

a)

$f(x) = O(g(x))$ means there are positive constants c and x_0 , such that $0 \leq f(x) \leq cg(x)$ for all $x \geq x_0$

```
#include <iostream.h>
#include <conio.h>
#include <stdio.h>
#include <string.h>
#include <fstream.h>
#include <process.h>
#include <stdlib.h>
```

```
class list
```

```
{
    int count;
    char serial[30][30];
    char name[30][30];
    char price[30][30];
    char quality[30][30];
    char quantity[30][30];
public:
    void goods();
    void order_goods();
    void show_goods();
};
```

```
void list::order_goods()
```

```
{
    char pid[30];
    long qid;
    int found=0;
    cout<<"Enter Product id: ";
```

```

cin>>pid;
int v;
for(v=0;v<count;v++)
{
if(strcmp(serial[v],pid)==0)
{
found=1;
break;
}
}
if(found==1)
{
char read;
cout<<"Enter quantity(kg): ";
cin>>qid;
AA:
cout<<"Are you sure of ordering "<<qid<<" kg of "<<name[v];
cout<<"\nEnter (y/n)";
cin>>read;
if(read==121)
{
fstream fout;
fout.open("list.txt",ios::out);
long sum=0;
int d=1;
for(int s=strlen(quantity[v])-1;s>=0;s--)
{
sum+=(quantity[v][s]-48)*d;
d*=10;
}
sum+=qid;

```

```

//sum=(long)quantity[v];
//cout<<"sum"<<sum;

itoa(sum,quantity[v],10);

for(int m=0;m<count;m++)
{
fout<<serial[m]<<" ";
fout<<name[m]<<" ";
fout<<price[m]<<" ";
fout<<quality[m]<<" ";
fout<<quantity[m]<<" "<<"\n";
}
long ati=atoi(price[v])*qid;
cout<<"\n"<<ati <<" taka has been truncated from shop account\n";
}
else if(read==110);
else
{

goto AA;
}
//char y='n';
//printf("%d",y);
}
}

void list::goods()
{
char pricestr[20];
char str[2000];

```

```
ifstream fin;
fin.open("list.txt",ofstream::in);

//char s[2000];
count=0;
while(fin>>str)
{

int savei=0;
//cout<<str;
// cout<<strlen(str)<<" ";
int i=0;
int d=0;
while(i<strlen(str))
{

if(str[i]==';')
{

//cout<<"Savei="<<savei<<"\t"<<"i="<<i<<" ";
char s[30];
int l=0;
for(int j=savei;j<i;j++)
{
s[l]=str[j];
l++;
}
s[l]='\0';
if(d==0)
strcpy(serial[count],s);
else if(d==1)
```

```
strcpy(name[count],s);
else if(d==2)
strcpy(price[count],s);
else if(d==3)
strcpy(quality[count],s);
else if(d==4)
strcpy(quantity[count],s);
d++;
//cout<<"strlen="<<l<<" ,s="<<s<<"\n";
//char tab='\t';
//printf("%5c",tab);

i++;
savei=i;
}
//printf("%c",str[i]);

i++;

}
count++;
if(fin.eof())
break;
//cout<<"\n";
}
fin.close();

}
void list::show_goods()
{
```

```

    cout<<"p-id\t name\t price\t quality\tquantity(kg)\n";
    cout<<"-----\n";
    for(int v=0;v<count;v++)
    {
        printf("%s",serial[v]);
        printf("%8s",name[v]);
        printf("%8s",price[v]);
        printf("%15s",quality[v]);
        printf("%10s",quantity[v]);
        printf("\n");
    }
}
void main()
{
A:

    cout<<"Make your choice:\n[1] For see products\n[2] For order products\n[3] For quit\n\n";
    list ob;
    char a;
    cin>>a;

    ob.goods();
    if(a==49)
    ob.show_goods();
    else if(a==50)
    ob.order_goods();
    else if(a==51)
    exit(0);
    else
    goto A;
    cout<<"\n\nPress any key to return to Main Menu.";

```

```
getch();  
goto A;  
  
}
```