

1

The screenshot shows a C++ IDE with a file named `bus and truck hard.cpp`. The code defines a `vehicle` class with attributes `model`, `reg_num`, `speed`, `fuelCapacity`, and `fuelConsumption`. It includes a constructor, a `getdata()` method for input, and a `display()` method for output. The `main` function creates two objects: a `bugati` and a `suzuki`, and calls their `display()` methods.

```

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 fco)
12         : model(m), reg_num(r), speed(s), fuelCapacity(fc), fuelConsumption(fco) {}
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         cout<<"Fuel Capacity:";
22         cin>>fuelCapacity;
23         cout<<"Fuel Consumption:";
24         cin>>fuelConsumption;
25     }
26     void display() const {
27         cout<<"Bus Info:"<<endl;
28         cout<<"Model:"<<model<<endl;
29         cout<<"Registration number:"<<reg_num<<endl;
30         cout<<"Speed:"<<speed<<endl;
31         cout<<"Fuel Capacity:"<<fuelCapacity<<endl;
32         cout<<"Fuel Consumption:"<<fuelConsumption<<endl;
33         cout<<"distance covered:"<<distance<<endl;
34     }
35 };
36
37 int main() {
38     vehicle bugati("bugati", 33, 334, 43264, 32434);
39     vehicle suzuki("suzuki", 43434, 443, 3424, 13123);
40     bugati.display();
41     suzuki.display();
42     return 0;
43 }

```

The output window shows the following results:

```

Bus Info:
Model:bugati
Registration number:33
Speed:334
Fuel Capacity:43264
Fuel Consumption:32434
distance covered:668

Truck Info:
Model:suzuki
Registration number:43434
Speed:443
Fuel Capacity:3424
Fuel Consumption:13123
distance covered:886

Process exited after 19.11 seconds with return value 0
Press any key to continue . . .

```

The compiler log shows no errors or warnings, and the output file is `C:\TURBOC3\DSA0156 C++\bus and truck hard.exe`.

2

The screenshot shows a C++ IDE with a file named `names of students by creating a Student class inheritance.cpp`. The code defines a `Student` class with a `name` attribute and a `display()` method. The `main` function creates two objects: `student1` (with name "Unknown") and `student2` (with name "John Doe"), and calls their `display()` methods.

```

2 #include <string>
3 using namespace std;
4 class Student {
5     string name;
6 public:
7     Student() {
8         name = "Unknown";
9     }
10    Student(const string& studentName) {
11        name = studentName;
12    }
13    void display() const {
14        cout << "Student Name: " << name << endl;
15    }
16 };
17
18 int main() {
19     Student student1;
20     Student student2("John Doe");
21     student1.display();
22     student2.display();
23 }

```

The output window shows the following results:

```

Student Name: Unknown
Student Name: John Doe

Process exited after 0.0738 seconds with return value 0
Press any key to continue . . .

```

The compiler log shows no errors or warnings, and the output file is `C:\TURBOC3\DSA0156 C++\names of students by creating a Student class inheritance.exe`.

3

Function EXTRA_ELE in inheritance.cpp

```

1 #include <iostream>
2 using namespace std;
3 void E_E(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 eE = sumA - sumB;
12    cout << "The extra element is: " << eE << 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     E_E(A, B, N);
19 }
20

```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\TURBOC3\DSA0156 C++\Function EXTRA_ELE in inheritance.exe
- Output Size: 1.03321199800371 MiB
- Compilation Time: 0.47s

Process exited after 0.08138 seconds with return value 0
Press any key to continue . . .

4

array of distinct elements of size N in c++.cpp

```

1 #include <iostream>
2 #include <vector>
3 using namespace std;
4 void d(vector<int>& arr, int N) {
5     for (int i = 0; i < N - 1; ++i) {
6         if (i % 2 == 0) {
7             if (arr[i] >= arr[i + 1]) {
8                 swap(arr[i], arr[i + 1]);
9             }
10        }
11        else {
12            if (arr[i] <= arr[i + 1]) {
13                swap(arr[i], arr[i + 1]);
14            }
15        }
16    }
17 }
18 void d1(const vector<int>& arr) {
19     for (int num : arr) {
20         cout << num << " ";
21     }
22 }
23

```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\TURBOC3\DSA0156 C++\array of distinct elements of size N in c++.exe
- Output Size: 1.05172367098947 MiB
- Compilation Time: 0.49s

Fig: Tag Array: 3 7 4 8 2 6 1
Process exited after 0.07305 seconds with return value 0
Press any key to continue . . .