# NATIONAL PUBLIC SCHOOL
# COMPUTER SCIENCE PROJECT
# ARMS REGISTRY


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Class: XII

Register Number:

# ACKNOWLEDGEMENT

I would sincerely like to thank National Public School, Rajajinagar for giving me an opportunity to work on this project. I would also like to thank Mrs. Bhargavi for her help and guidance. Her constant support and encouragement has enabled me to complete this project successfully.

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# INDEX

# ABOUT C++

C++ is an Object Oriented Programming (OOP) language, developed by Bjarne Stroustrup and is an extension of C language. It is therefore possible to code C++ in a “C Style” or “Object-Oriented style”. In certain scenarios, it can be coded in either way and is thus an effective example of a hybrid language.

C++ is a general purpose object oriented programming language. It is considered to be an intermediate level language, as it encapsulates both high level and low level language features. Initially, the language was called, “C with Class” as it had all the properties of C language, but with an additional concept of ‘classes’. However, it was renamed to ‘C++’ in 1983.

# ABOUT THE PROJECT

This project entitled ‘Arms Registry’ makes use of concepts such as ‘File Handling’ and ‘Object Oriented Programming’ in C++.

These concepts enable features such as addition and deletion of weapon details in the catalogue and printing of final receipt among other functions.

The project aims to create a better understanding of online weapons purchasing. It also gives me a chance to explore firearms and gave me an excellent opportunity to understand the importance of a friendly and clutter-free User Interface.

# HEADER FILES

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

# FILES USED

PRODUCT.dat – Binary File

Temp.dat – Binary File

BILL.dat – Binary File (For final receipt)

# CLASSES USED:

(with member functions)

1. Menu(class)

- main_menu() -Main Menu that contains all functions
- edit_menu() -provides option to add and delete items to list

2. Product(class)

- add(); -adds new items to the catalogue
- delet(); -deletes selective item from catalogue
- list(); -displays entire catalogue
- buy(); -allows purchase of item based on code

Public members:

- delete_record(int); -deletes item from catalogue
- insert(int);
- display_record(int); -displays cumulative of all purchase sessions
- found(int); - int -function to check if code input matches pre-existing record
- recordno(int); - int -function that keeps track of all the records by assigning codes to each item
- sort(); -sorts records on the basis of code of item
- code; - int
- name[30]; - char
- cost; - float
- price; - float

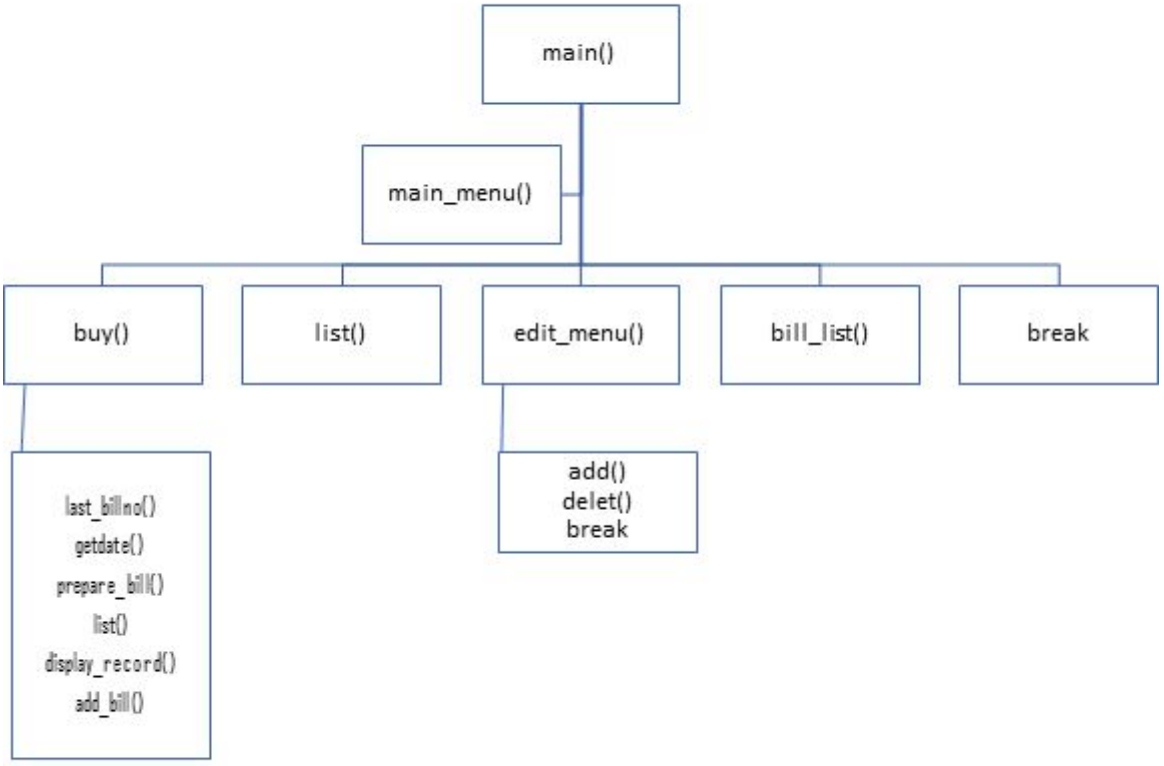
3. Account(class)

- code - int
- billno - int
- length - int
- dd - int
- mm - int
- yy - int
- cost - float
- price - float
- quantity - float
- name[30]; - char

Public:

- bill_list();
- prepare_bill(int);
- last_billno();
- add_bill();

