

OOP LAB TASK # 12

Name: Shahmeer khan.

ClassID: 106278.

Student-ID:12113.

Task:

Question no. 1:

Inputted Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Lab_Task
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("OOP LAB TASK 12: ");
            Console.WriteLine("Question no. 1:");
            int i = 0;

            Console.WriteLine("Press A to enter new book." + "\nPress any other key to exit the Program.");
            string choice = Console.ReadLine();

            if (choice == "a" || choice == "A")
            {
                do
                {
                    Console.WriteLine("Enter book category below\n\nChemistry\tComputer\tMaths");
                    string cat = Console.ReadLine();

                    if (cat == "chemistry" || cat == "CHEMISTRY")
                    {
                        Console.WriteLine("Book Name =");
                        string a = Console.ReadLine();
                        Console.WriteLine("Author Name = ");
                        string b = Console.ReadLine();
                        Console.WriteLine("Price =");
                        double c = Convert.ToDouble(Console.ReadLine());

                        Chemistrybooks cheems = new Chemistrybooks();
```

```

        cheems.Info(a, b, c, 0);
    }

    else if (cat == "computer" || cat == "COMPUTER")
    {
        Console.WriteLine("Book Name =");
        string a = Console.ReadLine();
        Console.WriteLine("Author Name = ");
        string b = Console.ReadLine();
        Console.WriteLine("Price =");
        double c = Convert.ToDouble(Console.ReadLine());

        Computerbooks comps = new Computerbooks();
        comps.Info(a, b, c, 0);
    }

    else if (cat == "maths" || cat == "MATHS")
    {
        Console.WriteLine("Book Name =");
        string a = Console.ReadLine();
        Console.WriteLine("Author Name = ");
        string b = Console.ReadLine();
        Console.WriteLine("Price =");
        double c = Convert.ToDouble(Console.ReadLine());

        Mathbooks ehh = new Mathbooks();
        ehh.Info(a, b, c, 0);
    }

    else
    {
        Console.WriteLine("Bye!");
    }

    } while (i < 5);
}
else
{
    Console.WriteLine("Program Ended");
}
Console.ReadKey();
}
}

abstract class Book
{
    public string name { get; set; }
    public string author { get; set; }
    public double price { get; set; }
    public int qty { get; set; }

    public abstract void Info(string name, string author, double price, int qty);
}

class Chemistrybooks : Book
{
    public override void Info(string _Name, string _Author, double _Price, int _qty)

```

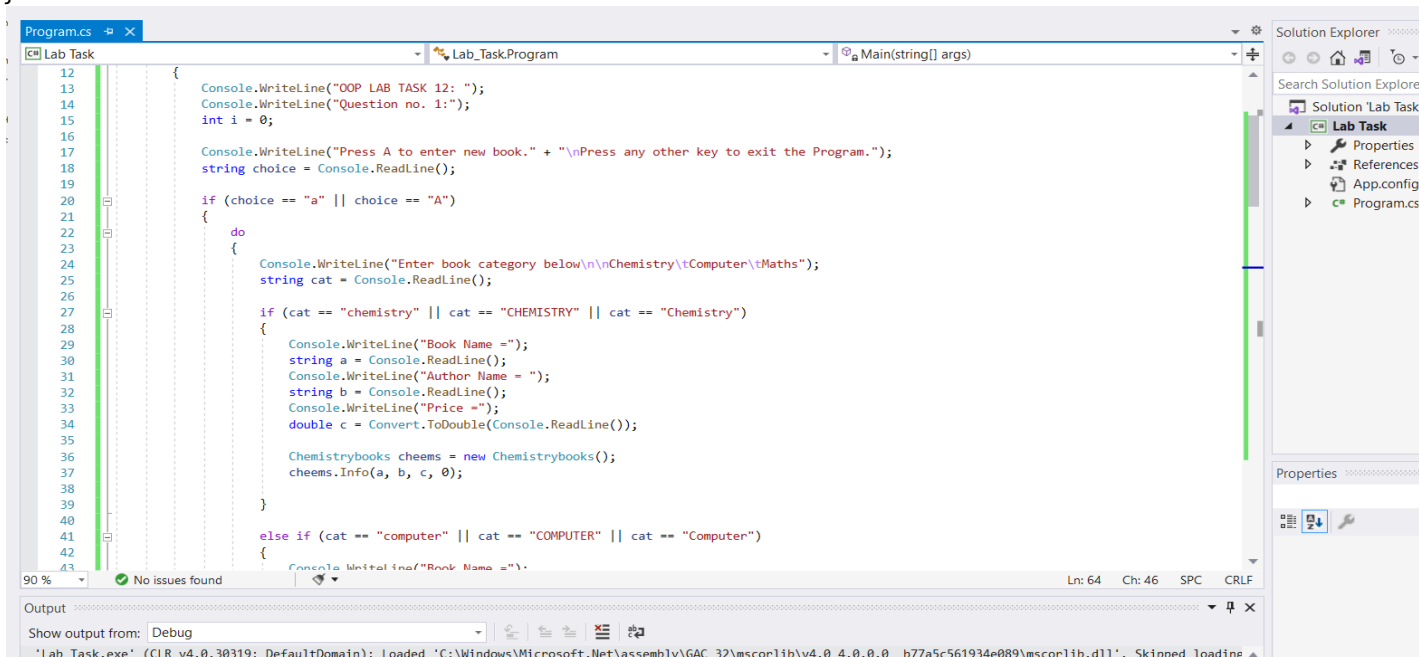
```

