



NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL – 506 004
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
DSA Assignment 2

Roll No: 197103

Name: Abhishek Pratap Singh

1	<p>Take input an array whose elements can be either integer or character.</p> <pre>#include<iostream> using namespace std; union U { int in; char c; }; int main() { int n; cout<<"Number of elements you want to enter\n"; cin>>n; int tag[n]; union U arr[n]; for(int i=0;i<n;i++) { cout<<"which type of data(0 for int, 1 for char) \n"; cin>>tag[i]; if(tag[i]) cin>>arr[i].c; else cin>>arr[i].in; } }</pre>
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```

cout<<"\n Entered data is \n";

for(int i=0;i<n;i++)

{

    if(tag[i])

        cout<<arr[i].c<<" ";

    else

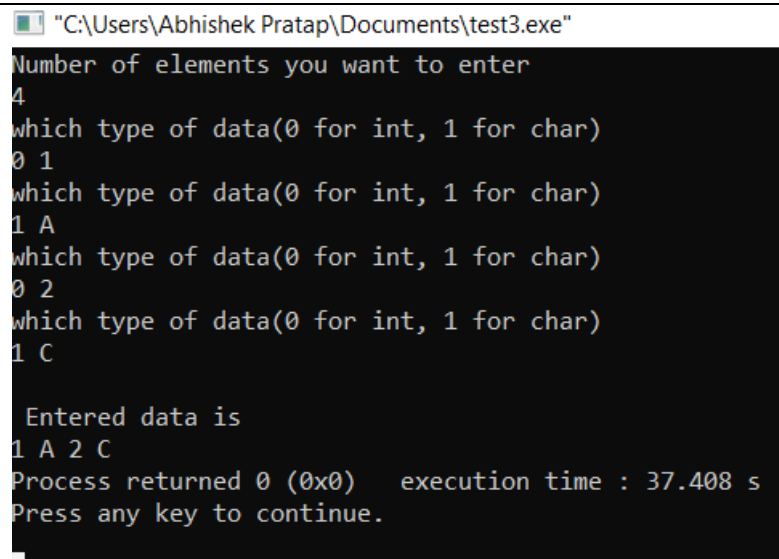
        cout<<arr[i].in<<" ";

}

return 0;

}

```



```

C:\Users\Abhishek Pratap\Documents\test3.exe
Number of elements you want to enter
4
which type of data(0 for int, 1 for char)
0 1
which type of data(0 for int, 1 for char)
1 A
which type of data(0 for int, 1 for char)
0 2
which type of data(0 for int, 1 for char)
1 C

Entered data is
1 A 2 C
Process returned 0 (0x0)   execution time : 37.408 s
Press any key to continue.

```

2 Take input an array store its elements either in starting side or in last side, by asking from users.

```

#include<iostream>

using namespace std;

int main()

{

    int n;

    cout<<"Number of elements you want to enter\n";

    cin>>n;

    int tag[n];

```

```

int arr[n];

int right=n-1;

int left=0;

for(int i=0;i<n;i++)

{

    cout<<"which side you want to insert and number to be inserted(0 for starting, 1
for last) \n";

    cin>>tag[i];

    if(tag[i]) {cin>>arr[right]; right--;}

    else      {cin>>arr[left]; left++; }

}

cout<<"\n Data stored in array is \n";

for(int i=0;i<n;i++) cout<<arr[i]<<" ";

cout<<endl;

right=n-1;

left=0;

cout<<"Actual order in which data was entered is"<<endl;

for(int i=0;i<n;i++)

{

    if(tag[i])