# FLOW OF CONTROL



# Source Code

```
// PROJECT FINAL

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

class menu
{
 public :
        void main_menu();

private :
        void edit_menu();
} ;


class product
{
```

```
public :
        void add();
        void delet();
        void modify();
        void list();
        void buy();
private :
        int last_code();
        void delete_record(int);
        void insert(int);
        void display_record(int);
        int found(int);
        int recordno(int);
        void sort();

        int code;
        char name[30];
        float cost, price;
} ;



/* CLASS NAME : Account
 DETAILS : IT CONTROLS ALL THE FUNCTIONS
 RELATED TO MAKING BILL
*/
```

```
class account
{
public :
        void bill_list();
        void prepare_bill(int);
        int last_billno();
        void add_bill(int, int t_itemcode, char *t_itemname, float t_qty,
float t_cost, float t_price);
private :
        int code, billno, length;
        int dd, mm, yy;
        float cost, price, quantity;
        char name[30];
} ;



void menu :: main_menu()
{
        clrscr();
        char ch;
        while (1)
        {
                clrscr();
                gotoxy(10,3);
                cout<<"------------------------------------------------------------";
```

```
gotoxy(10,23);
cout<<"------------------------------------------------------------";
gotoxy(28,6);
cout<<" A M M U - N A T I O N ";
gotoxy(28,7);
cout<<"----------------------";
gotoxy(30,9);
cout<<"1: BUY Weapon";
gotoxy(30,11);
cout<<"2: CATALOGUE";
gotoxy(30,13);
cout<<"3: EDIT PRODUCTS FILE";
gotoxy(30,15);
cout<<"4: PRINT RECEIPT";
gotoxy(30,17);
cout<<"0: QUIT";
gotoxy(30,20);
cout<<"Enter Your Choice : ";
ch = getche();
if (ch == '1')
{
        product p;
        p.buy();
}
else if (ch == '2')
{
```

```
                product p;
                p.list();
        }
        else if (ch == '3')
              edit_menu();
        else if (ch == '4')
        {
                account a;
                a.bill_list();
        }
        else if (ch == '0')
                break;
    }
}


void menu :: edit_menu()
{
    char ch ;
    while (1)
    {
        clrscr() ;
        gotoxy(10,3);
        cout<<"------------------------------------------------------------";
        gotoxy(10,23);
        cout<<"------------------------------------------------------------";
```

```
gotoxy(34,6);
cout<<"E D I T   M E N U ";
gotoxy(32,7);
cout<<"----------------------";
gotoxy(32,5);
cout<<"----------------------";
gotoxy(32,10);
cout<<"1. A D D ";
gotoxy(32,14);
cout<<"2. D E L E T E ";
gotoxy(32,18);
cout<<"0. E X I T ";
gotoxy(32,20);
cout<<"Enter Choice : ";
ch = getche();

if (ch == '1')
{
        product p;
        p.add();
        break;
}

else if (ch == '2')
{
        product p;
```

```
                        p.delet();
                        break;
                }
                else if (ch == '0')
                        break;
        }
}



int product :: last_code()
{
        fstream file;
        file.open("PRODUCT.DAT", ios::in);
        file.seekg(0,ios::beg);
        int t=0;

        while (file.read((char *) this, sizeof(product)))
                t = code;

        file.close();
        return t;
}
```

```
void product :: list()
{
        clrscr();
        fstream file;
        file.open("PRODUCT.DAT", ios::in);
        file.seekg(0);
        int row = 6 , found = 0;

       gotoxy(25,2);
        cout <<"LIST OF ITEMS";

       gotoxy(3,4);
        cout <<" CODE       NAME          COST          PRICE";

       gotoxy(4,5);
        cout <<"**************************************************";

       while (file.read((char *) this, sizeof(product)))
        {
                //delay(20);
                found = 1;
                gotoxy(5,row);
                cout<<code;
                gotoxy(14,row);
                cout<<name;
                gotoxy(30,row);
```

```
                cout<<cost;
                gotoxy(45,row);
                cout<<price;
                if (row==22)
                {
                        row = 5;

                    gotoxy(1,25);
                        cout <<"Press any key to continue...";
                        getche();    //Registers any key-press
                        clrscr();

                    gotoxy(30,2);
                        cout <<"LIST OF ITEMS";

                    gotoxy(3,4);
                        cout <<"ITEM CODE    ITEM NAME    ITEM
COST   ITEM PRICE";

                    gotoxy(2,5);
                        cout <<"-----------------------------------------------";
                }
                else
                        row++;
        }
        if (!found)
```

```
        {
                gotoxy(5,10);
                cout<<"\n Records not found";
        }
        gotoxy(1,25) ;
        cout <<"\n Press any key to continue." ;
        getche() ;
        file.close () ;
}

// THIS FUNCTION ADDS RECORDS IN PRODUCT.DAT

void product :: add()
{
        int tcode, valid ;
        char ch, t_cost[10], t_price[10] ;
        tcode = last_code() ;
        tcode++ ;
        do
        {
                clrscr() ;
                gotoxy(71,2) ;
                cout <<"<0>=Exit" ;
                gotoxy(32,3) ;
                cout <<"ADDITION " ;          //Indented. Use this as Model
                gotoxy(26,4) ;
```

```
cout <<"--------------------" ;
gotoxy(5,6) ;
cout <<"Code : " <<tcode ;
gotoxy(5,8) ;
cout <<"Name : " ;
gotoxy(5,10) ;
cout <<"Cost : " ;
gotoxy(5,12) ;
cout <<"Price : " ;
do
{
        valid = 1 ;
        gotoxy(1,8) ;
        clreol() ;      //???
        gotoxy(1,24) ;
        clreol() ;      //???
        gotoxy(1,25) ;
        clreol() ;      //???
        gotoxy(3,25) ;
        cout <<"ENTER Name TO BE ADDED" ;
        gotoxy(5,8) ;
        cout <<"Name : " ;
        gets(name) ;
        strupr(name) ;
        if (name[0] == '0')
                return ;
```

```
                if ((strlen(name) < 1) || (strlen(name) > 20))
                {
                        valid = 0 ;
                        gotoxy(3,24) ;
                        cout <<"\n Input a shorter name ..." ;
                        getch() ;
                }
}
while (!valid) ;
do
{
                valid = 1 ;
                gotoxy(1,10) ;
                clreol() ;
                gotoxy(1,24) ;
                clreol() ;
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
                cout <<"ENTER COST TO ADD IN THE MENU" ;
                gotoxy(5,10) ;
                cout <<"Cost : " ;
                gets(t_cost) ;
                cost = atof(t_cost) ;
                if (t_cost[0] == '0')
                        return ;
```

```
        }
        while (!valid) ;
        do
        {
                valid = 1 ;
                gotoxy(1,12) ;
                clreol() ;
                gotoxy(1,24) ;
                clreol() ;
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
                cout <<"ENTER PRICE TO ADD IN THE MENU"
;
                gotoxy(5,12) ;
                cout <<"Price : " ;
                gets(t_price) ;
                price = atof(t_price) ;

          if (t_price[0] == '0')
                        return ;
        }
        while (!valid) ;
        do
        {
                gotoxy(1,15) ;
```

```
                clreol() ;
                gotoxy(1,24) ;
                clreol() ;
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(5,15) ;
                cout <<"Do you want to save this record (y/n) : " ;
                ch = getche() ;
                ch = toupper(ch) ;
                if (ch == '0')
                        return ;
}
while (ch != 'N' && ch != 'Y') ;
if (ch == 'Y')
{
                code = tcode ;
                fstream file ;
                file.open("PRODUCT.DAT", ios::out | ios::app ) ;
                file.write((char *) this, sizeof(product)) ;
                file.close() ;
                tcode++ ;
}
do
{
                gotoxy(1,17) ;
                clreol() ;
```

```
                        gotoxy(1,24) ;
                        clreol() ;
                        gotoxy(1,25) ;
                        clreol() ;
                        gotoxy(5,17) ;
                        cout <<"Do you want to add more records (y/n) : "
;
                        ch = getche() ;
                        ch = toupper(ch) ;
                        if (ch == '0')
                                return ;
                }
                while (ch != 'N' && ch != 'Y') ;
        }
        while (ch == 'Y') ;
}


void product :: display_record(int tcode)
{
        fstream file ;
        file.open("PRODUCT.DAT", ios::in) ;
        file.seekg(0,ios::beg) ;
        while (file.read((char *) this, sizeof(product)))
        {
                if (code == tcode)
```

```
                {
                        gotoxy(5,3) ;
                        cout <<"Code : "<<code ;
                        gotoxy(5,4) ;
                        cout <<"Name : "<<name ;
                        gotoxy(5,5) ;
                        cout <<"Cost : "<<cost ;
                        gotoxy(5,6) ;
                        cout <<"Price : "<<price ;
                        break ;
                }
        }
        file.close() ;
}


int product :: found(int tcode)
{
        fstream file ;
        file.open("PRODUCT.DAT", ios::in) ;
        file.seekg(0,ios::beg) ;
        int found=0 ;
        while (file.read((char *) this, sizeof(product)))
        {
                if (code == tcode)
                {
```

```
                        found++ ;
                        break ;
                }
        }
        file.close() ;
        return found ;
}


int product :: recordno(int tcode)
{
        fstream file ;
        file.open("PRODUCT.DAT", ios::in) ;
        file.seekg(0,ios::beg) ;
        int found=0 ;
        while (file.read((char *) this, sizeof(product)))
        {
                found++ ;
                if (code == tcode)
                        break ;
        }
        file.close() ;
        return found ;
}
```

```
void product :: delete_record(int tcode)          //DELETE delete()  hehe
{
        fstream file ;
        file.open("PRODUCT.DAT", ios::in) ;
        fstream temp ;
        temp.open("temp.dat", ios::out) ;
        file.seekg(0,ios::beg) ;
        while ( !file.eof() )
        {
                file.read((char *) this, sizeof(product)) ;
                if ( file.eof() )
                        break ;
                if ( code != tcode )
                        temp.write((char *) this, sizeof(product)) ;
        }
        file.close() ;
        temp.close() ;
        file.open("PRODUCT.DAT", ios::out) ;
        temp.open("temp.dat", ios::in) ;
        temp.seekg(0,ios::beg) ;
        while ( !temp.eof() )
        {
                temp.read((char *) this, sizeof(product)) ;
                if ( temp.eof() )
                        break ;
                file.write((char *) this, sizeof(product)) ;
```

```
        }
        file.close() ;
        temp.close() ;
}


void product :: delet()
{
        clrscr() ;
        char t_code[5], ch ;
        int t, tcode ;
        gotoxy(3,25) ;
        cout <<"Press <ENTER> to see the list" ;
        gotoxy(5,3) ;
        cout <<"Enter Code of the WEAPON to be deleted : " ;
        gets(t_code) ;
        t = atoi(t_code) ;
        tcode = t ;
        if (t_code[0] == '0')
                return ;
        if (tcode == 0)
        {
                list() ;
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
```

```
        cout <<"Press <ENTER> to Exit" ;
        gotoxy(5,24) ;
        cout <<"Enter Code to be deleted : " ;
        gets(t_code) ;
        t = atoi(t_code) ;
        tcode = t ;
        if (tcode == 0)
                return ;
}
clrscr() ;
if (!found(tcode))
{
        gotoxy(5,5) ;
        cout <<"\n Record not found" ;
        getch() ;
        return ;
}
display_record(tcode) ;
do
{
        gotoxy(1,8) ;
        clreol() ;
        gotoxy(5,8) ;
        cout <<"Do you want to delete this record (Y/N) : " ;
        ch = getche() ;
```

```
                ch = toupper(ch) ;      //so that input is taken as 'Y' or 'N'
regardless of case
        }
        while (ch != 'N' && ch != 'Y') ;
        if (ch == 'N')
                return ;
        delete_record(tcode) ;
        gotoxy(5,15) ;
        cout <<"\n Record Deleted" ;
        getch() ;
}


void product :: insert(int tcode)
{
        int recno ;
        recno = recordno(tcode) ;
        int valid, t_code ;
        char ch, t_cost[10], t_price[10] ;
        gotoxy(71,2) ;
        cout <<"<0>=Exit" ;
        gotoxy(5,12) ;
        cout <<"Code : " ;
        gotoxy(5,14) ;
        cout <<"Name : " ;
        gotoxy(5,16) ;
```

```
cout <<"Cost : " ;
gotoxy(5,18) ;
cout <<"Price : " ;
do
{
        gotoxy(20,12) ;
        clreol() ;
        cout <<"Change (y/n) : " ;
        ch = getche() ;
        ch = toupper(ch) ;
        if (ch == '0')
                return ;
}
while (ch != 'N' && ch != 'Y') ;
valid = 0 ;
while (ch == 'Y' && !valid)
{
        valid = 1 ;
        gotoxy(1,12) ;
        clreol() ;
        gotoxy(1,24) ;
        clreol() ;
        gotoxy(1,25) ;
        clreol() ;
        gotoxy(3,25) ;
        cout <<"ENTER CODE TO BE ADDED IN THE MENU" ;
```

```
        gotoxy(5,12) ;
        cout <<"Code : " ;
        cin>>t_code;
        if (t_code == 0)
                return ;
        if (found(t_code) && t_code != tcode)
        {
                valid = 0 ;
                gotoxy(3,24) ;
                cout <<"\n CODE ALREADY GIVEN" ;
                getch() ;
        }
}
do
{
        gotoxy(20,14) ;
        clreol() ;
        cout <<"Change (Y/N) : " ;
        ch = getche() ;
        ch = toupper(ch) ;
        if (ch == '0')
                return ;
}
while (ch != 'N' && ch != 'Y') ;
valid = 0 ;
while (ch == 'Y' && !valid)
```

```
{
        valid = 1 ;
        gotoxy(1,14) ;
        clreol() ;
        gotoxy(1,24) ;
        clreol() ;
        gotoxy(1,25) ;
        clreol() ;
        gotoxy(3,25) ;
        cout <<"ENTER ITEM NAME TO ADD IN THE MENU" ;
        gotoxy(5,14) ;
        cout <<"Item Name : " ;
        gets(name) ;
        strupr(name) ;
        if (name[0] == '0')
                return ;
        if ((strlen(name) < 1) || (strlen(name) > 20))
        {
                valid = 0 ;
                gotoxy(3,24) ;
                cout <<"\n Range = 1..20" ;
                getch() ;
        }
}
do
{
```

```
        gotoxy(20,16) ;
        clreol() ;
        cout <<"Change (Y/N) : " ;
        ch = getche() ;
        ch = toupper(ch) ;
        if (ch == '0')
                return ;
}
while (ch != 'N' && ch != 'Y') ;
valid = 0 ;
while (ch == 'Y' && !valid)
{
        valid = 1 ;
        gotoxy(1,16) ;
        clreol() ;
        gotoxy(1,24) ;
        clreol() ;
        gotoxy(1,25) ;
        clreol() ;
        gotoxy(3,25) ;
        cout <<"ENTER ITEM COST TO ADD IN THE MENU" ;
        gotoxy(5,16) ;
        cout <<"Item Cost : " ;
        gets(t_cost) ;
        cost = atof(t_cost) ;
        if (t_cost[0] == '0')
```

```
                return ;
        if (cost < 1 || cost > 800)
        {
                valid = 0 ;
                gotoxy(3,24) ;
                cout <<"\n Range = 1..800" ;
                getch() ;
        }
}
do
{
        gotoxy(20,18) ;
        clreol() ;
        cout <<"Change (Y/N) : " ;
        ch = getche() ;
        ch = toupper(ch) ;
        if (ch == '0')
                return ;
}
while (ch != 'N' && ch != 'Y') ;
valid = 0 ;
while (ch == 'Y' && !valid)
{
        valid = 1 ;
        gotoxy(1,18) ;
        clreol() ;
```

```
        gotoxy(1,24) ;
        clreol() ;
        gotoxy(1,25) ;
        clreol() ;
        gotoxy(3,25) ;
        cout <<"ENTER PRICE TO ADD IN THE MENU" ;
        gotoxy(5,18) ;
        cout <<"Price : " ;
        gets(t_price) ;
        price = atof(t_price) ;
        if (t_price[0] == '0')
                return ;
        if (price < cost || price > 1000)
        {
                valid = 0 ;
                gotoxy(3,24) ;
                cout <<"\n Range = " <<cost <<"..1000" ;
                getch() ;
        }
}
do
{
        gotoxy(1,21) ;
        clreol() ;
        gotoxy(1,24) ;
        clreol() ;
```

```
        gotoxy(1,25) ;
        clreol() ;
        gotoxy(5,21) ;
        cout <<"Do you want to save this record (Y/N) : " ;
        ch = getche() ;
        ch = toupper(ch) ;
        if (ch == '0')
                return ;
}
while (ch != 'N' && ch != 'Y') ;
if (ch == 'N')
        return ;
code = t_code ;
cout <<"\n" <<name ;
cout <<cost ;
cout <<price ;
getch() ;
fstream file ;
file.open("PRODUCT.DAT", ios::out | ios::ate) ;
int location ;
location = (recno-1) * sizeof(product) ;
file.seekp(location) ;
file.write((char *) this, sizeof(product)) ;
file.close() ;
sort() ;
clrscr() ;
```

```
        gotoxy(5,15) ;
        cout <<"\n Record Modified" ;
        getch() ;
}


void product :: modify()
{
        clrscr() ;
        char t_code[5], ch ;
        int t, tcode ;
        gotoxy(3,25) ;
        cout <<"Press <ENTER> to see the list" ;
        gotoxy(5,3) ;
        cout <<"N O P E" ;
        gets(t_code) ;
        t = atoi(t_code) ;
        tcode = t ;
        if (t_code[0] == '0')
                return ;
        if (tcode == 0)
        {
                list() ;                //check function definition in the beginning
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
```

```
        cout <<"Press <ENTER> to Exit" ;
        gotoxy(5,24) ;
        cout <<"-*_*-" ;
        gets(t_code) ;
        t = atoi(t_code) ;
        tcode = t ;
        if (tcode == 0)
                return ;
}
clrscr() ;
if (!found(tcode))
{
        gotoxy(5,5) ;
        cout <<"\n Record not found" ;
        getch() ;
        return ;
}
display_record(tcode) ;
do
{
        gotoxy(5,8) ;
        cout <<"NOPE " ;
      //  ch = getche() ;
      //  ch = toupper(ch) ;
}
while (ch != 'N' && ch != 'Y') ;
```

```
        if (ch == 'N')
                return ;
}


void product :: sort()
{
        int i=0,j ;
        product arr[100] ;
        product temp ;
        fstream file ;
        file.open("PRODUCT.DAT", ios::in) ;
        file.seekg(0,ios::beg) ;
        while (file.read((char *) &arr[i], sizeof(product)))
                i++ ;
        int size ;
        size = i ;
        file.close() ;
        for (i=1; i<size; i++)
                for (j=0; j<size-i; j++)
                {
                        if (arr[j].code > arr[j+1].code)
                        {
                                temp=arr[j];
                                arr[j]=arr[j+1];
                                arr[j+1]=temp;
```

```
                        }
                }
        file.open("PRODUCT.DAT", ios::out) ;
        for (i=0; i<size; i++)
                file.write((char *) &arr[i], sizeof(product)) ;
        file.close() ;
}


void product :: buy()
{
        clrscr() ;
        account a ;
        int t_billno, purchased=0 ;
        t_billno = a.last_billno() ;
        t_billno++ ;
        char t_code[5], ch;
        float t_quantity ;
        int t, tcode, i=0, valid ;
        float qty ;
        float t_qty, t_cost, t_price ;
        char t_name[30] ;
        struct date d;
        int d1, m1, y1 ;
        getdate(&d);
        d1 = d.da_day ;
```

```
m1 = d.da_mon ;
y1 = d.da_year ;
do
{
        clrscr() ;
        gotoxy(3,25) ;
        cout <<"Press <ENTER> to see the list" ;
        gotoxy(5,3) ;
        cout <<"Enter Code of the Weapon you wish to Buy : " ;
        gets(t_code) ;
        t = atoi(t_code) ;
        tcode = t ;
        if (t_code[0] == '0')
        {
                if (purchased)
                        a.prepare_bill(t_billno) ;
                return ;
        }
        if (tcode == 0)
        {
                list() ;        //check function definition
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
                cout <<"Press <ENTER> to Exit" ;
                gotoxy(5,24) ;
```

```
                cout <<"Enter Code of the Weapon you wish to
Buy : " ;
                gets(t_code) ;
                t = atoi(t_code) ;
                tcode = t ;
                if (tcode == 0)
                {
                        if (purchased)
                                a.prepare_bill(t_billno) ;
                        return ;
                }
        }
        clrscr() ;
        if (!found(tcode))
        {
                gotoxy(5,5) ;
                cout <<"\n Code not found" ;
                getch() ;
                if (purchased)
                        a.prepare_bill(t_billno) ;
                return ;
        }
        gotoxy(60,2) ;
        cout <<"Date:" <<d1 <<"/" <<m1 <<"/" <<y1 ;
        display_record(tcode) ;
        do
```

```
        {
                valid = 1 ;
                gotoxy(1,8) ;
                clreol() ;
                gotoxy(1,24) ;
                clreol() ;
                gotoxy(1,25) ;
                clreol() ;
                gotoxy(3,25) ;
                cout <<"ENTER QUANTITY TO BE
PURCHASED: " ;
                gotoxy(5,8) ;
                cout <<"Quantity : " ;
                cin>>t_quantity ;
                qty=t_quantity ;
                if (t_quantity == 0)
                {
                        if (purchased)
                                a.prepare_bill(t_billno) ;
                        return ;
                }
                if (qty < 1 || qty > 800)
                {
                        valid = 0 ;
                        gotoxy(3,24) ;
                        cout <<"\n Range = 1..800" ;
```

```
                        getch() ;
                }
        }
        while (!valid) ;
        do
        {
                gotoxy(5,10) ;
                clreol() ;
                gotoxy(5,10) ;
                cout <<"Do you want to cancel this purchase
(Y/N) : " ;
                ch = getche() ;
                ch = toupper(ch) ;
        }
        while (ch != 'N' && ch != 'Y') ;
        if (ch == 'N')
        {
                purchased = 1 ;
                fstream file ;
                file.open("PRODUCT.DAT", ios::in) ;
                file.seekg(0,ios::beg) ;
                while (file.read((char*) this, sizeof(product)))
                {
                        if (code == tcode)
                        {
                                code = tcode ;
```

```
                                        strcpy(t_name,name) ;
                                        t_cost = cost ;
                                        t_price = price ;
                                        t_qty = qty ;

a.add_bill(t_billno,tcode,t_name,t_qty,t_cost,t_price) ;
                                        i++;
                                        break ;
                                }
                        }
                        file.close() ;
                }
                do
                {
                        gotoxy(5,12) ;
                        clreol() ;
                        gotoxy(5,12) ;
                        cout <<"Do you want to BUY MORE (Y/N) : " ;
                        ch = getche() ;
                        ch = toupper(ch) ;
                }
                while (ch != 'N' && ch != 'Y') ;
        }
        while (ch == 'Y') ;
        a.prepare_bill(t_billno) ;
}
```

```
int account :: last_billno()
{
        fstream file ;
        file.open("BILL.DAT", ios::in) ;
        file.seekg(0,ios::beg) ;
        int t=0 ;
        while (file.read((char *) this, sizeof(account)))
                t = billno ;
        file.close() ;
        return t ;
}


void account :: add_bill(int t_billno, int t_code, char t_name[30], float
t_qty, float t_cost, float t_price)
{
        struct date d;
        int d1, m1, y1 ;
        getdate(&d);
        d1 = d.da_day ;
        m1 = d.da_mon ;
        y1 = d.da_year ;
        dd = d1 ;
        mm = m1 ;
```

```
        yy = y1 ;
        code = t_code ;
        strcpy(name,t_name) ;
        cost = t_cost ;
        price = t_price ;
        quantity = t_qty ;
        billno = t_billno ;
        fstream file ;
        file.open("BILL.DAT", ios::out | ios:: app ) ;
        file.write((char *) this, sizeof(account)) ;
        file.close() ;
}


void account :: prepare_bill(int t_billno)        //BROken . Please FIX ;
update- fixed !
{
        clrscr() ;
        struct date d;
        int d1, m1, y1 ;
        getdate(&d);
        d1 = d.da_day ;
        m1 = d.da_mon ;
        y1 = d.da_year ;
        float total=0.0, total_bill=0.0 ;
        gotoxy(33,3) ;
```

```
        cout <<"CUSTOMER BILL" ;
        gotoxy(55,5) ;
        cout <<"Date:" <<d1 <<"/" <<m1 <<"/" <<y1 ;
        gotoxy(8,7) ;
        cout <<"Goods PURCHASED" ;
        gotoxy(8,8) ;
        cout <<"+++++++++++++++" ;
        gotoxy(8,9) ;
        cout <<"Code    Name    Cost    Price    Qty    Total" ;
        gotoxy(8,10) ;
        cout
<<"================================================================
==================" ;
        int row=11 ;
        fstream file ;
        file.open("BILL.DAT", ios::in) ;
        file.seekg(0) ;
        while (file.read((char *) this, sizeof(account)) !=0 )
        {
                if (billno == t_billno)
                {
                        gotoxy(8,5) ;
                        cout <<"BILL NO. # " <<billno ;
                        gotoxy(8,6) ;
                        cout <<"===============" ;
                        gotoxy(10,row) ;
                        cout <<code ;
```

```
                        gotoxy(15,row) ;
                        cout <<name ;
                        gotoxy(23,row) ;
                        cout <<cost ;
                        gotoxy(31,row) ;
                        cout <<price ;
                        gotoxy(39,row) ;
                        cout <<quantity ;
                        total=quantity*price ;
                        gotoxy(63,row) ;
                        cout<<total;
                        total_bill+=total ;
                        row++ ;
                }
        }
        file.close() ;
        gotoxy(39,row+1) ;
        cout <<"TOTAL BILL: Rs." <<total_bill <<" /-" ;
        getch() ;
}


void account :: bill_list()      // FIXED SPACING. Called when 4 is
pressed in Main Menu
{
        clrscr() ;                          //Page 1 of receipt working Perf
```

```
        fstream file ;
        file.open("BILL.DAT", ios::in) ;
        file.seekg(0) ;
        int row=5, found=0, pageno=1, prev_billno=0, flag=0 ;
        float total=0.0, total_bill=0.0 ;
        gotoxy(30,2) ;
        cout <<"LIST OF BILLS" ;
        gotoxy(3,4) ;
        cout <<"Billno.  Date    Code  Name   Cost  Price  Qty   Total"
;
        gotoxy(3,5) ;

cout<<"================================================
========================" ;
        while (file.read((char *) this, sizeof(account)))
        {
                row++ ;
                //delay(20) ;
                found = 1 ;
                if (prev_billno != billno)
                {
                        if (flag)
                        {
                                gotoxy(54,row) ;
                                cout <<"TOTAL Bill: Rs." <<total_bill <<"/-"
;
                                total_bill = 0.0 ;
```

