#### Lab Report

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**Section- F**

**//Program 1**

#include <stdio.h>

void main()

{

int arr[10];

int i;

printf("\n\nRead and Print elements of an array:\n");

printf("-----------------------------------------\n");

printf("Input 10 elements in the array :\n");

for(i=0; i<10; i++)

{

printf("element - %d : ",i);

scanf("%d", &arr[i]);

}

printf("\nElements in array are: ");

for(i=0; i<10; i++) {

printf("%d ", arr[i]);

}

printf("\n");

}

**//Program 2**

#include <stdio.h>

void main()

{

int i,n,a[100];

printf("\n\nRead n number of values in an array and display it in reverse order:\n");

printf("------------------------------------------------------------------------\n");

printf("Input the number of elements to store in the array :");

scanf("%d",&n);

printf("Input %d number of elements in the array :\n",n);

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

{

printf("element - %d : ",i);

scanf("%d",&a[i]);

}

printf("\nThe values store into the array are : \n");

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

printf("% 5d",a[i]);

}

printf("\n\nThe values store into the array in reverse are :\n");

for(i=n-1;i>=0;i--)

{

printf("% 5d",a[i]);

}

printf("\n\n");

}

**//Program 3**

#include <stdio.h>

void main()

{

int a[100];

int i, n, sum=0;

printf("\n\n sum of all elements of array:\n");

printf("--------------------------------------\n");

printf("Input the number of elements to be stored in the array :");

scanf("%d",&n);

printf("Input %d elements in the array :\n",n);

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

{

printf("element - %d : ",i);

scanf("%d",&a[i]);

}

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

{

sum += a[i];

}

printf("Sum : %d\n\n", sum);

}

**//Program 4**

#include <stdio.h>

#define MAX\_SIZE 100

int main()

{

int arr[MAX\_SIZE];

int i, j, size, count = 0;

printf("Enter size of the array : ");

scanf("%d", &size);

printf("Enter elements in array : ");

for(i=0; i<size; i++)

{

scanf("%d", &arr[i]);

} for(i=0; i<size; i++)

{

for(j=i+1; j<size; j++)

{

if(arr[i] == arr[j])

{

count++;

break;

}

}

}

printf("\nTotal number of duplicate elements found in array = %d", count);

return 0;

}

**//Program 5**

#include <stdio.h>

int main()

{

int arr1[100], n,ctr=0;

int i, j, k;

printf("\n\nPrint all unique elements of an array:\n");

printf("------------------------------------------\n");

printf("Input of elements to be stored in the array: ");

scanf("%d",&n);

printf("Input %d elements in the array :\n",n);

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

{

printf("element - %d : ",i);

scanf("%d",&arr1[i]);

}

printf("\nThe unique elements found in the array are: \n");

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

{

ctr=0;

for(j=0,k=n; j<k+1; j++)

if (i!=j)

{

if(arr1[i]==arr1[j])

{

ctr++;

}

}

}

if(ctr==0)

{

printf("%d ",arr1[i]);

}

}

printf("\n\n");

}

**//Program 6**

#include<stdio.h>

int main(){

int i,f=1,num;

printf("Enter a number: ");

scanf("%d",&num);

  for(i=1;i<=num;i++)

f=f\*i;

printf("Factorial of %d is: %d",num,f);

return 0;

}

**//Program 7**

#include <stdio.h>

int main() {

int n, i, flag = 0;

printf("Enter a positive integer: ");

scanf("%d", &n);

if (n == 0 || n == 1)

flag = 1;

for (i = 2; i <= n / 2; ++i) {

if (n % i == 0) {

flag = 1;

break;

}

}

if (flag == 0)

printf("%d is a prime number.", n);

else

printf("%d is not a prime number.", n);

return 0;

}

**//Program 8**

#include <stdio.h>

void main()

{

int i,n;

float s=0.0;

printf("Input the number of terms : ");

scanf("%d",&n);

printf("\n\n");

for(i=1;i<=n;i++)

{ if(i<n)

{

printf("1/%d + ",i);

s+=1/(float)i;

}

if(i==n)

{

printf("1/%d ",i);

s+=1/(float)i;

}

}

printf("\nSum of Series upto %d terms : %f \n",n,s);

}

**//Program 9**

#include <stdio.h>

void main()

{

int i,n,sum=0;

printf("Input number of terms : ");

scanf("%d",&n);

printf("\nThe odd numbers are :");

for(i=1;i<=n;i++)

{

printf("%d ",2\*i-1);

sum+=2\*i-1;

}

printf("\nThe Sum of odd Natural Number upto %d terms : %d \n",n,sum);

}

**//Program 10**

#include < stdio.h >

int main()

