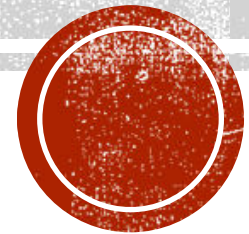


C++ EXERCISES

Lab 12



PROBLEM(1)

- Write a c++ program that takes a list of N positive numbers from the user and then display the min and max.



Solution

```
int main( )
{
    int n, counter=0, num, min=9999, max=-1;
    cout<<"enter the length of the list"<<endl;
    cin>>n;
    while(counter<n)
    {
        cin>>num;
        if(num>max)
            max=num;
        if(num <min)
            min=num;
        cin>>num;
        counter++;
    } cout<<"Max: "<<max<<" Min: "<<min<<endl;
    return 0;
}
```



PROBLEM(2)

- When Robin's new baby was born, she opened a savings account with \$1000. On each birthday, starting with the first, the bank adds 4.5% of the balance and Robin added another \$500 to the account. Write a C++ code that will determine how much money will be in the account on the child's 18th birthday?



Solution

```
int main (){  
    int balance=1000;  
    for (int i=1;i<=18;i++)  
    {  
        balance+=balance*0.045;  
        balance+=500;  
    }  
    cout<<balance;  
    return 0;}
```



PROBLEM(3)

- Write a c++ program that asks the user to enter 2 sentences then the program should display which sentence is longer or the two sentences lengths are equal



Solution

```
int main (){
int len_1=0,len_2=0;
char ch;
cout<<"Enter the first
sentence"<<endl;
ch=getchar();
while(ch!='\n')
{
    len_1++;
    ch=getchar();
}
cout<<"Enter the second
sentence"<<endl;
ch=getchar();
```

```
while(ch!='\n')
{
    len_2++;
    ch=getchar();
}
if(len_1>len_2)
    cout<<"first sentence
is longer"<<endl;
else if(len_2>len_1)
    cout<<"second
sentence is longer"<<endl;
else
    cout<<"Equal"<<endl;
}
return 0;
```



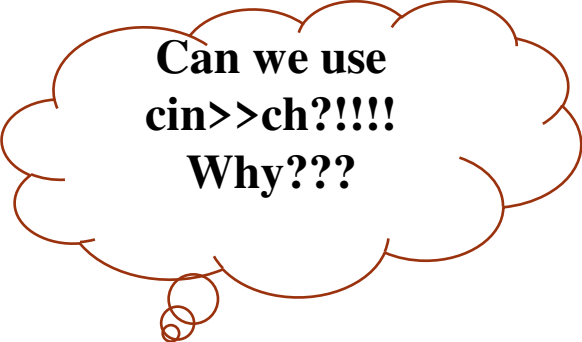
PROBLEM(4)

- Write a c++ program that asks the user to enter a list of characters and when the user hits 'Enter' the program should display the number of capital letters entered.



Solution

```
int main (){  
    int num_of_letters= 0;char ch=' '  
    while(ch!='\n')  
    {  
        ch=getchar();  
        if(ch>='A'&&ch<='Z')  
            num_of_letters ++;  
    }  
    cout<< num_of_letters;  
    return 0;  
}
```



Can we use
cin>>ch?!!!!
Why???



PROBLEM(5)

- Write C++ program for a fast food restaurant. The user enters meal components one by one
- and when he finishes he enters 'f'. Then the program displays the price according to the following menu.

Sample Run:

What do you want to buy: s

What do you want to buy: i

What do you want to buy: p

What do you want to buy: f

Price: 50

Item	Price
s (sandwich)	25
p (potatoes)	10
j (juice)	10
i (ice cream)	15



Solution

```
int main(){
int sum=0;char ch='\0';
while(ch!='f')
{
    cout<<"What do you want
to buy?"<<endl;
    cin>>ch;
    switch(ch)
    {case's':
        sum+=25;
        break;
    case'p':
        sum+=10;
        break;
    case'j':
        sum+=10;
        break;
```

```
    case'i':
        sum+=15;
        break;
    case'f':
        break;
    default:
        cout<<"invalid
choice"<<endl;
    }
}
    cout<<"Price="<<sum;
return 0;
}
```



PROBLEM(6)

- Write a c++ program to generate the following output.

ABCDE

ABCD

ABC

AB

A



Solution

```
int main(){  
for(char i=5;i>=0;i--)  
{  
    for(char j='A';j<='A'+i-1;j++)  
        cout<<j;  
    cout<<endl;  
}  
return 0;  
}
```



PROBLEM(7)

- Write a program that asks the user to enter 10 integers. The program must output the largest element and the index at which that element was entered.



Solution

```
int main(){int num,index=-1,max=-1;
for(int i=1;i<=10;i++)
{
    cin>>num;
    if(num>max)
    {
        max=num;
        index=i;
    }
}
```

```
if(index==1)
cout<<"The max value is"<<max
<< "in the "<<index<<" st
place"<<endl;
else if(index==2)
cout<<"The max value is"<<max
<< "in the "<<index<<" nd
place"<<endl;
else
cout<<"The max value is"<<max
<< "in the "<<index<<" th
place"<<endl;
return 0;
}
```



PROBLEM(8)

- Write a C++ program that takes from the user 3 numbers and displays them sorted in ascending order.



Solution

```
int main(){int a,b,c;  
cin>>a>>b>>c;  
    if(a>b){  
        swap(a,b);  
    }  
    if(a>c){  
        swap(a,c);  
    }  
    if(b>c){  
        swap(b,c);  
    }  
cout<<a<<b<<c;  
return 0;  
}
```



PROBLEM(9)

- **Write a C++ Program to Reverse an Integer entered by the user.**



Solution

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

    cout << "Enter an integer: ";
    cin >> n;
    while (n != 0)
    {
        remainder = n%10;
        reversedNumber = reversedNumber*10 + remainder;
        n /= 10;
    }
    cout << "Reversed Number = " << reversedNumber;
}
return 0;
```



PROBLEM(10)

- **Write a C++ Program to find the sum of the following series.**

$1/2 + 3/4 + 5/6 + 7/8 + 9/10 + 11/12 + \dots$ up to n terms.

- Sample run:
- Enter n : 5
- The series till 5 is : 3.85833



Solution

```
int main(){int n,i;
float sum=0.0,num=1.0,den=2.0;
cout<<"Enter n : ";
cin>>n;
for(i=1 ; i<=n ; i++,num=num+2.0,den=den+2.0)
{
    sum=sum+num/den;
}
cout<<"The series till "<<n<<"is : "<<sum;
}
return 0;
```



GOOD LUCK!!