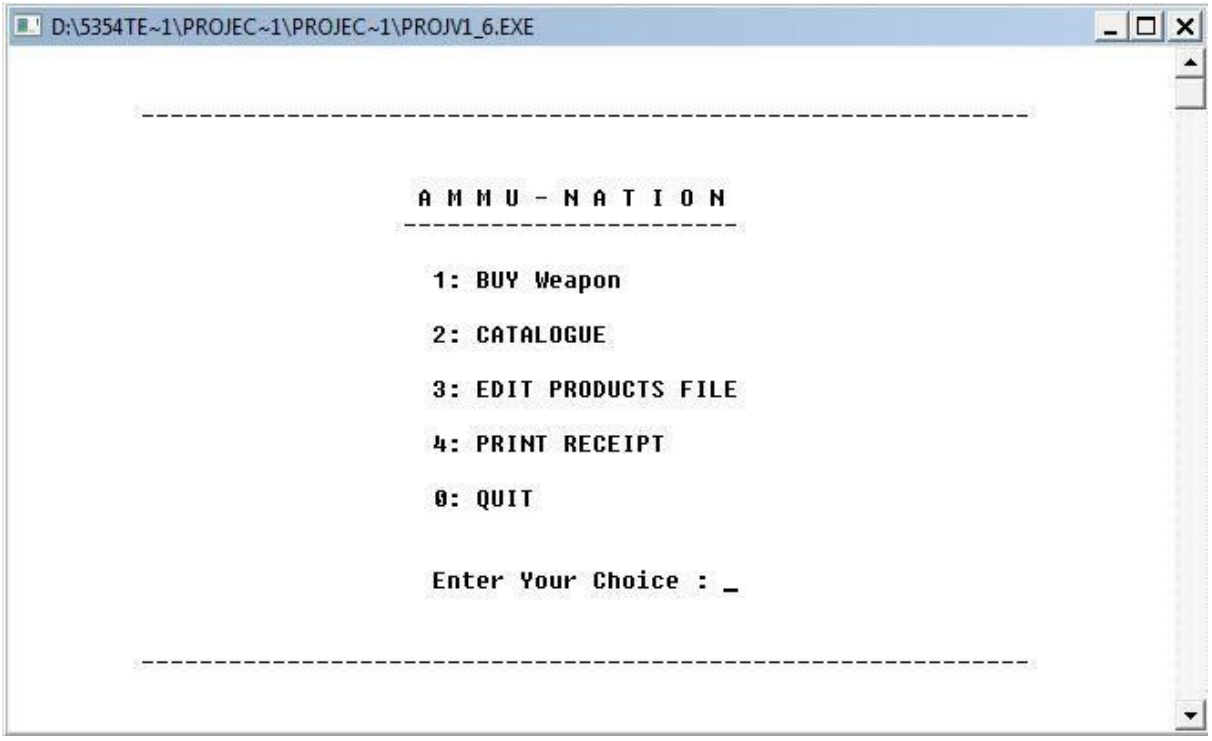
```
                row++ ;
            }
            gotoxy(4,row) ;
            cout <<billno ;
}
flag = 1 ;
gotoxy(11,row) ;
cout <<dd <<"/" <<mm <<"/" <<yy ;
gotoxy(24,row) ;
cout <<code ;
gotoxy(28,row) ;
cout <<name ;
gotoxy(36,row) ;
cout <<cost ;
gotoxy(44,row) ;
cout <<price ;
gotoxy(53,row) ;
cout <<quantity ;
total = quantity * price ;
gotoxy(60,row) ;
cout <<total ;
total_bill = total_bill + total ;
if ( row >= 23 )
{
            row = 5 ;
```

```
                        gotoxy(66,1) ;                          //Printing JUnk
in page 2 of receipt. Update: Fix'd!
                        cout <<"Page no. : " <<pageno ;
                        pageno++ ;
                        gotoxy(1,25) ;
                        cout <<"Press any key to continue..." ;
                        getche() ;    //Registers any keypress
                        clrscr() ;
                        gotoxy(30,2) ;
                        cout <<"LIST OF BILLS" ;
                        gotoxy(3,4) ;
                        cout <<"Billno.    Date    Code  Name    Cost
Price    Qty    Total" ;
                        gotoxy(3,5) ;
                        cout
<<"==========================================================
==========" ;
                }
                prev_billno = billno ;
        }
        row++ ;
        gotoxy(52,row) ;
        cout <<"TOTAL BILL: Rs." <<total_bill <<"/=" ;
        if ( !found )
        {
                gotoxy(5,10) ;
                cout <<"\n Records not found" ;
```

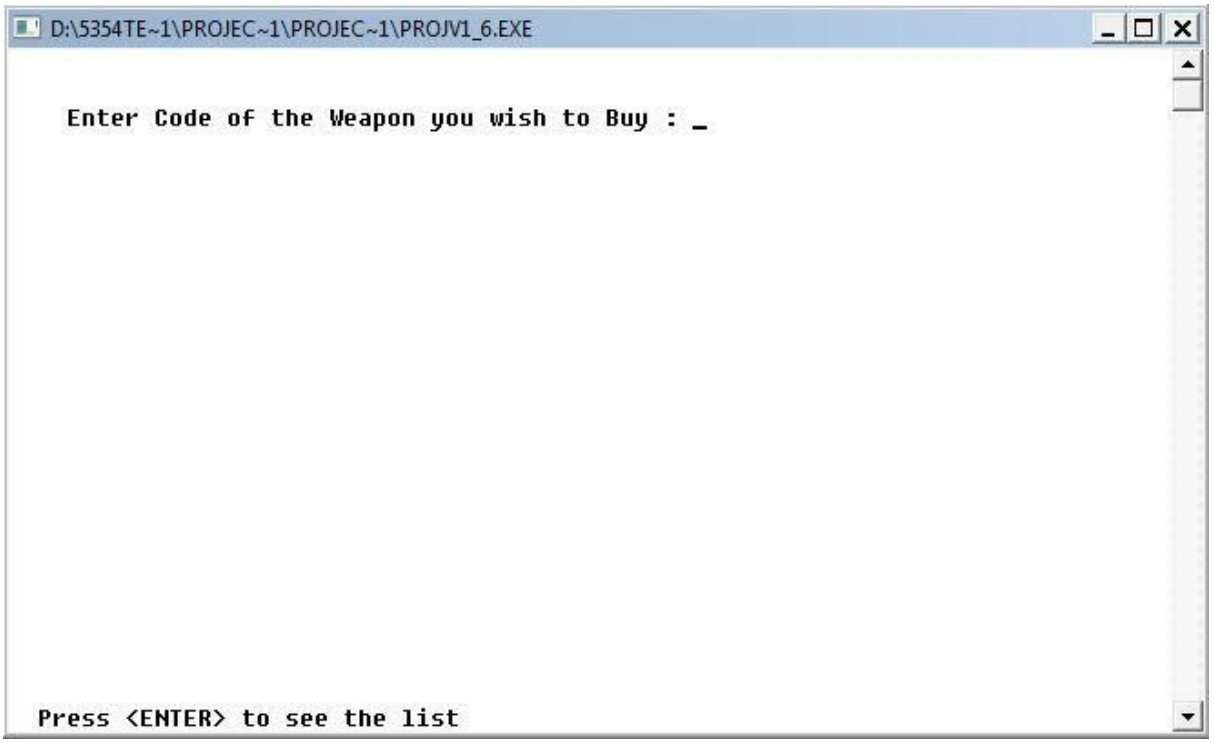
```
        }
        gotoxy(66,1) ;
        cout <<"Page no. : " <<pageno ;
        gotoxy(1,25) ;
        cout <<"Press any key to continue..." ;
        getche() ;
        file.close () ;
}


void main()
{
        clrscr() ;
        menu m ;
        m.main_menu() ;
}
```

