

Bluebird Airlines has flights from Phoenix to six other cities in Arizona. The cities are referred to by number, 1 to 6. The price for a round-trip ticket to each of the cities is shown here.

City	1	2	3	4	5	6
Price	56.79	105.69	93.49	155.99	87.49	73.99

Write a program that computes the total price of tickets that a customer orders. The program should prompt the user for the number of the destination city and the number of tickets desired. If the user enters an invalid city number, the program should display an error message and terminate. The program should display the total price of the ticket order. Use an array to store the ticket price table.

```
#include <iostream>
using namespace std;
int main()
{
    int city[6],num_city,num_ticket;
    float Price[]={56.79,105.69,93.49,155.99,87.49,73.99},store=0;
    cout << "the number of the destination city: ";
    cin >> num_city;
    if(num_city<1 || num_city>6)
    {
        cout << "\ninvalid number of city. " <<endl;
        return 0;
    }
    cout << "\nthe number of tickets desired: ";
    cin >> num_ticket;
    for(int i=6-num_ticket;i<num_city;i+)//(6-num_ticket) to get where he or she start travel
    {
        store+=Price[i];
    }
    cout << "\nthe total price of the ticket order: " << store << endl;
    return 0;
}
```



A bookstore owner wants you to write a program to calculate the store's weekly payroll. The store's employees are paid hourly. Overtime is to be paid at the rate of 1.5 times the normal rate for hours an employee worked over 40. The program should prompt the user to enter the number of hours the employee worked and the pay rate for the employee. The program should display the regular pay, overtime pay, and gross pay for that employee. Then the program should prompt the user to enter the data for another employee. When the user responds that there are no more employees to process, the program should display the number of employees it processed and the total payroll, that is, the sum of the gross salaries of the employees.

The program should validate the pay rate as it is entered. The only valid hourly pay rates are the following: 5.50, 6.00, 6.50, 6.75, 7.00, 7.25, 7.50, 7.75, 8.00. Store the rates in an array. When a pay rate is entered, search the array for a match. If there is a match, continue the rest of the calculations. If there is no match, display an error message, a list of the valid pay rates, and prompt for another pay rate

```
#include<iostream>

using namespace std;

int main()
{
    int hours,overtime_hours=0,num=0;
    bool check_pay = false;
    float pay,regular_pay,overtime_pay,gross_pay,total_payroll=0;
        float valid_pay[9]={ 5.50, 6.00, 6.50, 6.75, 7.00, 7.25, 7.50, 7.75, 8.00 };
        char R='y';
        while(R=='y' || R=='Y')
        {
            cout << "\nenter the number of hours the employee worked: ";
            cin >> hours ;
            do{
                cout << "\nthe pay rate for the employee: ";
                cin >> pay;
                for(int i=0;i<9;i++)
                {
                    if(pay==valid_pay[i])
                        check_pay=true;
                }
            }
            while(check_pay==false);
            if(hours>40)
```



```

overtime_hours = hours - 40;
regular_pay = (hours - overtime_hours)*pay;
overtime_pay = overtime_hours * (pay*1.5);
gross_pay = regular_pay + overtime_pay;
cout << "\nThe regular_pay : " << regular_pay;
cout << "\nThe overtime_pay : " << overtime_pay;
cout << "\nThe gross_pay : " << gross_pay;
cout << "\nto calculate pay for another employee press (y)or not (n): ";
cin >> R;
num++;
total_payroll+=gross_pay;
check_pay=false;
}
cout << "\nthe number of employees : " << num;
cout << "\nthe total payroll : " << total_payroll << endl;
return 0;
}