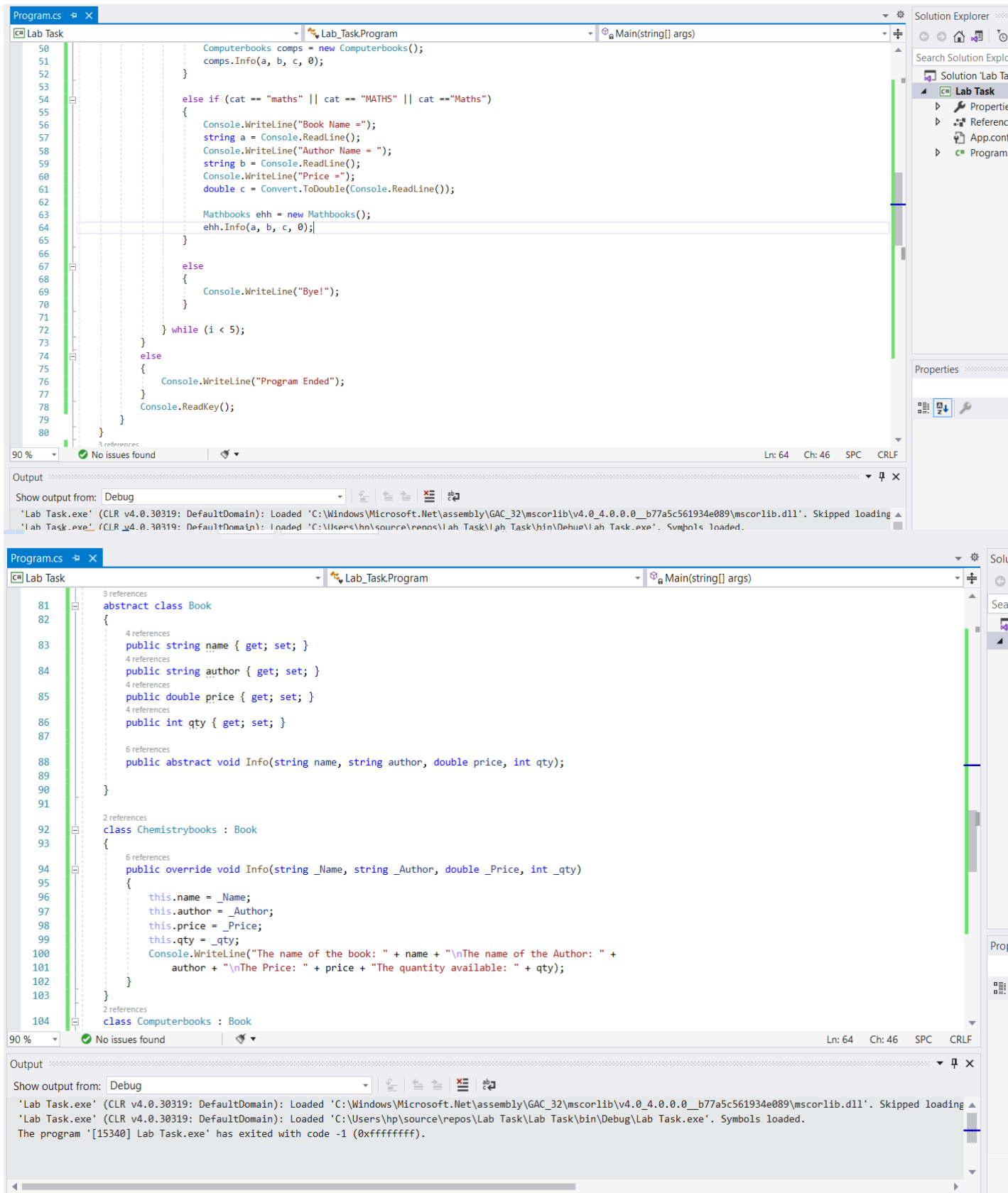
    {
        this.name = _Name;
        this.author = _Author;
        this.price = _Price;
        this.qty = _qty;
        Console.WriteLine("The name of the book: " + name + "\nThe name of the
Author: " +
            author + "\nThe Price: " + price + "The quantity available: " + qty);
    }
}
class Computerbooks : Book
{
    public override void Info(string _Name, string _Author, double _Price, int _qty)
    {
        this.name = _Name;
        this.author = _Author;
        this.price = _Price;
        this.qty = _qty;