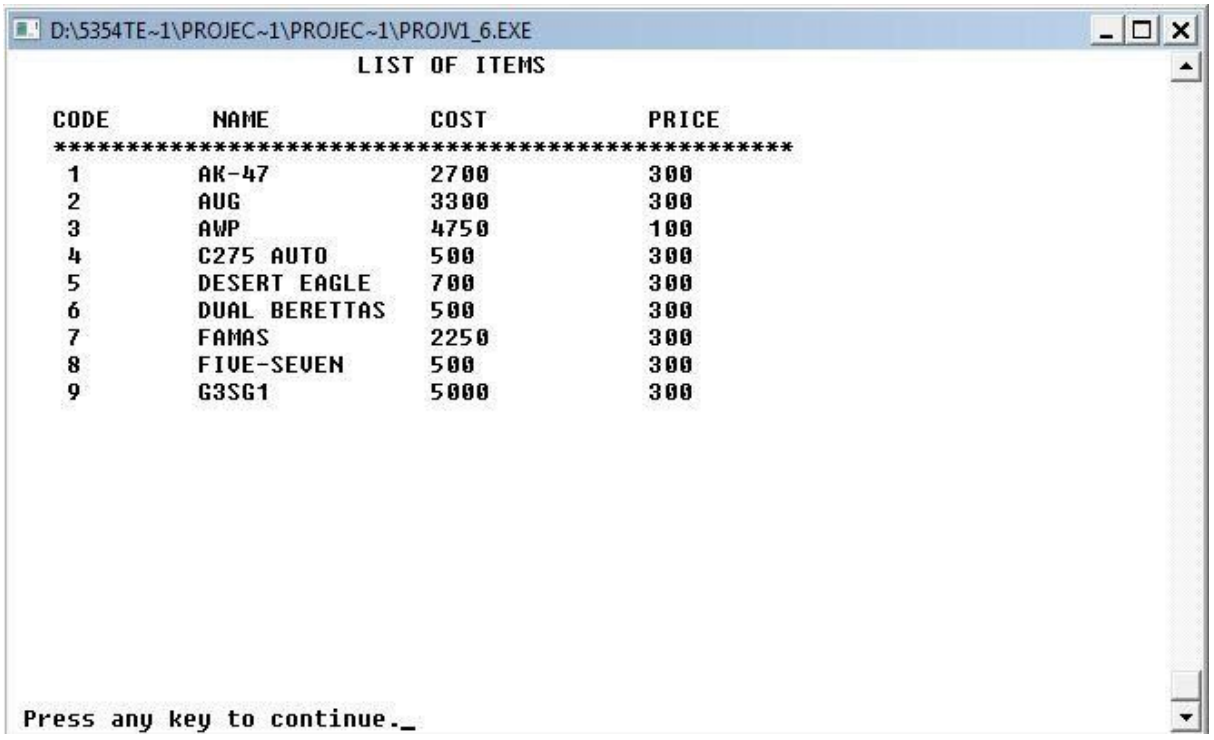
# OUTPUT



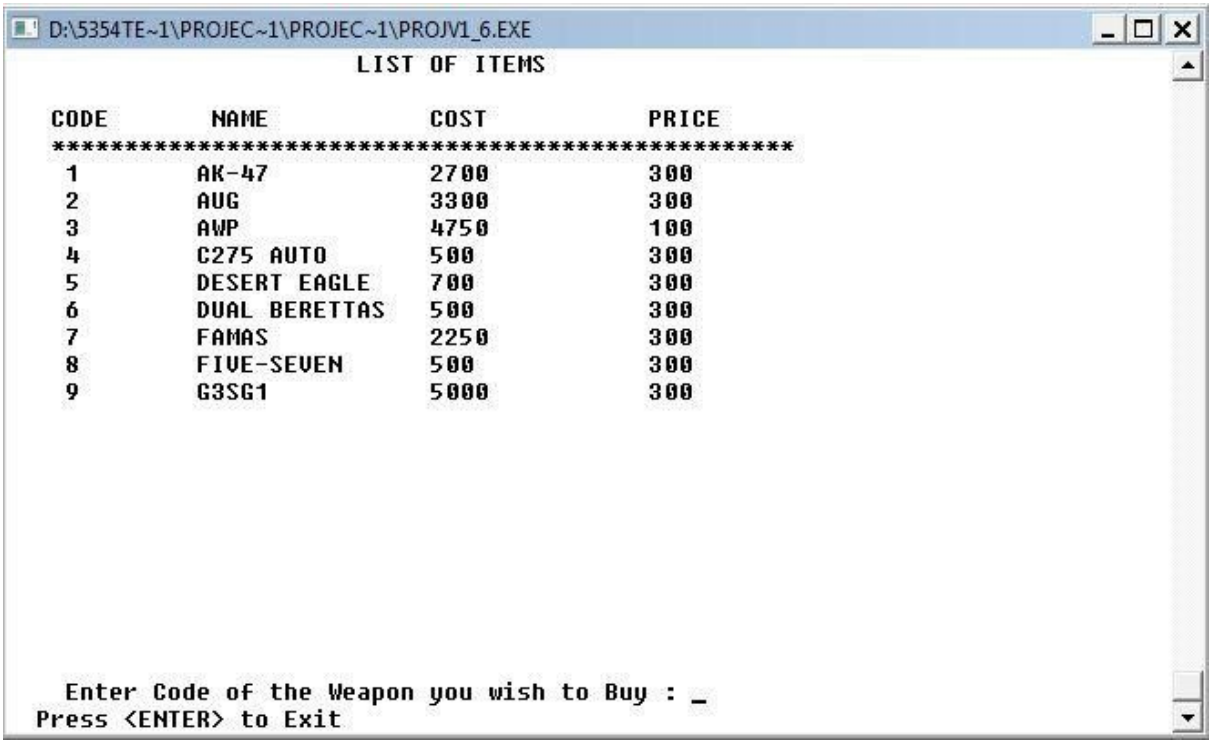

Main menu



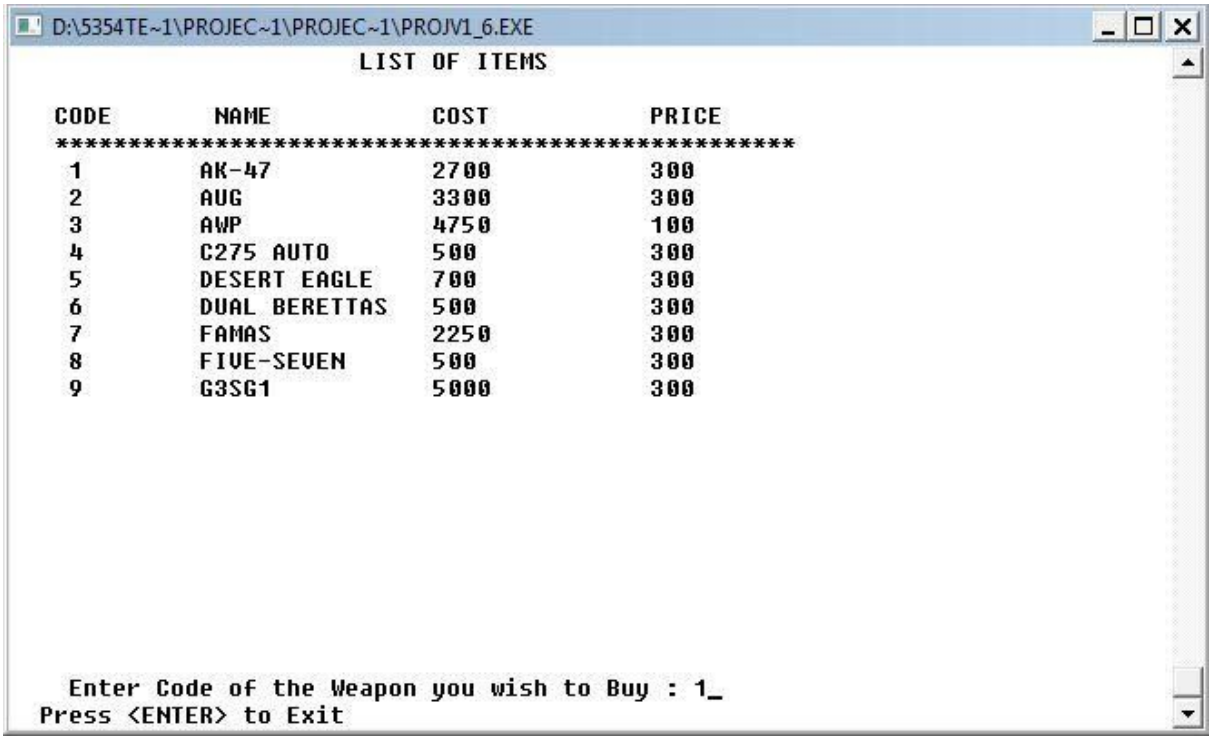

Upon option ’1’ being selected



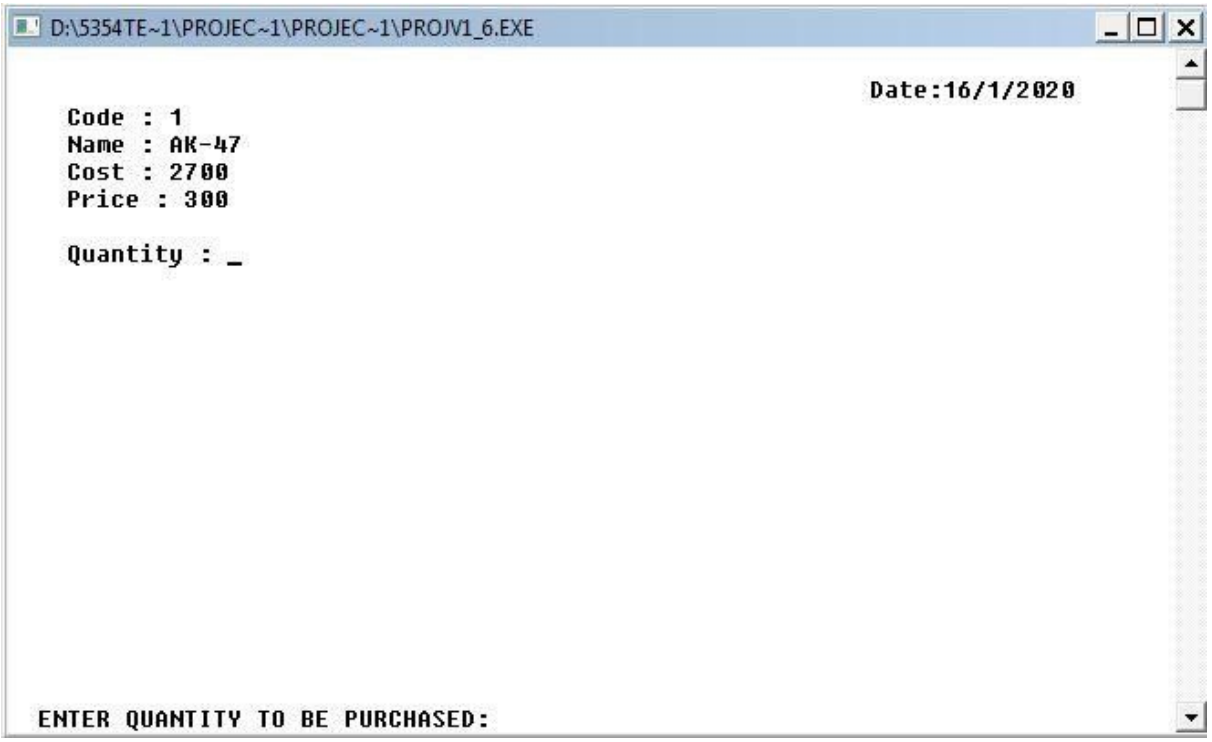

’Enter’ key was pressed to access the list of items



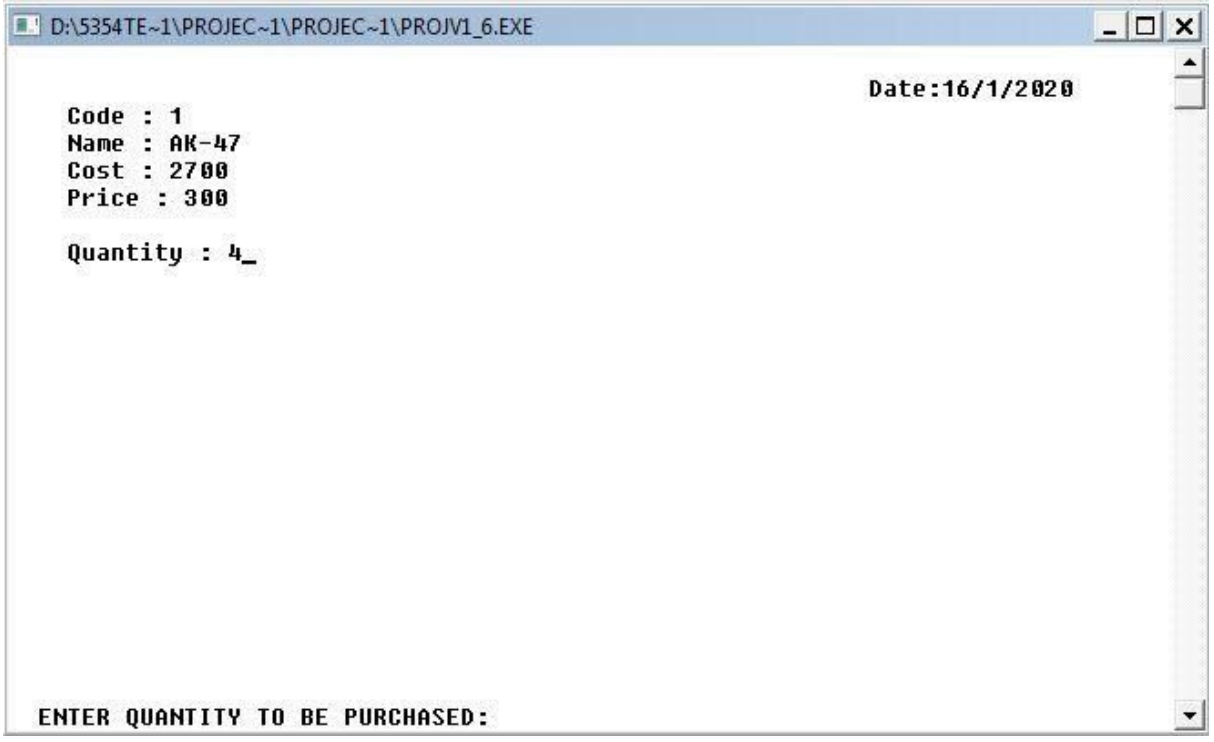

Additional prompt is provided for user to input ‘Code’



