IM/2019/109-Numaya Pradeepani

Homework 8

Q1

Write a program to print the address of a variable whose value is input from user

```
#include<iostream>
using namespace std;
int main(){
	double value;
	cout<<"Enter any value:";
	cin>>value;
	cout<<&value<<endl;
	return 0;

}
```

Q2

Write a program to print the address of the pointer to a variable whose value is input from user

```
#include<iostream>
using namespace std;
int main(){
        int  value;
        int *pointer;
        cout<<"Enter any value:";
        cin>>value;
        cout<<endl;
        pointer= &value;
        cout<<"Value="<<value<<endl;
        cout<<endl;
        cout<<"Address of the value="<<pointer<<endl;
        cout<<"Address of the pointer="<<&pointer<<endl;
        return 0;
}
```

Q3

Write a program to print the value of the address of the pointer to a variable whose value is i nput from user

```
#include<iostream>
using namespace std;
int main (){
        int  value;
        int *pointer;
        cout<<"Enter any value:";
        cin>>value;
        cout<<endl;
        pointer= &value;
        *pointer=500;
        cout<<endl;
        cout<<"Value of the pointer="<< value<<endl;
        cout<<endl;
   cout<<"Address of the value="<<pointer<<endl;
        return 0;
}
```

Q4 **Write a program to print a number which is entered from keyboard using pointer**

```
#include<iostream>
using namespace std;
int main(){
        int  value;
        cout<<"Enter any value:";
        cin>>value;
        cout<<endl;
        cout<< *(&value)<<endl;
        cout<<endl;
        return 0;
}
```

Q5 **Write a function which will take pointer and display the number on screen. Take number from user and print it on screen using that function**

```
#include<iostream>
using namespace std;

void getvalue(int *ptr){
        cout<<"User inserted value is" << *ptr << endl;
}
int main (){
        int userinput;
        cout<<"Please enter your input:";
        cin>>userinput;
        getvalue(&userinput);
}
```

Q6

Write a program to find out the greatest and the smallest among three numbers using pointers.

```
#include<iostream>
using namespace std;
int main (){
        int num1,num2,num3;
        int *pointer1,*pointer2,*pointer3;
        cout<<"Enter first value:";
        cin>>num1;
        cout<<endl;
        cout<<"Enter second value:";
        cin>>num2;
        cout<<endl;
        cout<<"Enetr third value:";
        cin>>num3;
        cout<<endl;

        pointer1=&num1;
        pointer2=&num2;
        pointer3=&num3;

        if(*pointer1>*pointer2){
                if(*pointer1>*pointer3){
                        cout<<"The largest value is :"<<*pointer1<<endl;
                }
          else{
                cout<<"The largest value is :"<<*pointer3<<endl;
```

```
        }
}

else {
        if(*pointer2>*pointer3){
                cout<<"The largest value is :"<<*pointer2<<endl;
        }
        else {
                cout<<"The largest value is :"<<*pointer3<<endl;
        }

}


if(*pointer1<*pointer2){
        if(*pointer1<*pointer3){
                cout<<"The smallest value is :"<<*pointer1<<endl;
        }
   else{
        cout<<"The smallest value is :"<<*pointer3<<endl;

        }
}

else {
        if(*pointer2<*pointer3){
                cout<<"The smallest value is :"<<*pointer2<<endl;
        }
```

```
            else {
                cout<<"The smallest value is :"<<*pointer3<<endl;
            }

    }

    return 0;
}
```

Q7

Write a program to find the factorial of a number using pointers

```
#include<iostream>
using namespace std;
int main (){
	int value;
	int *pointer;
	double factorial=1;
	cout<<"Enter a number:";
	cin>>value;
	pointer=&value;
	for (int i=1;i<=*pointer;i++) {
		factorial=factorial*i;
	}
	cout<<"Factorial of Given Number is ="<<" "<<factorial<<endl;
	return 0;
}
```

Q8

Write a program to reverse the digits a number using pointers.

```
#include <iostream>
using namespace std;

int main() {
   int n, reversedNumber = 0, remainder;
   int *pointer;

   cout << "Enter an integer: ";
   cin >> n;
   pointer=&n;

   while(*pointer != 0) {
      remainder = *pointer%10;
      reversedNumber = reversedNumber*10 + remainder;
      *pointer /= 10;
   }

   cout << "Reversed Number = " << reversedNumber;

   return 0;
}
```

Q9

Write a program to store n elements in an array and print the elements using pointer

```
#include<iostream>
using namespace std;
int main(){
	int array[5];

	cout<<"Enter elements:"<<endl;
	for(int i=0; i<5; i++){
		cin>>array[i];
	}
	int *pointer=array;
	cout<<"You entered values:"<<endl;
	for( int i=0; i<5; i++){
		cout<<endl<<*(pointer+i);
	}
	return 0;
}
```

Q10

Write a program to Calculate the length of the string using a pointer

```
#include<iostream>
using namespace std;
int main(){
	char string[5000],*pointer;
	int i=0;
	cout<<"Enter any string:";
	cin>>string;

	pointer=string;
	while(*pointer!='\0'){
		i++;
		pointer++;
	}
	cout<<"Lenght of the string:"<<i<<endl;
}
```

Q11 Write a program to count the number of vowels and consonants in a string using a pointer

```
#include<iostream>
using namespace std;
int main (){
	char string[5000],*pointer;
	int consonants=0,vowels=0;
	cout<<"Enter any string:";
	cin>>string;
	pointer=string;
	while(*pointer!='\0'){
		if(*pointer=='a'|| *pointer=='A'|| *pointer=='e'|| *pointer=='E'||
*pointer=='i'|| *pointer=='I'|| *pointer=='o'|| *pointer=='O'|| *pointer=='u'||
*pointer=='U'){
			vowels++;
		}
		else{
			consonants++;
		}
		pointer++;
	}
	cout<<"Number of consonants:"<< consonants<<endl;
	cout<<"Number of vowels:"<< vowels <<endl;

}
```

Q12

Write a program in C to sort an array using Pointer

```
#include<iostream>
using namespace std;
int main(){
	int number;
	int *pointer;
	int arr[number];

	cout<<"Enter the number of inputs:";
	cin>>number;
	pointer= &number;

	for(int k=0;k<*pointer;k++){
		cout<<"Enter Number"<<(k+1)<<":";
		cin>>arr[k];
	}

	for(int i=0; i<*pointer; i++){
		for(int j=i+1; j<*pointer; j++){
			if(arr[i]>arr[j]){
				int temp=arr[i];
				arr[i]=arr[j];
				arr[j]=temp;
			}
		}
	}
	cout<<"Elements of array in sorted ascending order:"<<endl;
```

```
    for(int i=0; i<*pointer; i++)
    {
       cout<<arr[i]<<endl;
    }
          return 0;
}
```