        Console.WriteLine("OK");
    }
}
class Mathbooks : Book
{
    public override void Info(string _Name, string _Author, double _Price, int _qty)
    {
        this.name = _Name;
        this.author = _Author;
        this.price = _Price;
        this.qty = _qty;

        Console.WriteLine("Maths! Seriously ?\nWell, the information you entered has
been stored.");
    }
}
}

```





```
102     }
103 }
104 class Computerbooks : Book
105 {
106     public override void Info(string _Name, string _Author, double _Price, int _qty)
107     {
108         this.name = _Name;
109         this.author = _Author;
110         this.price = _Price;
111         this.qty = _qty;
112         Console.WriteLine("OK");
113     }
114 }
115
116 class Mathbooks : Book
117 {
118     public override void Info(string _Name, string _Author, double _Price, int _qty)
119     {
120         this.name = _Name;
121         this.author = _Author;
122         this.price = _Price;
123         this.qty = _qty;
124
125         Console.WriteLine("Maths! Seriously ?\nWell, the information you entered has been stored.");
126     }
127 }
128
129 }
```

Output:

```
C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe
OOP LAB TASK 12:
Question no. 1:
Press A to enter new book.
Press any other key to exit the Program.
a
Enter book category below

Chemistry    Computer    Maths
Maths
Book Name =
Doggars
Author Name =
Don't know
Price =
350
Maths! Seriously ?
Well, the information you entered has been stored.
Enter book category below

Chemistry    Computer    Maths

Bye!
Enter book category below

Chemistry    Computer    Maths
Computer
Book Name =
CS
Author Name =
DK
Price =
300
OK
Enter book category below