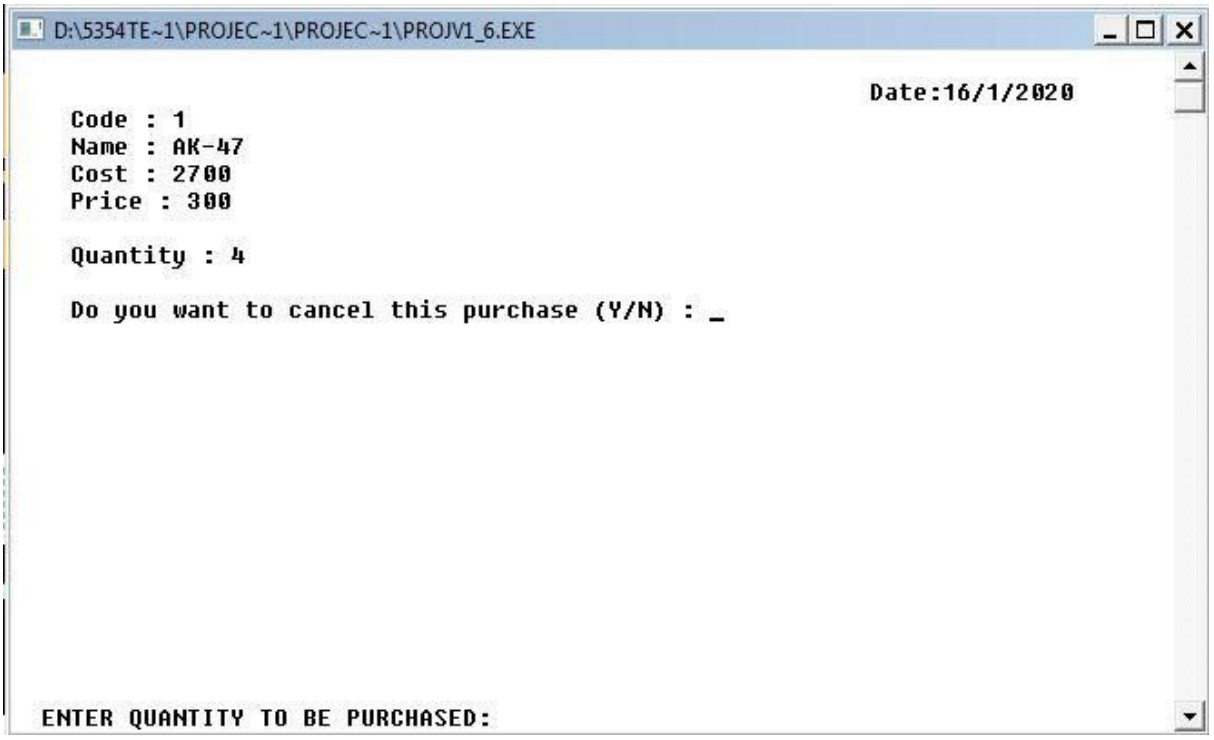

Code ‘1‘ is input



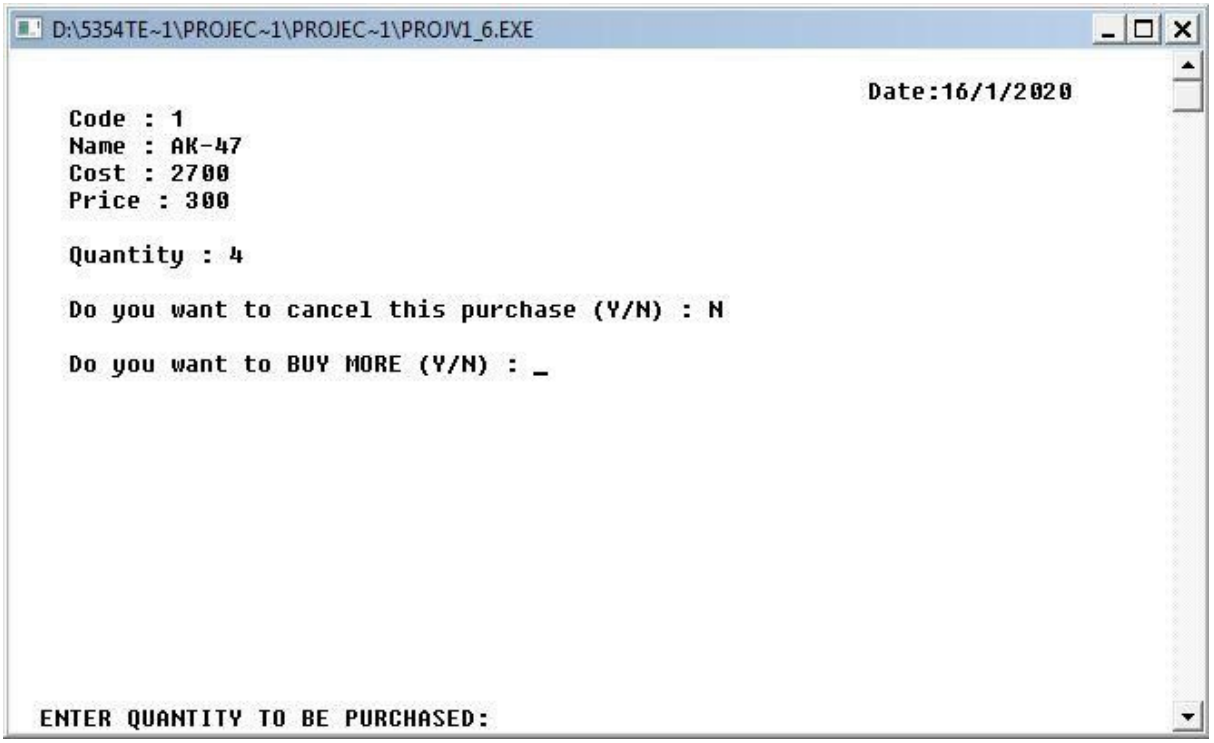

Basic details of weapon with code ‘1’ is displayed with a prompt asking for the required quantity.



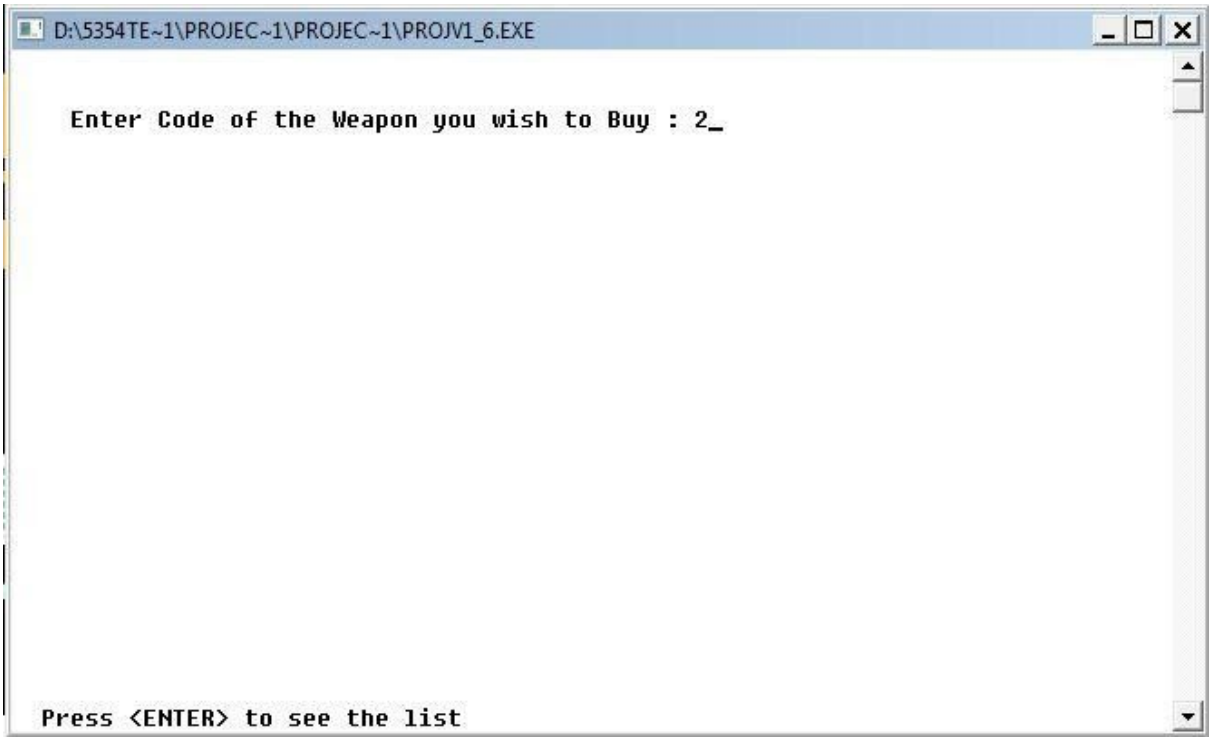

Quantity was specified



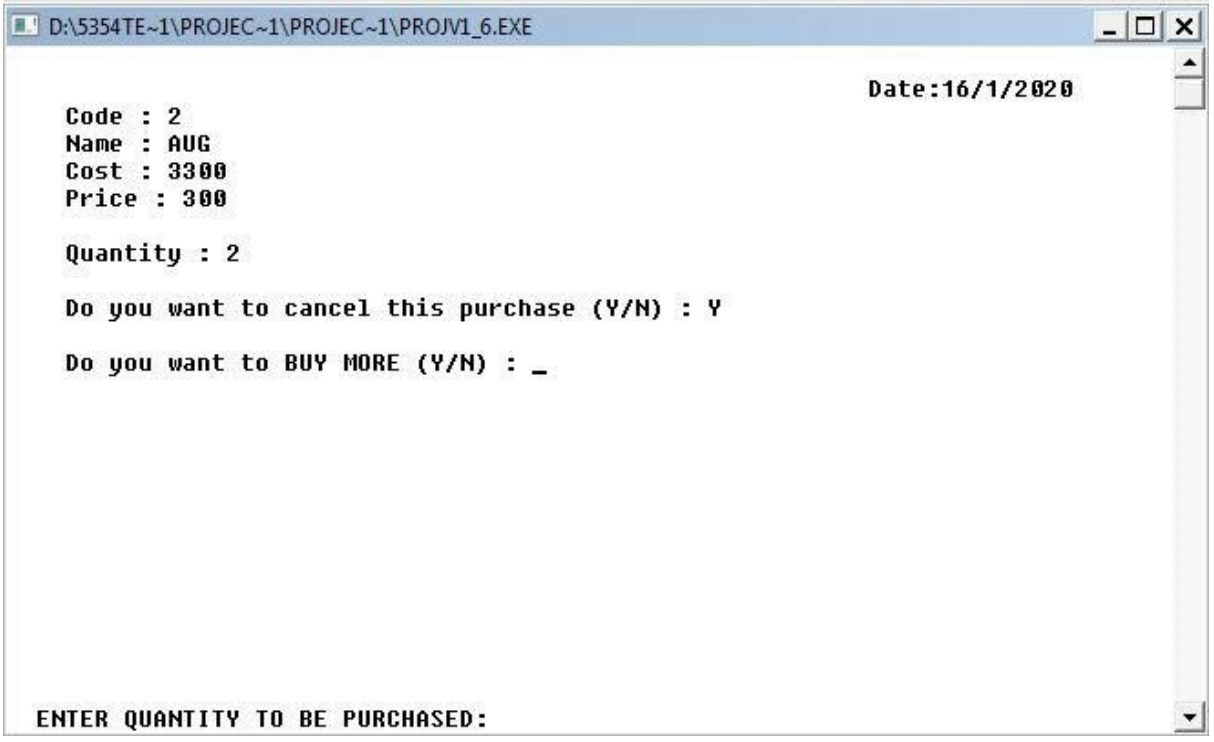

A prompt to confirm the choice pops up.



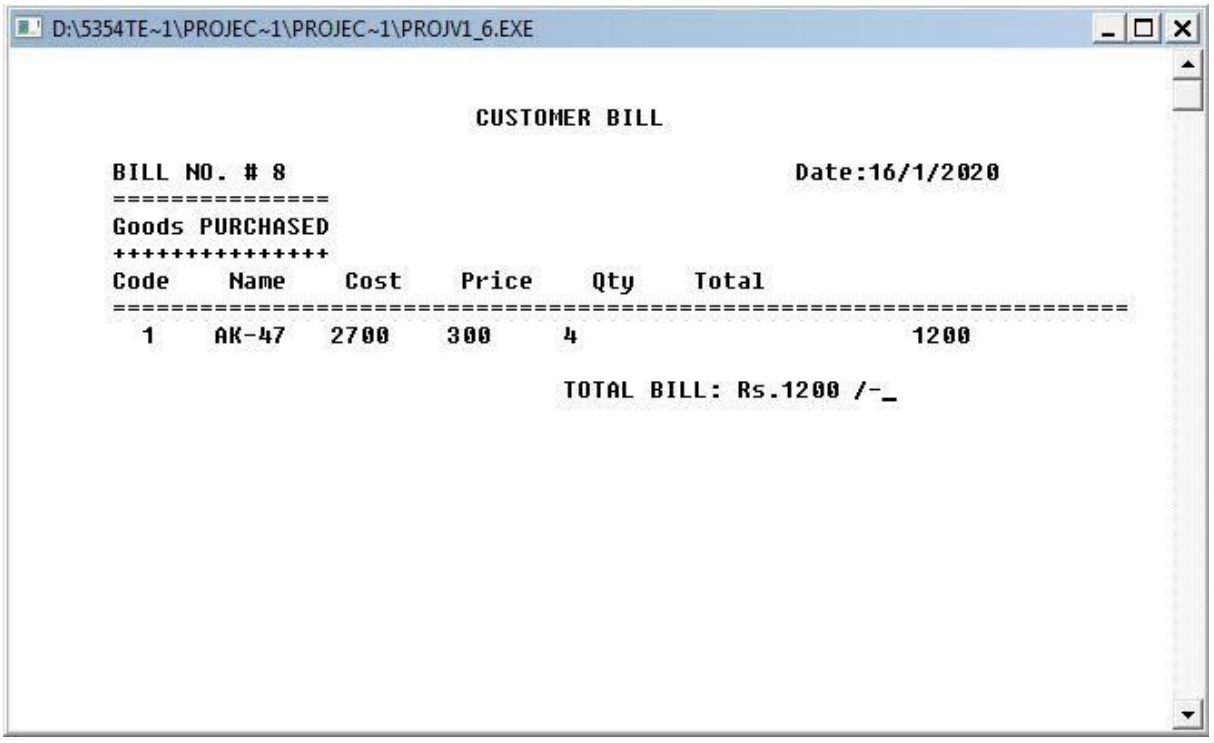

A choice to purchase more weapons in a single session is provided as a prompt.



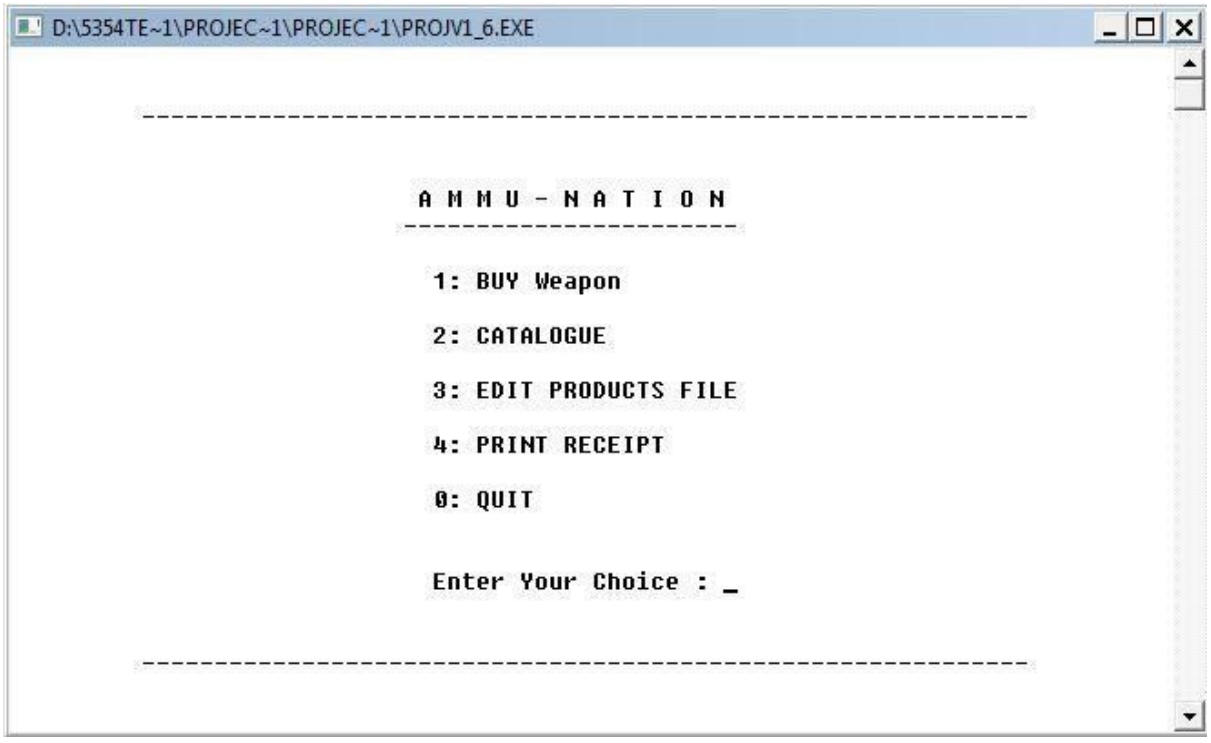

‘Y’ was chosen thus calling the function again. Code is asked again.



