Exercise 1:

Write a program to find Largest Number Using Dynamic Memory Allocation from a list of elements. You have to input total size of elements and depending upon the number of elements, the required size has to be allocated using DMA.

Example:

Input size of array: 5

Array element: 1 2 3 4 5

Expected Output: 5

#include <iostream>

#include<stdlib.h>

using namespace std;

int main()

{

int n,\*p;

cout<<"Input size of array:\n";

cin>>n;

cout<< "Enter array element one by one:\n";

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

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

{

cin>>\*(p+i);

}

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

{

if(\*(p+0)<\*(p+i)){\*(p+0)=\*(p+i);}

}

cout<<"Expected Output: "<<\*p+0<<endl;

return 0;

}

Exercise 2:

Write a program to sort an array using Pointer. You have to write a function sortarray (int n, int\*p) where n is the total array size and p is a pointer variable that have array address to solve the problem.

Input 5 number of elements in the array: 25 45 89 15 82

Expected Output: 15 25 45 82 89

#include <iostream>

#include<stdlib.h>

using namespace std;

int sort(int \*P,int n)

{

int temp;

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

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

{

if(\*(P+i)>\*(P+j))

{

temp=\*(P+i);

\*(P+i)=\*(P+j);

\*(P+j)=temp;

}

}

}

int main()

{

int n,\*p;

cout<<"Input size of array:\n";

cin>>n;

cout<< "Enter array element one by one:\n";

int a[n];

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

{

cin>>a[i];

}

sort(&a[0],n);

cout<<"\nSort:"<<endl;

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

{

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

}

return 0;

}

Exercise 3:

Write a program that will delete all negative number by using Pointer. You have to declare a pointer array and dynamically allocate memory to input elements of array.

#include <iostream>

#include<stdlib.h>

using namespace std;

int main()

{

int n,\*p,k;

cout<<"Input size of array:\n";

cin>>n;

cout<< "Enter array element one by one:\n";

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

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

{

cin>>\*(p+i);

}

cout<<"\nAfter deletion:"<<endl;

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

{

if(\*(p+i)<0)

{

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

{

k=j+1;

\*(p+j)=\*(p+k);

}

i--;

n--;

}

}

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

{

cout<<(\*(p+i))<<" ";

}

return 0;

}

Exercise 4:

Write a program that will input student’s information (i.e. name, id, cgpa) who have enrolled for CSE-207 course in Summer 2020. You have to declare a pointer variable to input the information and dynamically allocate memory for storing information of each students. After taking input find out the student’s name who has obtained highest cgpa.

#include <iostream>

#include<stdlib.h>

#include <cstdio>

using namespace std;

struct student

{

char name[100];

char id[100];

float cgpa;

};

int main()

{

struct student \*p;

int n;

cout<<"Input total student number:\n";

cin>>n;

cout<< "Enter information of the students one by one:\n\n";

p = (struct student \*)malloc(n \* sizeof(struct student));

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

{

cout<< "Student "<< i+1<<":"<<endl;

cout<<"Name:\n";

cin>>(p+i)->name;

cout<<"ID:\n";

cin>>(p+i)->id;

cout<<"CGPA:\n";

cin>>(p+i)->cgpa;

cout<<"\n";

}

int k=0;

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

{

if((p)->cgpa < (p+i)->cgpa)

{

p->cgpa = (p+i)->cgpa;

k=i;

}

}

cout<<"\nWho has obtained highest CGPA:"<<endl;

cout<<"Name: "<<(p+k)->name<<endl;

cout<<"ID: "<<(p+k)->id<<endl;

cout<<"CGPA: "<<(p+k)->cgpa<<endl;

return 0;

}