Chemistry    Computer    Maths

Bye!
```

Question no. 2:

Inputted Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Lab_Task
{
    class Program
    {
        static void Main(string[] args)
        {
            Boat b = new Boat();
            b.ModeOfTravel();
            Car c = new Car();
            c.ModeOfTravel();
            Airplane a = new Airplane();
            a.ModeOfTravel();

            Console.ReadKey();
        }
    }

    public abstract class Travelmode
    {
        public abstract void ModeOfTravel();
    }

    class Boat : Travelmode
    {
        public override void ModeOfTravel()
        {
            Console.WriteLine("Sea");
        }
    }

    class Car : Travelmode
    {
        public override void ModeOfTravel()
        {
            Console.WriteLine("Earth");
        }
    }

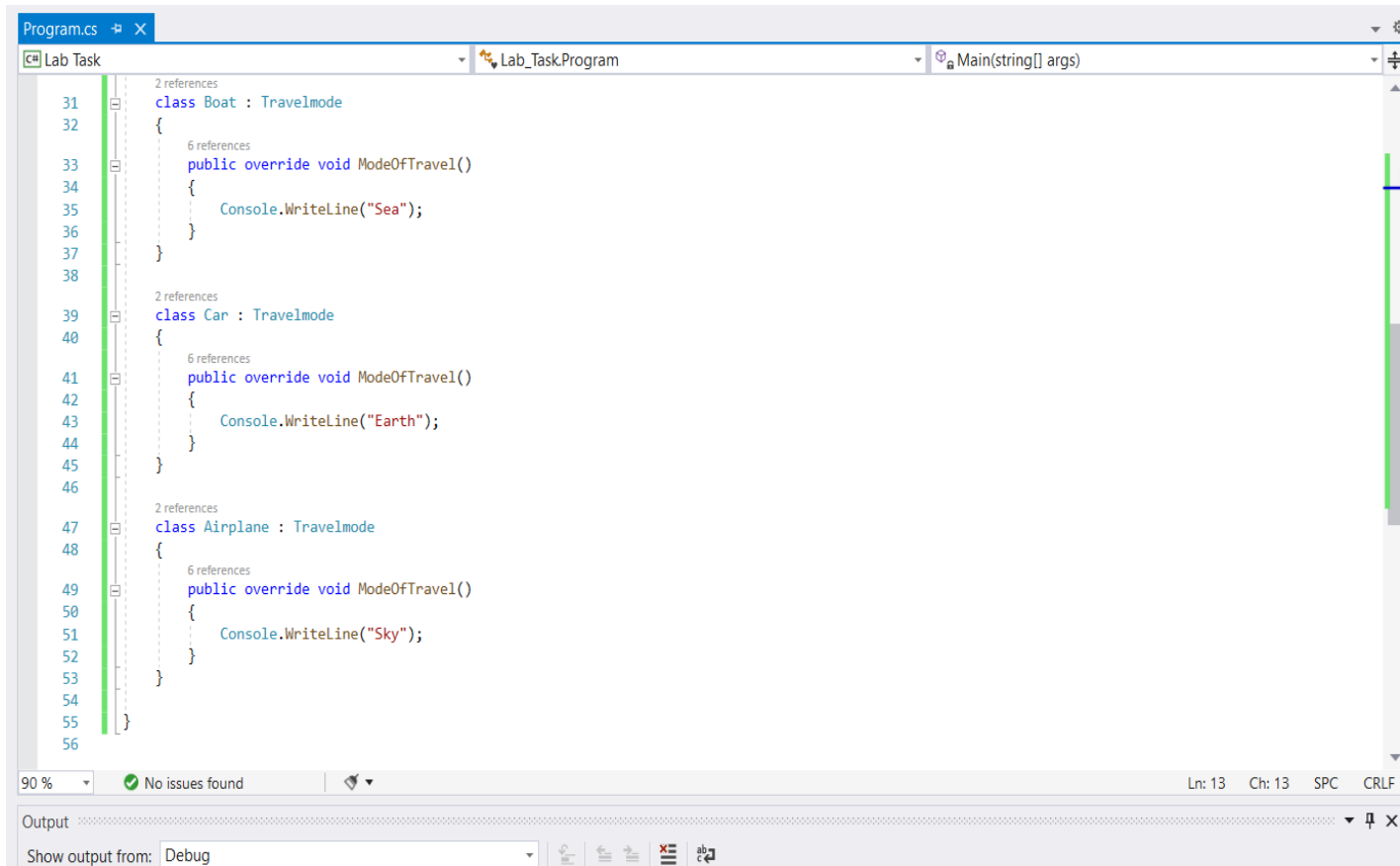
    class Airplane : Travelmode
    {
        public override void ModeOfTravel()
        {
            Console.WriteLine("Sky");
        }
    }
}
```

```
}
Program.cs
Lab Task
Lab_Task.Program
Main(string[] args)

1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Text;
5 using System.Threading.Tasks;
6
7 namespace Lab_Task
8 {
9     0 references
10    class Program
11    {
12        0 references
13        static void Main(string[] args)
14        {
15            Boat b = new Boat();
16            b.ModeOfTravel();
17            Car c = new Car();
18            c.ModeOfTravel();
19            Airplane a = new Airplane();
20            a.ModeOfTravel();
21
22            Console.ReadKey();
23        }
24    }
25
26    3 references
27    public abstract class Travelmode
28    {
29        6 references
30        public abstract void ModeOfTravel();
31    }
32
33    90 %
34    No issues found
35    Ln: 13 Ch: 13
36    Output
```

```
Program.cs
Lab Task
Lab_Task.Program
Main(string[] args)

26    3 references
27    public abstract class Travelmode
28    {
29        6 references
30        public abstract void ModeOfTravel();
31    }
32
33    2 references
34    class Boat : Travelmode
35    {
36        6 references
37        public override void ModeOfTravel()
38        {
39            Console.WriteLine("Sea");
40        }
41    }
42
43    2 references
44    class Car : Travelmode
45    {
46        6 references
47        public override void ModeOfTravel()
48        {
49            Console.WriteLine("Earth");
50        }
51    }
52
53    2 references
54    class Airplane : Travelmode
55    {
56        6 references
57        public override void ModeOfTravel()
58        {
59
60        }
61    }
62
63    90 %
64    No issues found
65    Ln: 13 Ch: 13 SPC CRLF
66    Output
67    Show output from: Debug
68    'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0.0.0_b77a5c561934e089\mscorlib.dll'. Skipped loading
69    'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe'. Symbols loaded.
```