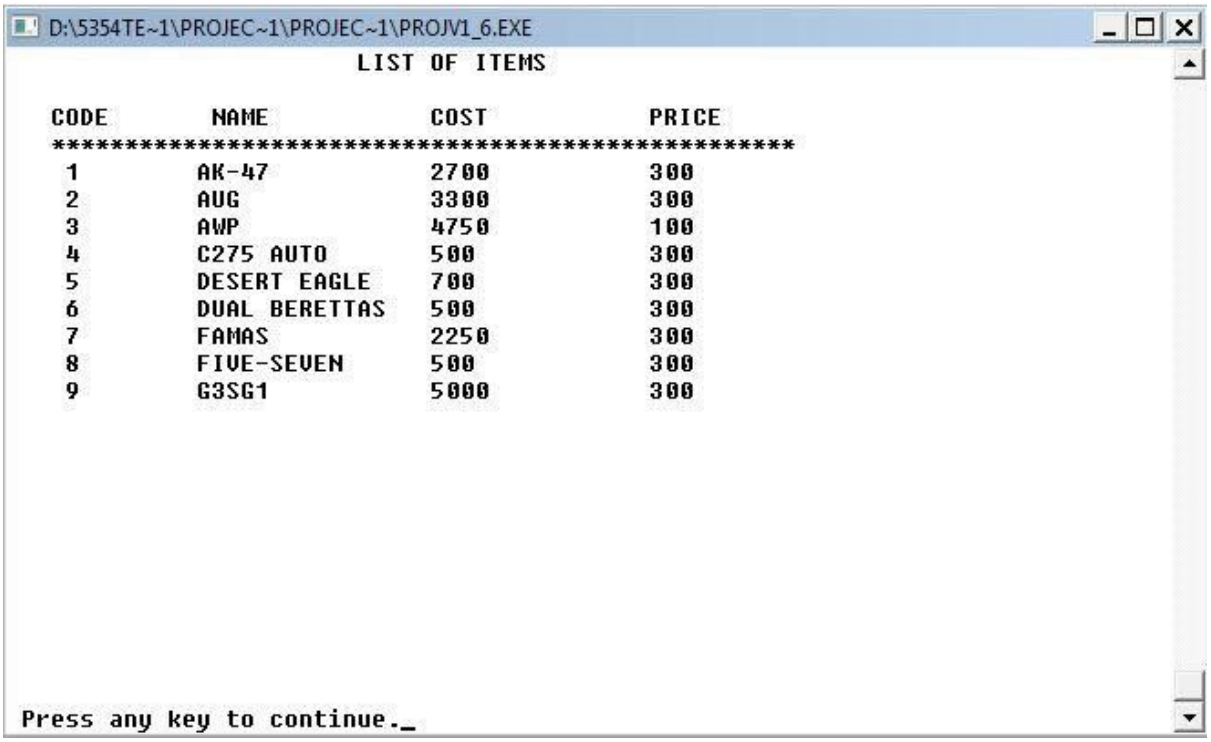

Details of weapon 2 are provided and quantity is asked. However, the purchase is cancelled.



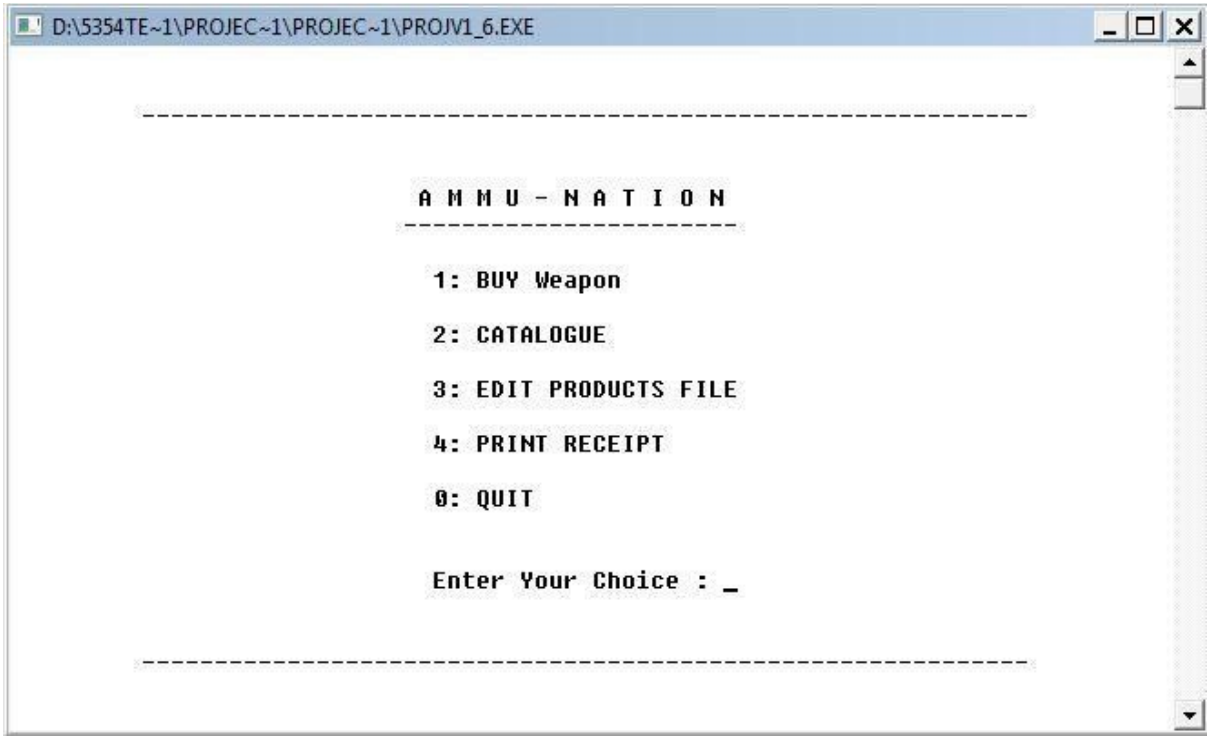

Session ended as ‘N’ was chosen. Preliminary receipt was printed.



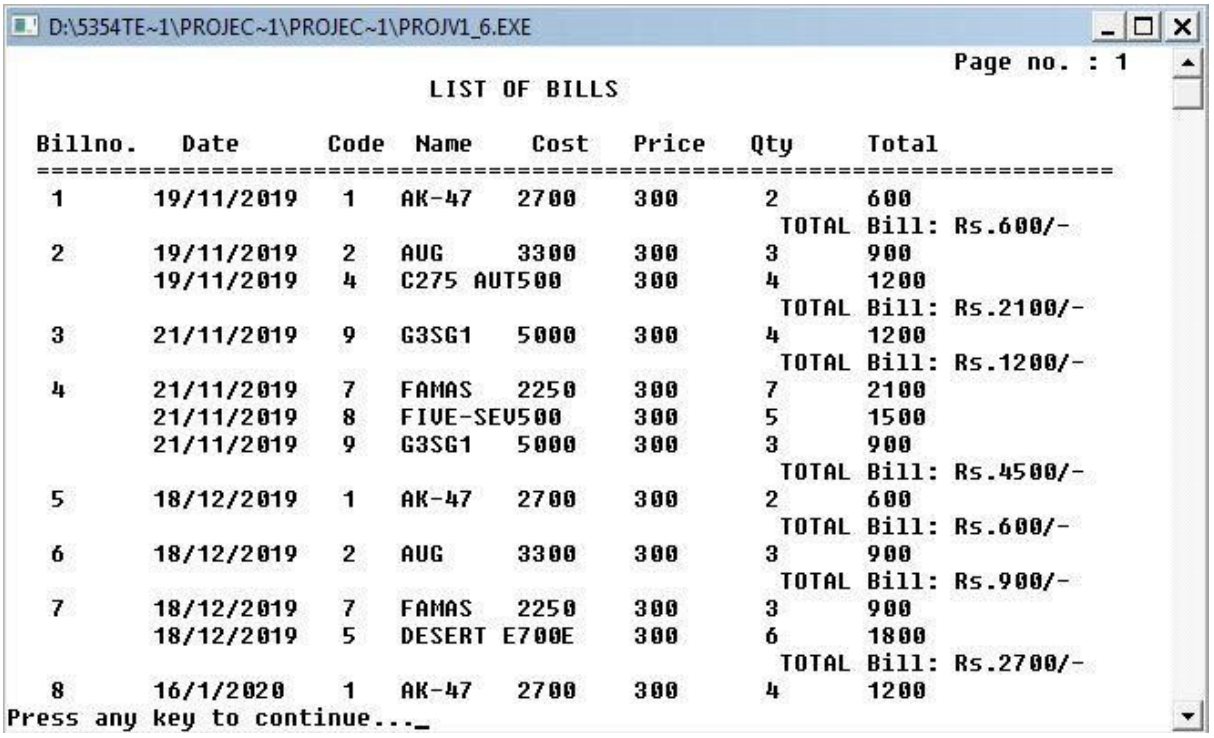

Program reverts back to Main Menu



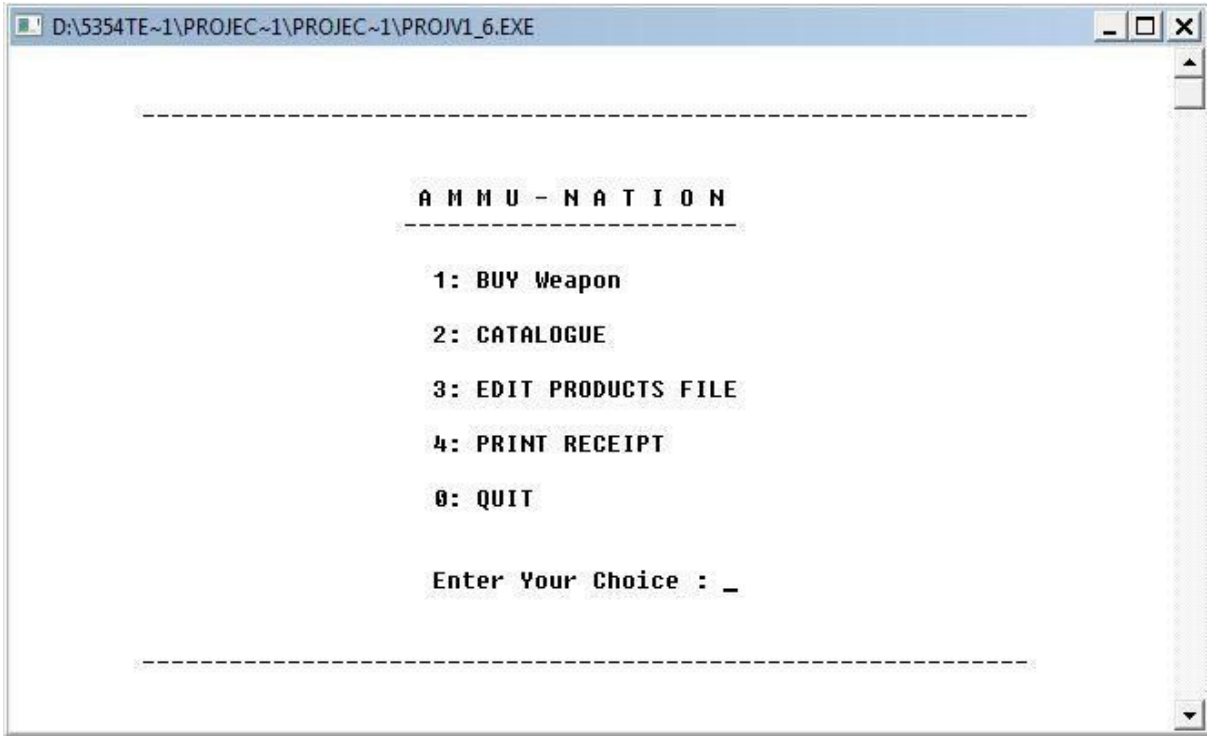

Entire list of weapons available are accessed via option ‘2’



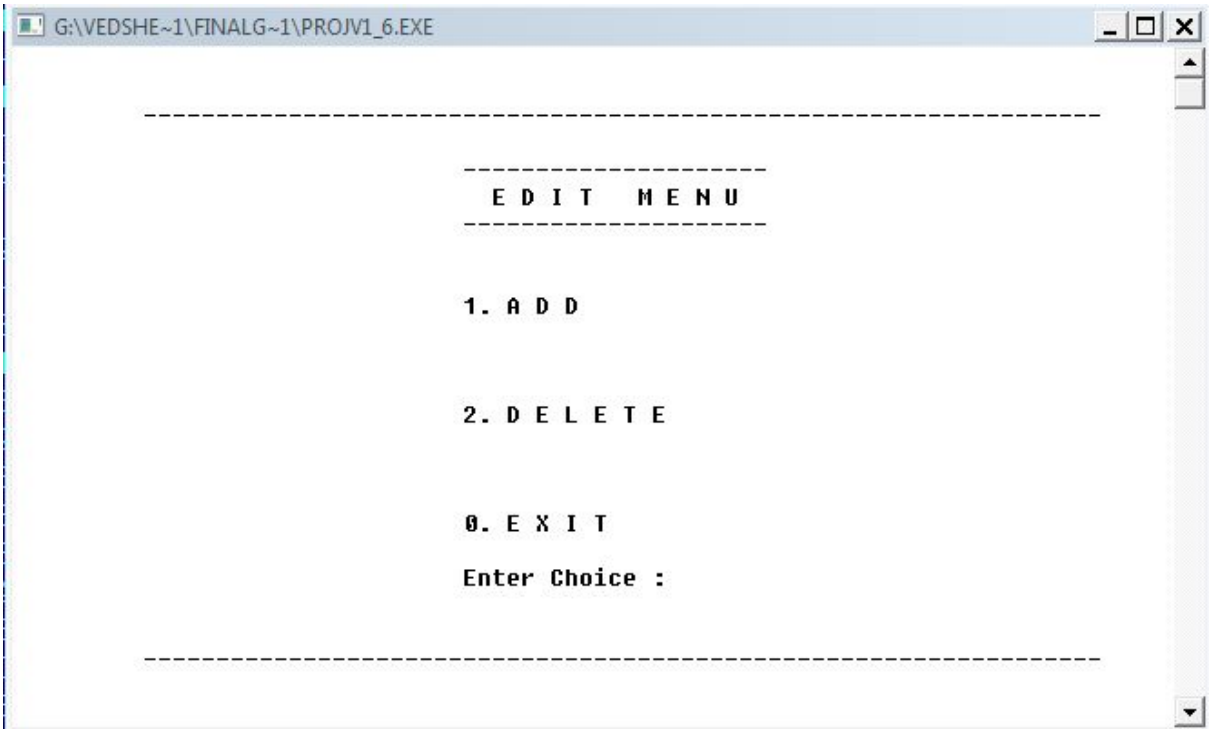

Main Menu is accessed again after pressing any key.



