**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Kattankulathur**





**School of Computing**

**21CSC201J – Data Structures and Algorithms**

**Topic: Array Implementation of Lists**

**Activity: Simple Programming Practice**

**1. Find the max and min elements in an array**

#include <stdio.h>

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d", &n);

int arr[n];

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

int max=arr[0], min=arr[0];

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

if(arr[i]>max) max=arr[i];

if(arr[i]<min) min=arr[i];

}

printf("Max = %d\n", max);

printf("Min = %d\n", min);

return 0;

}

**2. Count frequency of each element in an array**

#include <stdio.h>

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d", &n);

int arr[n], freq[n];

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

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

freq[i]=-1;

}

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

if(freq[i]==-1){

int count=1;

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

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

count++;

freq[j]=0;

}

}

freq[i]=count;

}

}

printf("Element : Frequency\n");

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

if(freq[i]>0)

printf("%d : %d\n", arr[i], freq[i]);

}

return 0;

}

**3. Separate out the negatives, positives and zeroes**

#include <stdio.h>

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d",&n);

int arr[n];

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

printf("Negative numbers: ");

for(int i=0;i<n;i++) if(arr[i]<0) printf("%d ",arr[i]);

printf("\nZeroes: ");

for(int i=0;i<n;i++) if(arr[i]==0) printf("%d ",arr[i]);

printf("\nPositive numbers: ");

for(int i=0;i<n;i++) if(arr[i]>0) printf("%d ",arr[i]);

return 0;

}

**4. Reverse the array elements**

#include <stdio.h>

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d",&n);

int arr[n];

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

printf("Reversed array: ");

for(int i=n-1;i>=0;i--) printf("%d ",arr[i]);

return 0;

}

**5. Print odd numbers in an array**

#include <stdio.h>

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d",&n);

int arr[n];

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

printf("Odd numbers: ");

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

if(arr[i]%2!=0)

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

return 0;

}