

C:\Users\shree\OneDrive\Documents\vehreg.cpp - [Executing] - Dev-C++ 5.11

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Project Classes Debug area of circle using abstract class.cpp vehreg.cpp student name using constructor.cpp Extra element.cpp rearrange array using zigzag fashion.cpp

```
1 #include <iostream>
2 using namespace std;
3 class Vehicle {
4 private:
5     string vehicleModel;
6     string registrationNumber;
7     double vehicleSpeed;
8     double fuelCapacity;
9     double fuelConsumption;
10 public:
11     Vehicle(string model, string regnum, double speed, double capacity, double consumption)
12         : vehicleModel(model), registrationNumber(regnum), vehicleSpeed(speed), fuelCapacity(capacity), fuelConsumption(consumption) {}
13     string getVehicleModel() { return vehicleModel; }
14     void setVehicleModel(string model) { vehicleModel = model; }
15
16     string getRegistrationNumber() { return registrationNumber; }
17     void setRegistrationNumber(string regnum) { registrationNumber = regnum; }
18     double getVehicleSpeed() { return vehicleSpeed; }
19     void setVehicleSpeed(double speed) { vehicleSpeed = speed; }
20     double getFuelCapacity() { return fuelCapacity; }
21     void setFuelCapacity(double capacity) { fuelCapacity = capacity; }
22     double getFuelConsumption() { return fuelConsumption; }
23     void setFuelConsumption(double consumption) { fuelConsumption = consumption; }
24     double fuelNeeded(double distance) {
25         return distance / fuelConsumption;
26     }
27     double distanceCovered(double time) {
28         return vehicleSpeed * time;
29     }
30     void display() {
31         cout << "Vehicle Model: " << vehicleModel << endl;
32         cout << "Registration Number: " << registrationNumber << endl;
33         cout << "Vehicle Speed: " << vehicleSpeed << " km/h" << endl;
34         cout << "Fuel Capacity: " << fuelCapacity << " liters" << endl;
35         cout << "Fuel Consumption: " << fuelConsumption << " km/l" << endl;
36     }
37 };
38
39 class Bus : public Vehicle {
40 public:
41     Bus(string model, string regnum, double speed, double capacity, double consumption)
42         : Vehicle(model, regnum, speed, capacity, consumption) {}
43 };
44
45 class Truck : public Vehicle {
46 public:
47     Truck(string model, string regnum, double speed, double capacity, double consumption)
48         : Vehicle(model, regnum, speed, capacity, consumption) {}
49 };
50
51 class Transport {
52 public:
53     static void main() {
54         Bus bus("Volvo", "AB1234", 80, 300, 5);
55     }
56 }
```

Bus Details:

Vehicle Model: Volvo
Registration Number: AB1234
Vehicle Speed: 80 km/h
Fuel Capacity: 300 liters
Fuel Consumption: 5 km/l
Fuel needed for 100 km: 20 liters
Distance covered in 2 hours: 160 km

Truck Details:

Vehicle Model: Tata
Registration Number: CD5678
Vehicle Speed: 60 km/h
Fuel Capacity: 500 liters
Fuel Consumption: 3 km/l
Fuel needed for 100 km: 33.3333 liters
Distance covered in 2 hours: 120 km

Process exited after 0.4882 seconds with return value 0
Press any key to continue . . .

```
C:\Users\shree\OneDrive\Documents\Extra element.cpp - Dev-C++ 5.11
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(globals)
Project Classes Debug
area of circle using abstract class.cpp
student name using constructor.cpp Extra element.cpp vehreg.cpp
rearrange array using zigzag fashion.cpp

1 #include <iostream>
2 using namespace std;
3 void EXTRA_ELE(int A[], int B[], int N) {
4     int sumA = 0, sumB = 0;
5     for (int i = 0; i < N; ++i) {
6         sumA += A[i];
7     }
8     for (int i = 0; i < N - 1; ++i) {
9         sumB += B[i];
10    }
11    int extraElement = sumA - sumB;
12    cout << "Extra Element: " << extraElement << endl;
13 }
14 int main() {
15     int A[] = {14, 21, 5, 19, 8, 4, 23, 11};
16     int B[] = {23, 8, 19, 4, 14, 11, 5};
17     int N = sizeof(A) / sizeof(A[0]);
18
19     EXTRA_ELE(A, B, N);
20
21     return 0;
22 }
23
```

```
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Extra Element: 21
-----
Process exited after 2.44 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\shree\OneDrive\Documents\student name using constructor.cpp - [Executing] - Dev-C++ 5.11
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IDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
student name using constructor.cpp
1 #include <iostream>
2 using namespace std;
3 class Student {
4 private:
5     string name;
6 public:
7     Student() : name("Unknown") {}
8     Student(string name) : name(name) {}
9
10 void printName() {
11     cout << "Student Name: " << name << endl;
12 }
13 };
14 int main() {
15     Student student1;
16     Student student2("John Doe");
17
18     student1.printName();
19     student2.printName();
20
21     return 0;
22 }
```

```
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Student Name: Unknown
Student Name: John Doe

-----
Process exited after 0.1785 seconds with return value 0
Press any key to continue . . .
```



```
C:\Users\shree\OneDrive\Documents\rearange array using zigzag fashion.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project Classes Debug
area of circle using abstract class.cpp
student name using constructor.cpp
Extra element.cpp
vehreg.cpp
rearange array using zigzag fashion.cpp

1 #include <iostream>
2 using namespace std;
3 void zigzagArray(int arr[], int N) {
4     bool flag = true;
5     for (int i = 0; i < N - 1; ++i) {
6         if (flag) {
7             if (arr[i] > arr[i + 1]) {
8                 swap(arr[i], arr[i + 1]);
9             }
10        } else {
11            if (arr[i] < arr[i + 1]) {
12                swap(arr[i], arr[i + 1]);
13            }
14        }
15        flag = !flag;
16    }
17 }
18 int main() {
19     int arr[] = {4, 3, 7, 8, 6, 2, 1};
20     int N = sizeof(arr) / sizeof(arr[0]);
21     zigzagArray(arr, N);
22     cout << "Zig-Zag Array: ";
23     for (int i = 0; i < N; ++i) {
24         cout << arr[i] << " ";
25     }
26     cout << endl;
27     return 0;
28 }
```

```
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Zig-Zag Array: 3 7 4 8 2 6 1
-----
Process exited after 2.431 seconds with return value 0
Press any key to continue . . .
```