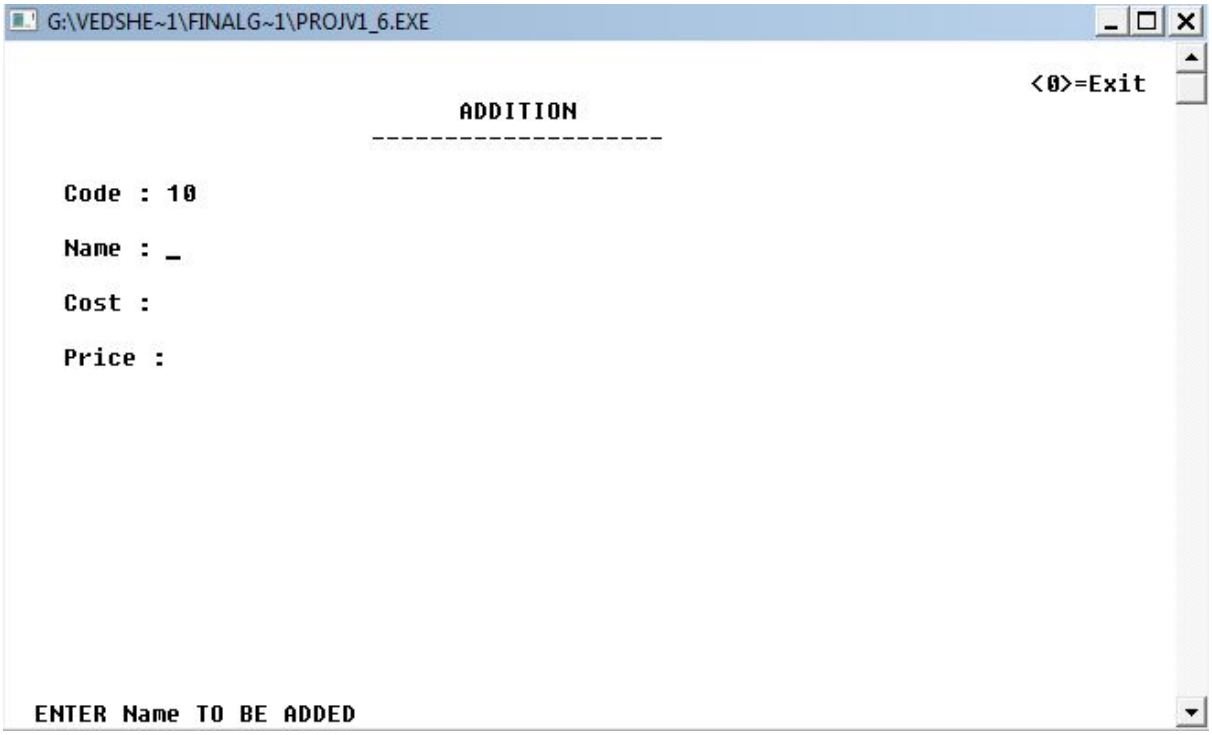

Selecting option ‘4’ displays overall receipt (cumulative of all sessions)



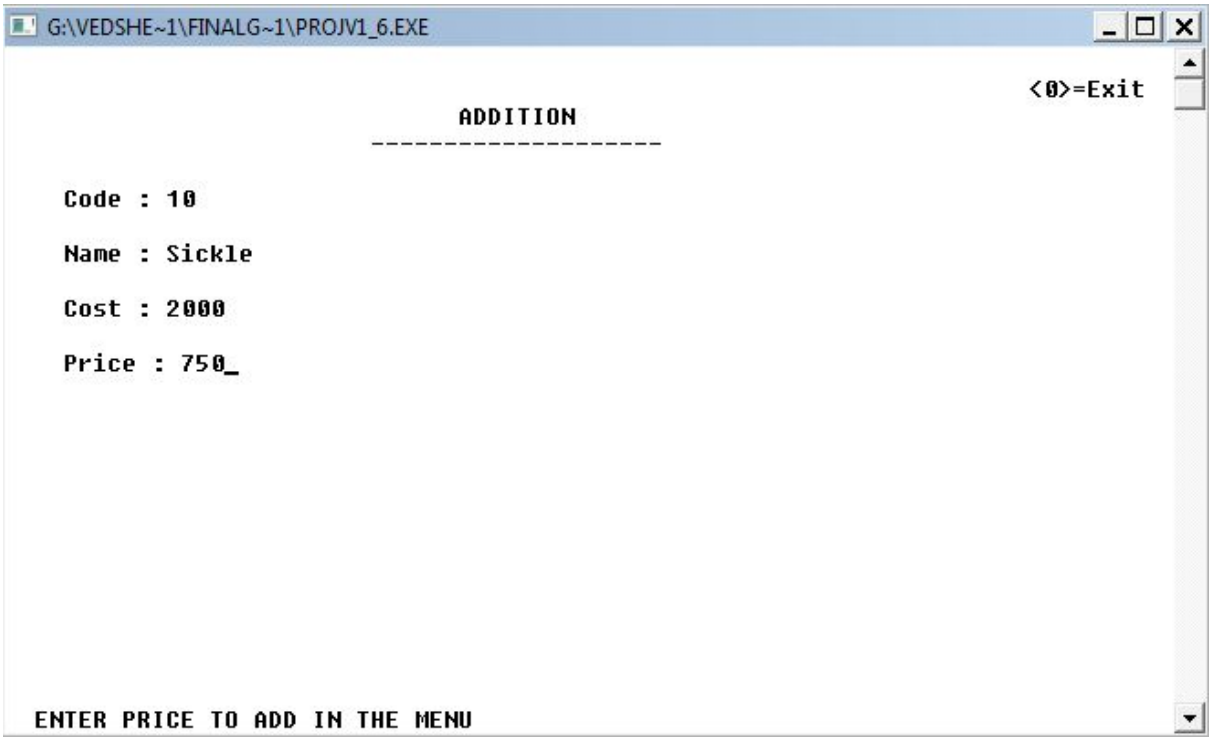

Main Menu is accessed after pressing any key.



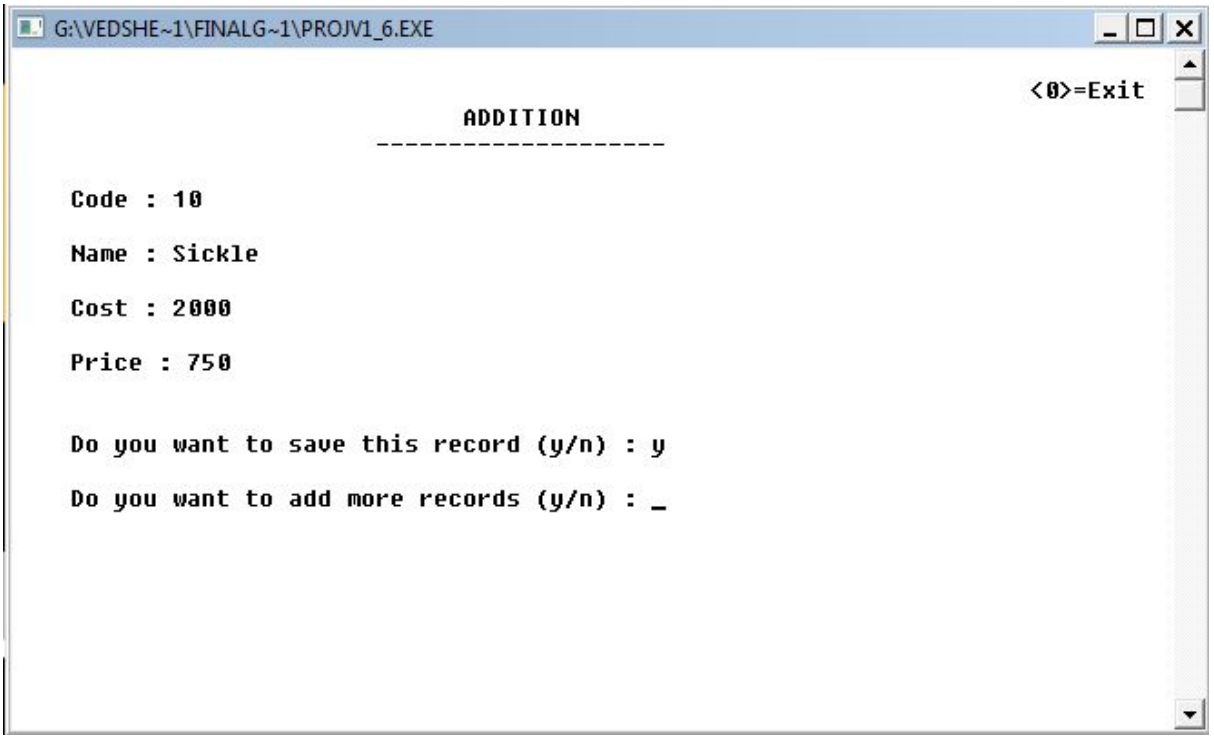

Selecting option 3 enables the user to access the add and delete options.



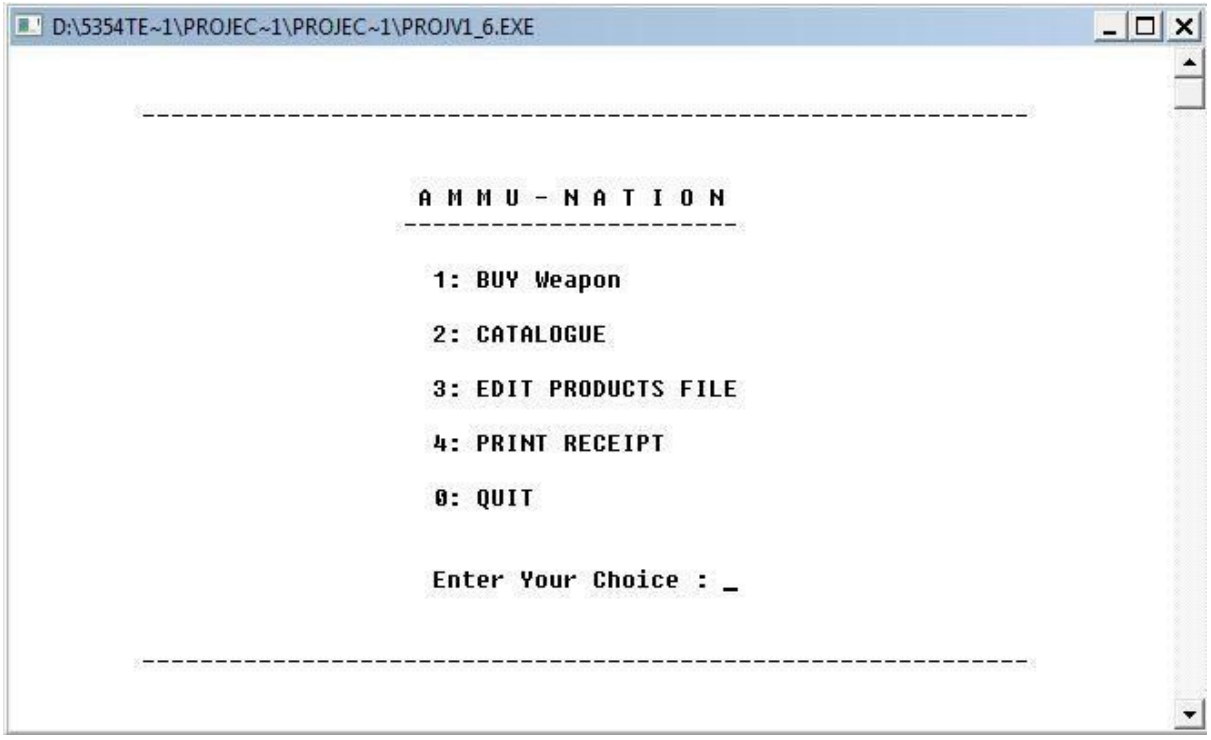
Selecting option ‘1’ lets the user add a weapon of their choice.



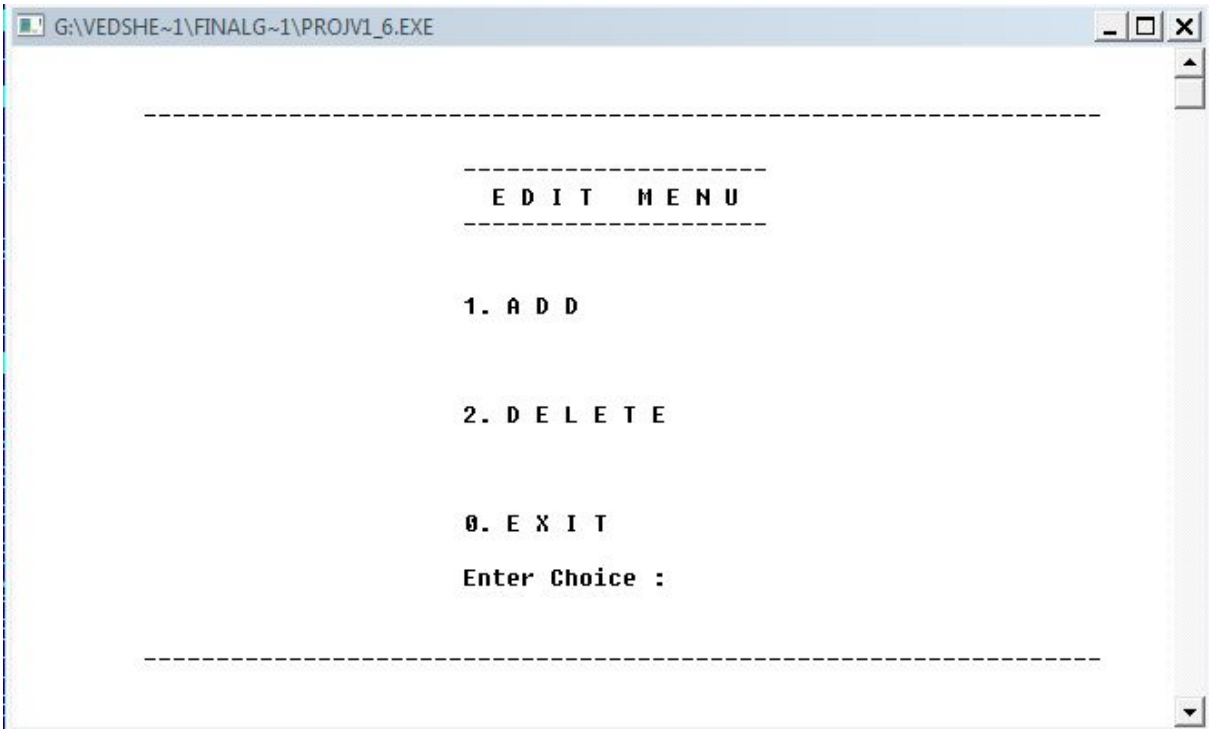

The basic details required are asked to be input.



