
/ 1000;
    metre = metre % 1000;
    printf("the added value of distance are %d kilometre
 %d metre ", kilometre, metre);
}

int main()
{ struct dist s[2];


    for (int i = 0; i < 2; i++)
    {
        printf("enter the distance %d in kilometre and m
etre ", i + 1);
        scanf("%d %d", &s[i].kilometre, &s[i].metre);
    }
add_dis(s);
    return 0;
}
```

OUTPUT-1

```c
//  Q2• You are given an array of 0s and 1s in random or
der.
// Segregate 0s on left side and 1s on right side of the
 array.
// Traverse array only once.
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int *p, n;
    printf("how many elements you have in the array ");
    scanf("%d", &n);

    p = (int *)malloc(n * sizeof(int));

    printf("Enter the elements ");

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

        scanf("%d",&p[i]);
    }
    for (int i = 0; i < n; i++)
    {

        printf("%d ", p[i]);
    }
    printf("\n");

    for (int i = 0, j = n-1; i <= n / 2 && j >= n / 2;)
    {
        if (p[i] == 1 && p[j] == 0)
        {
            int temp = p[i];
```

```
            p[i] = p[j];
            p[j] = temp;
            i++;
            j--;
        }
        else if (p[i] == 0 && p[j] == 0)
        {
            int temp = p[i + 1];
            p[i + 1] = p[j];
            p[j] = temp;
            i++;
        }
        else if (p[i] == 1 && p[j] == 1)
        {
            int temp = p[i];
            p[i] = p[j-1];
            p[j - 1] = temp;
            j--;
        }
        else
        {
            i++;
            j--;
        }
    }
    for (int i = 0; i < n; i++)
    {

        printf("%d ", *(p + i));
    }

return 0;
}
```

OUTPUT-2


```
//Q3•   Given an unsorted dynamic array arr and two numb
ers x and y, find the minimum distance between x and y
//in arr. The array might also contain duplicates. You m
ay assume that both x and y are different and present in
 arr.
//Input: arr[] = {3, 5, 4, 2, 6, 5, 6, 6, 5, 4, 8, 3}, x
 = 3, y = 6
//Output: Minimum distance between 3 and 6 is 4.

#include <stdio.h>
#include <stdlib.h>

int main()
{
    int *p, n, x, y,uplimit,lowerlimit;
    printf("how many elements you have in the array ");
    scanf("%d", &n);

    p = (int *)malloc(n * sizeof(int));

    printf("Enter the elements ");

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

```
        scanf("%d", &p[i]);
    }
    for (int i = 0; i < n; i++)
    {

        printf("%d ", p[i]);
    }

    printf("\nenter 2 elements you need to find the dist
ance ");
    scanf("%d %d", &x, &y);
    printf("\n");

    for (int i = 0; i <= n; i++)
    {
        if (p[i] == x)
        {
            lowerlimit = i;
            break;
        }

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

      if (p[i] == y)
        {
            uplimit = i;
            break;
        }

    }
    printf("difference b/w the 2 elemnts are %d ",uplimi
t-lowerlimit);
```

```
    return 0;
}
```

OUTPUT-3

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab3 17.8.21> cd "d:\my codes\DSA_clg\lab3 17.8.21\" ; if ($?) { gcc q3_array.c -o q3_array } ; if ($?)
{ .\q3_array }
how many elements you have in the array 6
Enter the elements 21
23
43
27
20
28
21 23 43 27 20 28
enter 2 elements you need to find the distance 21
28

difference b/w the 2 elemnts are 5
PS D:\my codes\DSA_clg\lab3 17.8.21>
```

```
//Q4•   Write a program in C to find the LCM ,HCF,GCD of
 two numbers using recursion
//by using menu driven switch case and functions.

#include <stdio.h>
void hcf(int a, int b, int i)
{     static int thcf = 1;
    if (a % i == 0 && b % i == 0)

        {
            thcf = thcf * i;
            hcf(a / i, b / i, 2);
        }

        else if (i <= a && i <= b)

            hcf(a,b,++i);
        else
        {

            printf("\nhcf of 2 no. is %d", thcf);
```

```
        }
}
  void lcm(int a, int b, int i)
{     static int tlcm = 1;
    if (a % i == 0 && b % i == 0)

        {
            tlcm = tlcm * i;
            lcm(a / i, b / i, 2);
        }

        else if (i <= a && i <= b)

            lcm(a,b,++i);
        else
        {

            printf("\n lcm of 2 no. is %d", tlcm*a*b);

        }
}

int main()
{
    int a, b;
    printf("Enter 2 no.s you want to calculate hcf anf l
cm");
    scanf("%d%d", &a, &b);
    lcm(a, b, 1);
    hcf(a, b, 1);
    return 0;
}
```

OUTPUT-4

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\my codes\DSA_clg\lab3 17.8.21> cd "d:\my codes\DSA_clg\lab3 17.8.21\" ; if ($?) { gcc q4_lcm_hcf.c -o q4_lcm_hcf } ; if (
$?) { .\q4_lcm_hcf }
Enter 2 no.s you want to calculate hcf anf lcm12
16

 lcm of 2 no. is 48
hcf of 2 no. is 4
PS D:\my codes\DSA_clg\lab3 17.8.21>
```

2005025_Hitu raj