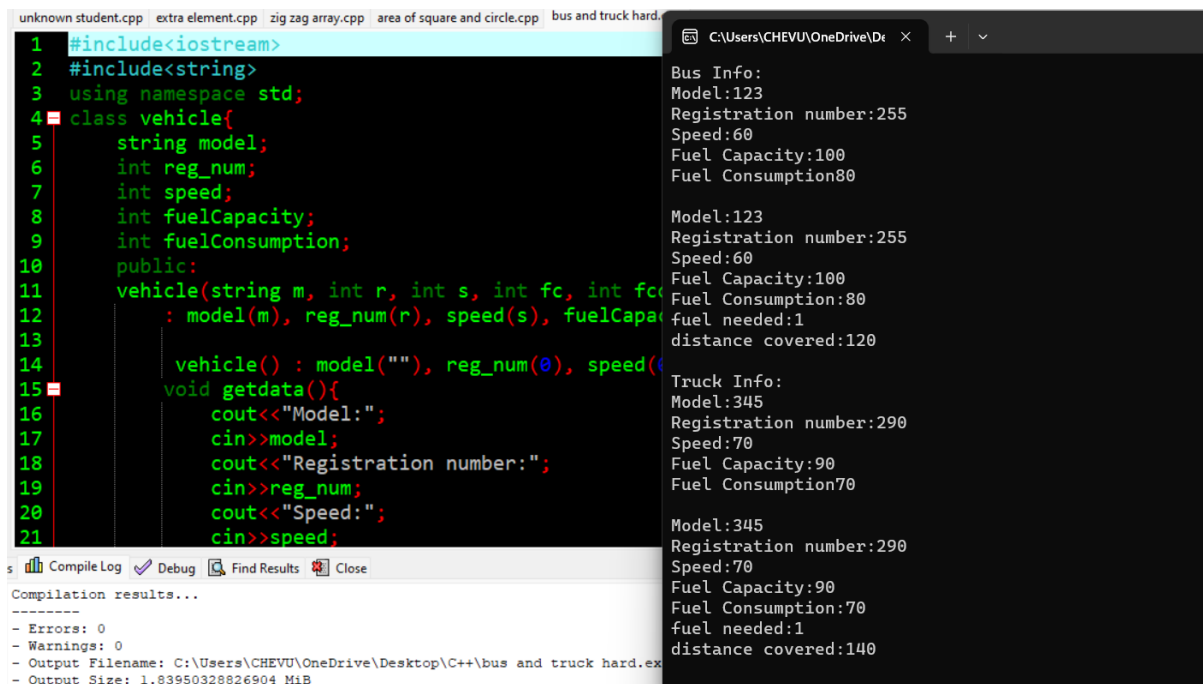


1. Class Vehicle-Sub Classes Bus and Truck



```
1 #include<iostream>
2 #include<string>
3 using namespace std;
4 class vehicle{
5     string model;
6     int reg_num;
7     int speed;
8     int fuelCapacity;
9     int fuelConsumption;
10 public:
11     vehicle(string m, int r, int s, int fc, int fcc)
12         : model(m), reg_num(r), speed(s), fuelCapacity(fc), fuelConsumption(fcc) {}
13     vehicle() : model(""), reg_num(0), speed(0), fuelCapacity(0), fuelConsumption(0) {}
14     void getdata(){
15         cout<<"Model:";
16         cin>>model;
17         cout<<"Registration number:";
18         cin>>reg_num;
19         cout<<"Speed:";
20         cin>>speed;
21     }
```

Bus Info:
Model:123
Registration number:255
Speed:60
Fuel Capacity:100
Fuel Consumption80