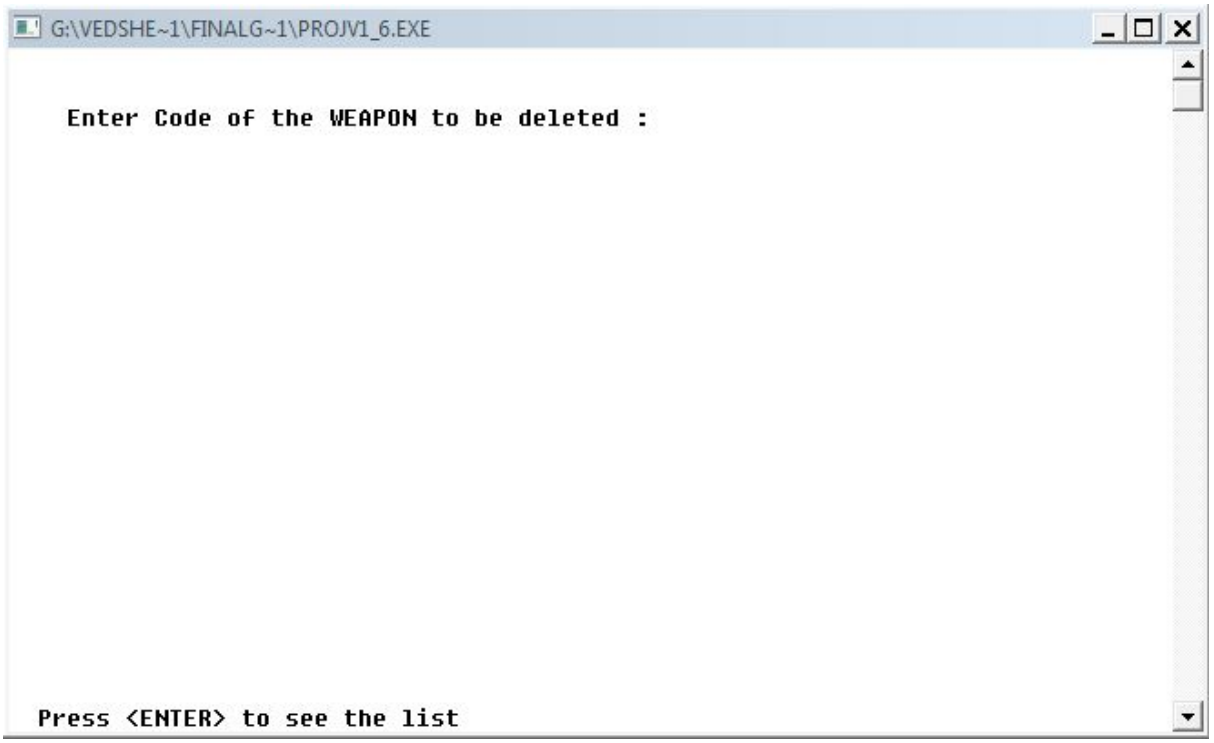

A prompt to confirm the addition appears.



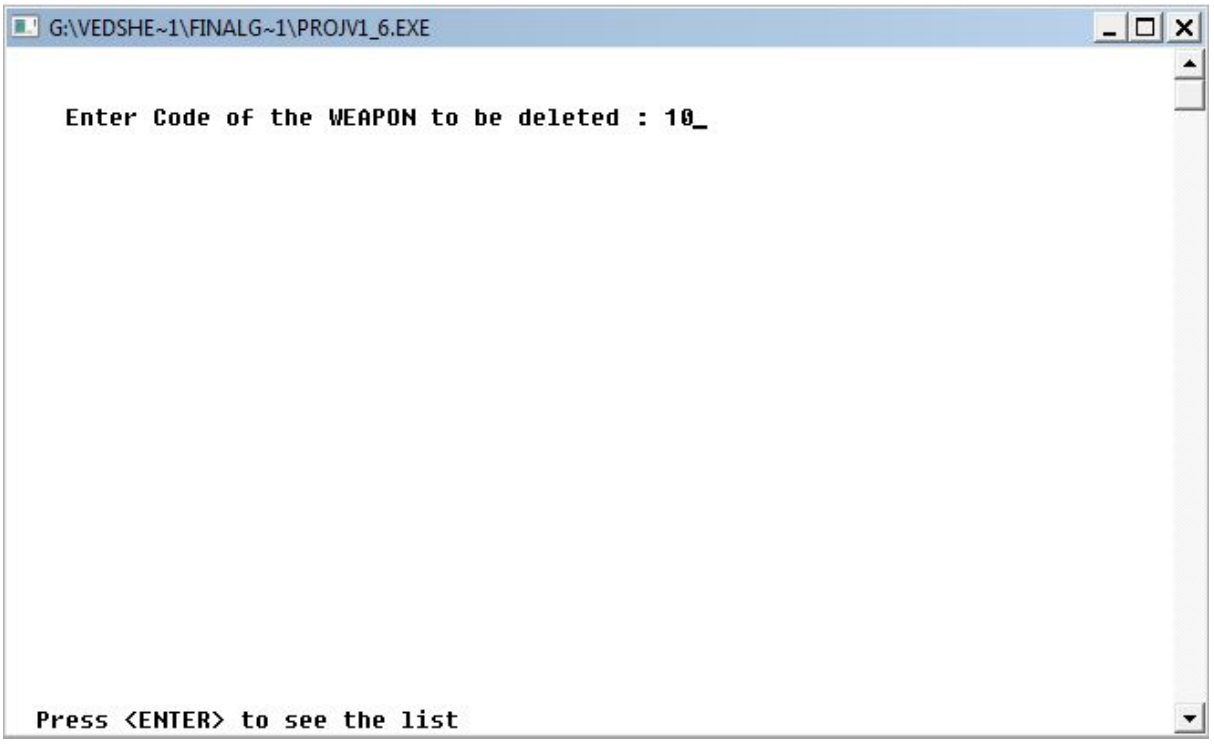

The program reverts back to the Main Menu.



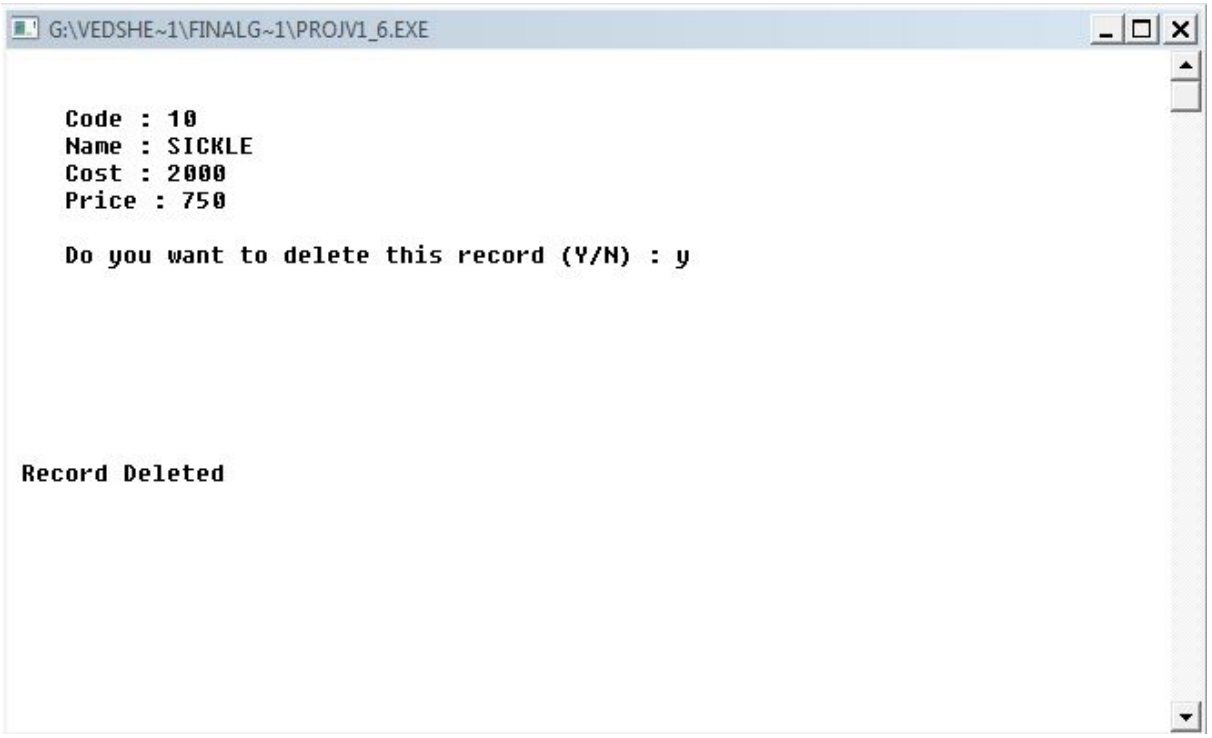
Upon selecting option ‘3’, the user can access the Edit Menu again.



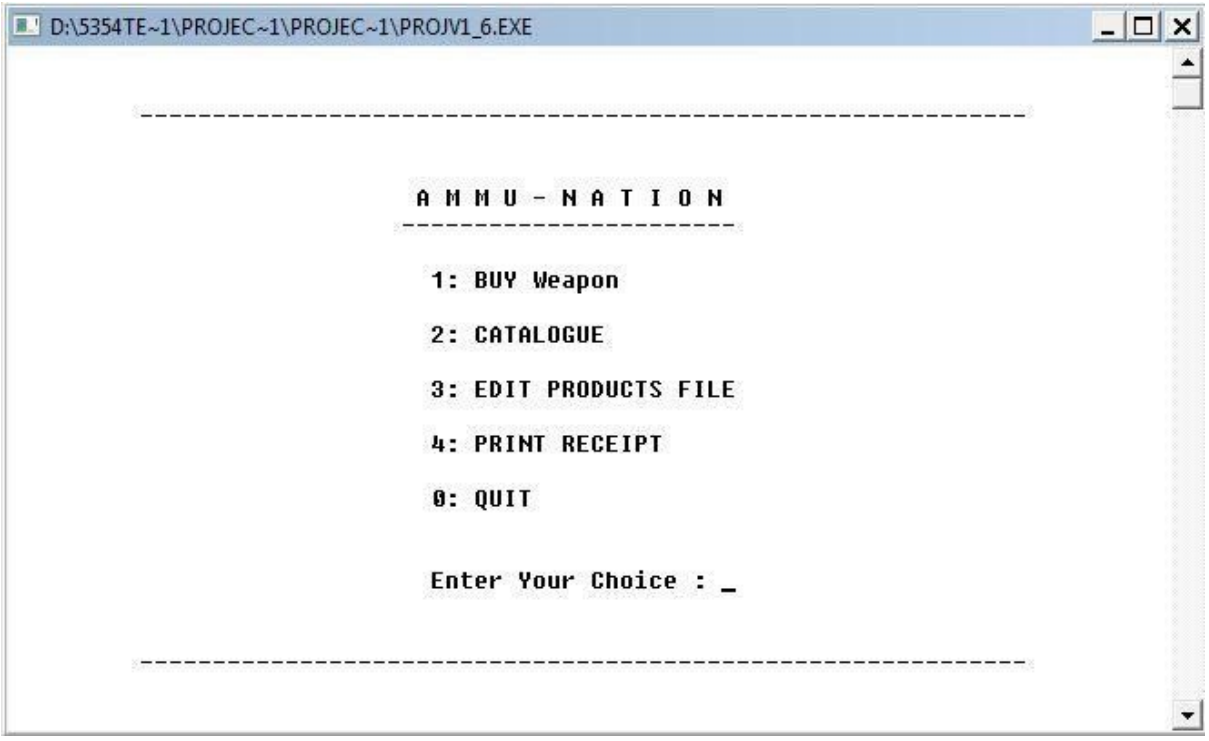

Selecting option ‘2’ lets the user delete any weapon.



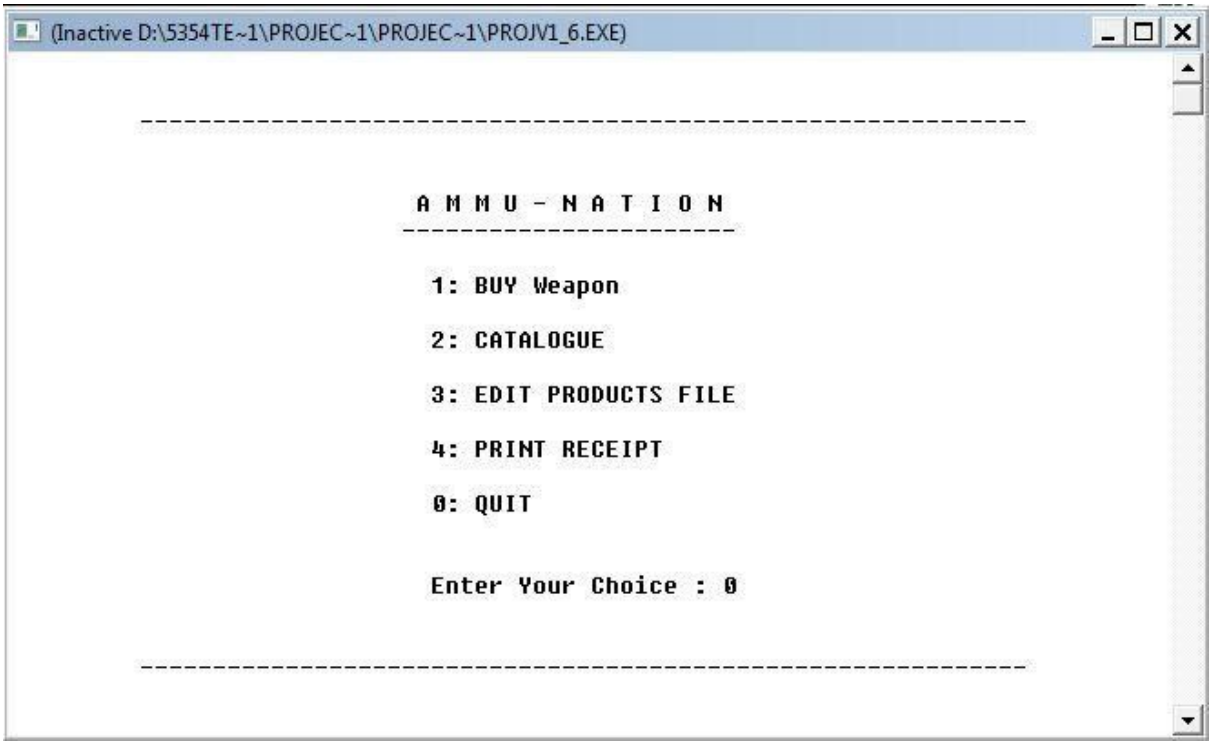
Upon entering the code, the details of the corresponding weapon are displayed.




A final prompt appears before confirming the deletion.




The Main Menu is accessed again.




Selecting option ‘0’ renders the output window inactive, thus exiting the program.

# REFERENCES

Sumita Arora Class 12 C++ Textbook