```

A survey organization telephones 20 homes and records the household income of each family surveyed. Write a program that inputs the 20 incomes into an array and then sorts the array into decreasing order. The program should display the following statistics: the maximum income, the minimum income, the average income, and the median income. The median of a set of sorted numbers is the middle number, if there is an odd number of numbers. If there is an even number of numbers, the median is the average of the two middle numbers.

```

#include<iostream>
using namespace std;
int main()
{
int size=20;
float income[size],max,min,average,median,sum=0;
for (int i=0;i<size;i++)
{
cout << "enter the " << i+1 << " family income: ";
cin >> income[i];
sum+=unsigned (income[i]);
}
for (int i=0;i<size;i++)
{
for (int j=0;j<size;j++)

```



```
{
    if(income[i]>income[j])
        swap(income[i],income[j]);
}
}
max = income[0];
min = income[size-1];
average = sum/20;
if(size%2==0)
{
    median=income[size/2]+income[size/2+1];
    median/=2;
}
else
{
    int odd=(size/2)+1;
    median=income[odd];
}
cout << "\nthe maximum income: " << max << " $";
    cout << "\nthe minimum income: " << min << " $";
    cout << "\nthe average income: " << average << " $";
    cout << "\nthe median income: " << median << " $" << endl;
    return 0;
}
```



A sweatshirt manufacturer wants to take inventory of the college logo sweatshirts that it has in stock. The company makes sweatshirts for seven colleges. Refer to the colleges by number, 1-7. Sweatshirts come in four sizes: small, medium, large, and x-large. An employee gathers the inventory information by hand. Write a program that prompts the employee to enter the number of sweatshirts in stock for each of the seven colleges in each of the four sizes. Store the inventory information in a two-dimensional array. After inputting the inventory data, the program should display an inventory report in the following format.

```

                                Inventory Report
                                College
                                1 2 3 4 5 6 7 Total
Size
Small
Medium
Large
XLarge
College Total
Total Quantity On Hand

```

At the end of each row should be the total inventory for that size. At the bottom of each column should be total inventory of each college. The Total Quantity On Hand should be the total inventory of all sweatshirts.

```

#include<iostream>
#include <iomanip>
using namespace std;
int main()
{
    int sweatshirts[7][4],small=0,medium=0,large=0,x_large=0;
    int college[7]={0},Total_Quantity_On_Hand=0;

    for(int i=0;i<7;i++)
    {
        cout << "\ncollege " << i+1 << " enter the number of sweatshirts of each size " << endl << endl;
        cout << "small: ";
        cin >> sweatshirts[i][0];
        small+=sweatshirts[i][0];
        cout << "medium: ";
        cin >> sweatshirts[i][1];
        medium+=sweatshirts[i][1];
        cout << "large: ";
        cin >> sweatshirts[i][2];
        large+=sweatshirts[i][2];

```



```

cout << "x-large: ";
cin >> sweatshirts[i][3];
x_large+=sweatshirts[i][0];
college[i]= sweatshirts[i][0]+sweatshirts[i][1]+sweatshirts[i][2]+sweatshirts[i][3];
Total_Quantity_On_Hand+=college[i];
}
for(int i=0;i<5;i++)
cout << "\t";
cout << "college" << endl << endl << "\t";
for(int i=0;i<7;i++)
cout << "\t" << i+1;
cout << "\tTotal" << endl << endl;
for(int i=0;i<4;i++)
{
    if(i==0)
        cout << "small: ";
    else if(i==1)
        cout << "medium: ";
    else if(i==2)
        cout << "large: ";
    else if(i==3)
        cout << "x-large: ";

    for (int j=0;j<7;j++)
    {
        cout << setw(8) << sweatshirts[j][i] ;
    }
    if(i==0)
        cout << setw(10) << small << endl;
    else if(i==1)
        cout << setw(10) << medium << endl;

```



```
else if(i==2)
    cout << setw(10)<< large << endl;
else if(i==3)
    cout << setw(10)<< x_large << endl;
cout << endl;
}
cout << "Total  ";
for(int i=0;i<7;i++)
cout << "\t" << college[i];
cout << "\n\nTotal Quantity On Hand " << Total_Quantity_On_Hand << " sweatshirts."<< endl;
    return 0;
}
```