        {cout<<arr[right]<<" "; right--; }

    else

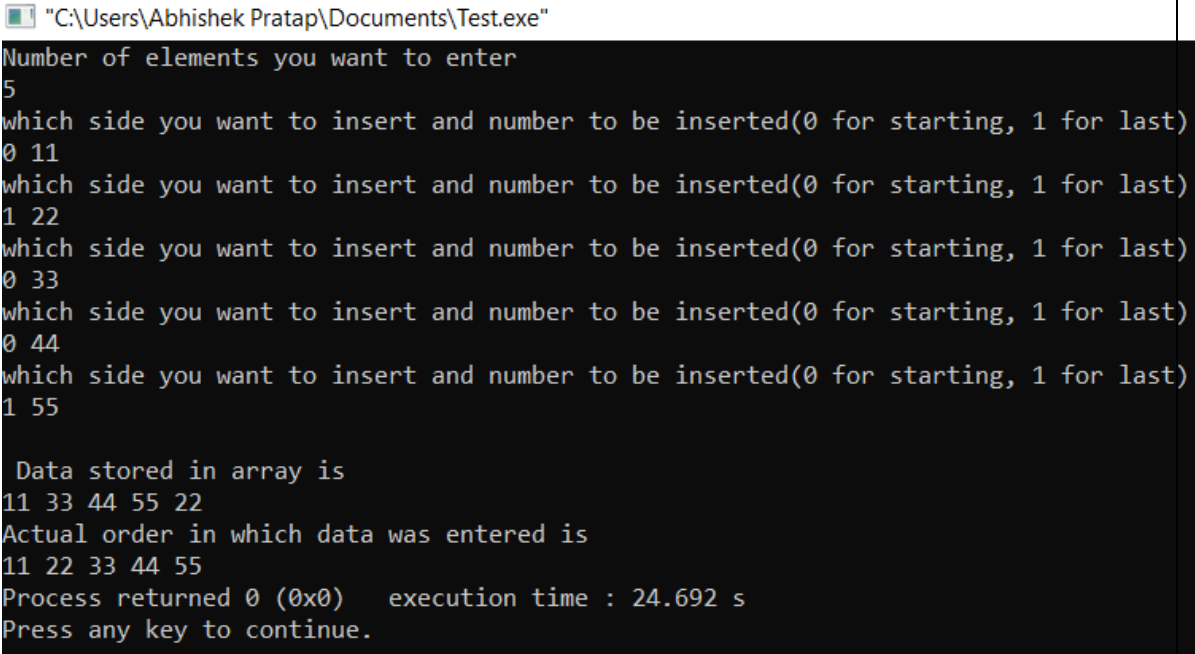
        {cout<<arr[left]<<" "; left++; }

}

return 0;

}

```

	
3	<p>A railway employee is paid 1200/- (rupees) per day for regular 8 hours of work. Any hours over that are paid overtime rate of 100/- per hour. From the employee's gross pay (total pay per month), 2% is deducted for professional tax, 10% for provident fund and 5% for income tax. However, the employee will get 2% (of the gross pay) for the education of a child. Write a program to create a structure of employee and read data of 'N' employees as follows: i)the number of extra hours (which the employee worked during a month) ii)the number of children the employee has. The program should output the 'N' employees gross pay (total pay earned by the employee by working) and net take-home pay (after deductions and earning for child education). Assume all months have 30 days</p> <pre> #include<iostream> using namespace std; union U { int in; char c; }; int main() { int n; </pre>

```

cout<<"Number of elements you want to enter\n";

cin>>n;

int tag[n];

union U arr[n];

int right=n-1;

int left=0;

for(int i=0;i<n;i++)

{

    cout<<"which type of data(0 for int, 1 for char) \n";

    cin>>tag[i];

    if(tag[i])    { cin>>arr[right].c; right--; }

    else        { cin>>arr[left].in; left++; }

}

cout<<"\n Data stored in array is \n";

for(int i=0;i<n;i++)

{

    if(i<left)

        cout<<arr[i].in<<" ";

    else


        cout<<arr[i].c<<" ";

}

return 0;

}

```

 "C:\Users\Abhishek Pratap\Documents\Test.exe"

Number of elements you want to enter

6

which type of data(0 for int, 1 for char)

0 11

which type of data(0 for int, 1 for char)

1 A

which type of data(0 for int, 1 for char)

1 B

which type of data(0 for int, 1 for char)

0 22

which type of data(0 for int, 1 for char)

1 C

which type of data(0 for int, 1 for char)

0 33

Data stored in array is

11 22 33 C B A

Process returned 0 (0x0) execution time : 27.047

Press any key to continue.