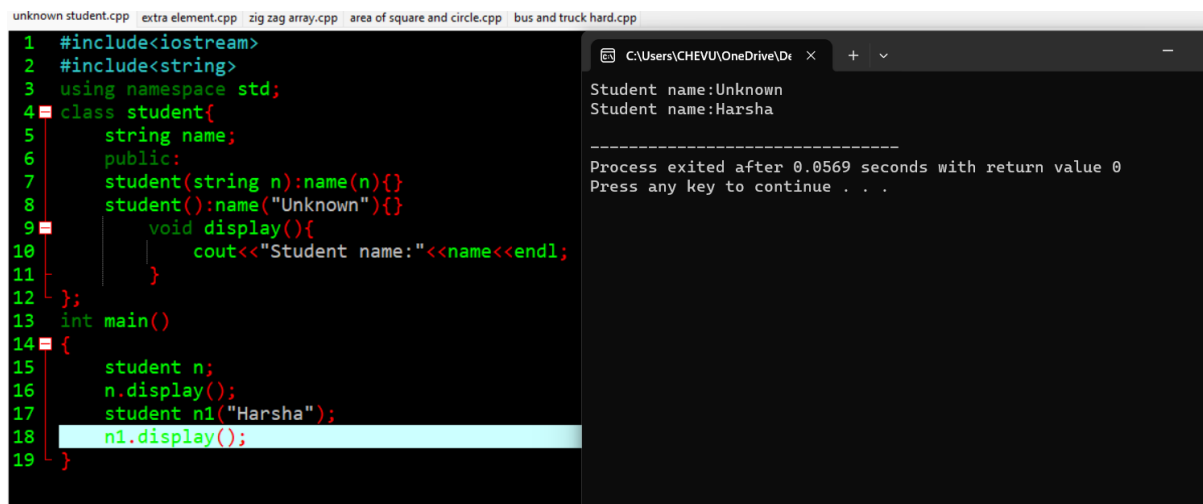
Model:123
Registration number:255
Speed:60
Fuel Capacity:100
Fuel Consumption:80
fuel needed:1
distance covered:120

Truck Info:
Model:345
Registration number:290
Speed:70
Fuel Capacity:90
Fuel Consumption70

Model:345
Registration number:290
Speed:70
Fuel Capacity:90
Fuel Consumption:70
fuel needed:1
distance covered:140

Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\CHEVU\OneDrive\Desktop\C++\bus and truck hard.ex
- Output Size: 1.83950328826904 MiB

2.Names of Student using Constructor



```
1 #include<iostream>
2 #include<string>
3 using namespace std;
4 class student{
5     string name;
6     public:
7     student(string n):name(n){}
8     student():name("Unknown"){}
9     void display(){
10         cout<<"Student name:"<<name<<endl;
11     }
12 };
13 int main()
14 {
15     student n;
16     n.display();
17     student n1("Harsha");
18     n1.display();
19 }
```

Student name:Unknown
Student name:Harsha

Process exited after 0.0569 seconds with return value 0
Press any key to continue . . .

3.Extra Element in array

```
unknown student.cpp  extra element.cpp  zig zag array.cpp  area of square and circle.cpp  bus and truck hard.cpp
1  #include<iostream>
2  using namespace std;
3  int Extra_ELE(int A[],int B[],int N)
4  {
5      int extra=0;
6      for(int i=0;i<=N;i++)
7      {
8          extra^=A[i];
9      }
10     for(int i=0;i<N;i++)
11     {
12         extra^=B[i];
13     }
14     cout<<"Extra element:"<<extra;
15 }
16 int main()
17 {
18     int A[]={7,9,2,4,1,6};
19     int B[]={9,6,7,2,4};
20     int N=sizeof(B)/sizeof(B[0]);
21     Extra_ELE(A,B,N);
}
```

```
C:\Users\CHEVU\OneDrive\De  x  +  v
Extra element:1
-----
Process exited after 0.06438 seconds with return value
Press any key to continue . . . |
```

4.Zig-Zag fashion

```
unknown student.cpp  extra element.cpp  zig zag array.cpp  area of square and circle.cpp
1  #include<iostream>
2  using namespace std;
3  int Zig_Zag(int arr[],int N)
4  {
5      bool less=true;
6      for(int i=0;i<N-1;i++)
7      {
8          if(less){
9              if(arr[i]>arr[i+1])
10             {
11                 swap(arr[i],arr[i+1]);
12             }
13         }
14         else
15         {
16             if(arr[i]<arr[i+1])
17             {
18                 swap(arr[i],arr[i+1]);
19             }
20         }
21         less=!less;
22     }
23 }
```

```
C:\Users\CHEVU\OneDrive\De  x  +  v
4 3 7 8 6 2 1
3 7 4 8 2 6 1
-----
Process exited after 0.05741 seconds with return value 0
Press any key to continue . . . |
```

5.Area of Square and Circle

```

unknown student.cpp  extra element.cpp  zig zag array.cpp  area of square and circle.cpp  bus and truck hard.cpp
20     void display()
21     {
22         getl();
23         cout<<"Area of Square:"<<1<<endl;
24     }
25 };
26 class circle:public shape{
27     public:
28         void display()
29         {
30             getr();
31             cout<<"Area of circle:"<<M_PI*r*r<<endl;
32         }
33 };
34 int main()
35 {
36     square s;
37     s.display();
38     circle c;
39     c.display();
40 }

```

```

C:\Users\CHEVU\OneDrive\De  X  +  v
Length of square:4
Area of Square:16
Radius of circle:5
Area of circle:78.5398

-----
Process exited after 13.64 seconds with return value 0
Press any key to continue . . .

```