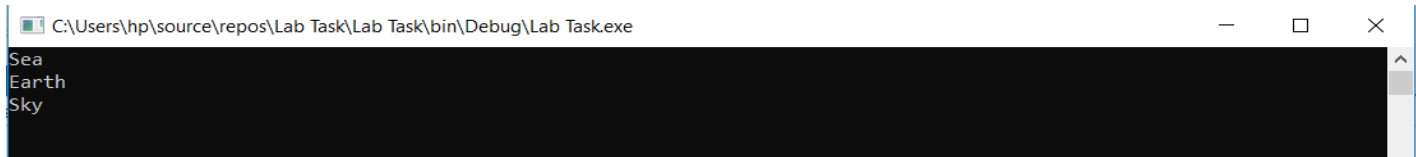
```
31 class Boat : Travelmode
32 {
33     6 references
34     public override void ModeOfTravel()
35     {
36         Console.WriteLine("Sea");
37     }
38 }
39 class Car : Travelmode
40 {
41     6 references
42     public override void ModeOfTravel()
43     {
44         Console.WriteLine("Earth");
45     }
46 }
47 class Airplane : Travelmode
48 {
49     6 references
50     public override void ModeOfTravel()
51     {
52         Console.WriteLine("Sky");
53     }
54 }
55 }
56 }
```

90 % No issues found Ln: 13 Ch: 13 SPC CRLF

Output

Show output from: Debug

Output:



```
C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe
Sea
Earth
Sky
```

Question no. 3:

Inputted Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
```



```

namespace Lab_Task
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("OOP LAB TASK 12: ");
            Console.WriteLine("Question no. 3:");
            Console.WriteLine("Press A to stop by for refuelling"
                + "\nPress any other key to check available modes of Travel");
            string a = Console.ReadLine();

            Boat b = new Boat();
            if (a == "a" || a == "A")
            {
                b.Refuel();
                Console.WriteLine("Ready to go");
            }

            else
            {
                Airplane ap = new Airplane();
                ap.ModeOfTravel();

                Car c = new Car();
                c.ModeOfTravel();