{

int m, n, c, d, first[10][10], second[10][10], sum[10][10];

printf("Enter the number of rows and columns of matrix\n");

scanf("%d%d", & m, & n);

printf("Enter the elements of first matrix\n");

for (c = 0; c < m; c++)

for (d = 0; d < n; d++) scanf("%d", & first[c][d]);

printf("Enter the elements of second matrix\n");

for (c = 0; c < m; c++)

for (d = 0; d < n; d++) scanf("%d", & second[c][d]);

printf("Sum of entered matrices:-\n");

for (c = 0; c < m; c++)

{

for (d = 0; d < n; d++)

{

sum[c][d] = first[c][d] + second[c][d];

printf("%d\t", sum[c][d]);

}

printf("\n");

}

return 0;

}

**//Program 11**

#include <stdio.h>

void main()

{

int arr1[3][3],i,j;

printf("\n\nRead a 2D array of size 3x3 and print the matrix :\n");

printf("------------------------------------------------------\n");

printf("Input elements in the matrix :\n");

for(i=0;i<3;i++)

{

for(j=0;j<3;j++)

{

printf("element - [%d],[%d] : ",i,j);

scanf("%d",&arr1[i][j]);

}

}

printf("\nThe matrix is : \n");

for(i=0;i<3;i++)

{

printf("\n");

for(j=0;j<3;j++)

printf("%d\t",arr1[i][j]);

}

printf("\n\n");

}

**//Program 12**

#include <stdio.h>

void main()

{

int arr1[50],n,i,j=0,sml,sml2nd;

printf("\n\nFind the second smallest element in an array :\n");

printf("--------------------------------------------------\n");

printf("Input the size of array : ");

scanf("%d", &n);

printf("Input %d elements in the array (value must be <9999) :\n",n);

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

{ printf("element - %d : ",i);

scanf("%d",&arr1[i]);

}

sml=arr1[0];

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

{

if(sml>arr1[i])

{

sml=arr1[i];

j = i;

}

}

sml2nd=99999;

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

{

if(i==j)

{

i++;

i--;

}

else

{

if(sml2nd>arr1[i])

{

sml2nd=arr1[i];

}

}

}

printf("The Second smallest element in the array is : %d \n\n", sml2nd);

}

**//Program 13**

#include <stdio.h>

void main()

{

int arr1[100];

int n, i, j, tmp;

printf("\n\nsort elements of array in ascending order :\n ");

printf("----------------------------------------------\n");

printf("Input the size of array : ");

scanf("%d", &n);

printf("Input %d elements in the array :\n",n);

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

{

printf("element - %d : ",i);

scanf("%d",&arr1[i]);

}

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

{

for(j=i+1; j<n; j++)

{

if(arr1[j] <arr1[i])

{

tmp = arr1[i];

arr1[i] = arr1[j];

arr1[j] = tmp;

}

}

}

printf("\nElements of array in sorted ascending order:\n");

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

{

printf("%d ", arr1[i]);

}

printf("\n\n");

}

**//Program 14**

#include <stdio.h>

void main()

{

int arr1[100];

int i, mx, mn, n;

printf("\n\nFind maximum and minimum element in an array :\n");

printf("--------------------------------------------------\n");

printf("Input the number of elements to be stored in the array :");

scanf("%d",&n);

printf("Input %d elements in the array :\n",n);

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

{

printf("element - %d : ",i);

scanf("%d",&arr1[i]);

}

mx = arr1[0];

mn = arr1[0];

for(i=1; i<n; i++)

{

if(arr1[i]>mx)

{

mx = arr1[i];

}

if(arr1[i]<mn)

{

mn = arr1[i];

}

}

printf("Maximum element is : %d\n", mx);

printf("Minimum element is : %d\n\n", mn);

}

**//Program 15**

#include <stdio.h>

void main()

{

int arr1[100], arr2[100], arr3[200];

int s1, s2, s3;

int i, j, k;

printf("\n\nMerge two arrays of same size sorted in decending order.\n");

printf("------------------------------------------------------------\n");

printf("Input the number of elements to be stored in the first array :");

scanf("%d",&s1);

printf("Input %d elements in the array :\n",s1);

for(i=0;i<s1;i++)

{

printf("element - %d : ",i);

scanf("%d",&arr1[i]);

}

printf("Input the number of elements to be stored in the second array :");

scanf("%d",&s2);

printf("Input %d elements in the array :\n",s2);

for(i=0;i<s2;i++)

{

printf("element - %d : ",i);

scanf("%d",&arr2[i]);

s3 = s1 + s2;

for(i=0;i<s1; i++)

{

arr3[i] = arr1[i];

}

for(j=0;j<s2; j++)

{

arr3[i] = arr2[j];

i++;

}

for(i=0;i<s3; i++)

{

for(k=0;k<s3-1;k++)

{

if(arr3[k]<=arr3[k+1])

{

j=arr3[k+1];

arr3[k+1]=arr3[k];

arr3[k]=j;

}

}

}

printf("\nThe merged array in decending order is :\n");

for(i=0; i<s3; i++)

{

printf("%d ", arr3[i]);

}

printf("\n\n");

}