                //Boat b = new Boat();
                b.ModeOfTravel();
            }

            //b.Refuel();
            Console.ReadKey();
        }
    }

    public abstract class Travelmode
    {
        public abstract string ModeOfTravel();

        public string Refuel()
        {
            string refuel = "refuel complete!";
            Console.WriteLine("Refuelling! Please wait....\n...\n" + refuel);
            return refuel;
        }
    }

    class Boat : Travelmode
    {
        public override string ModeOfTravel()
        {
            string medium = "Water";
            Console.WriteLine("Travelling by Water");
            return medium;
        }
    }
}

```

```

    }

    class Car : Travelmode
    {
        public override string ModeOfTravel()
        {
            string medium = "Land";
            Console.WriteLine("Travelling by Land");
            return medium;
        }
    }

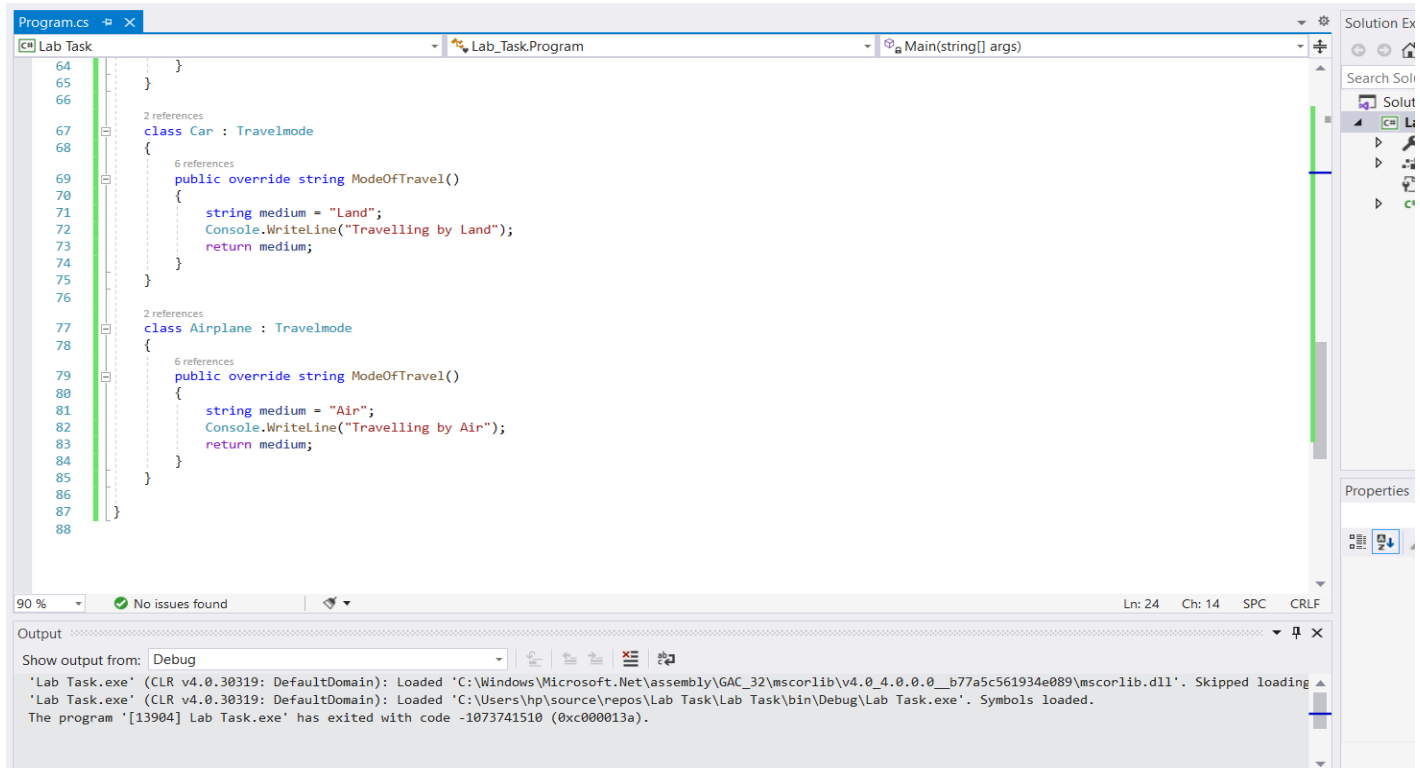
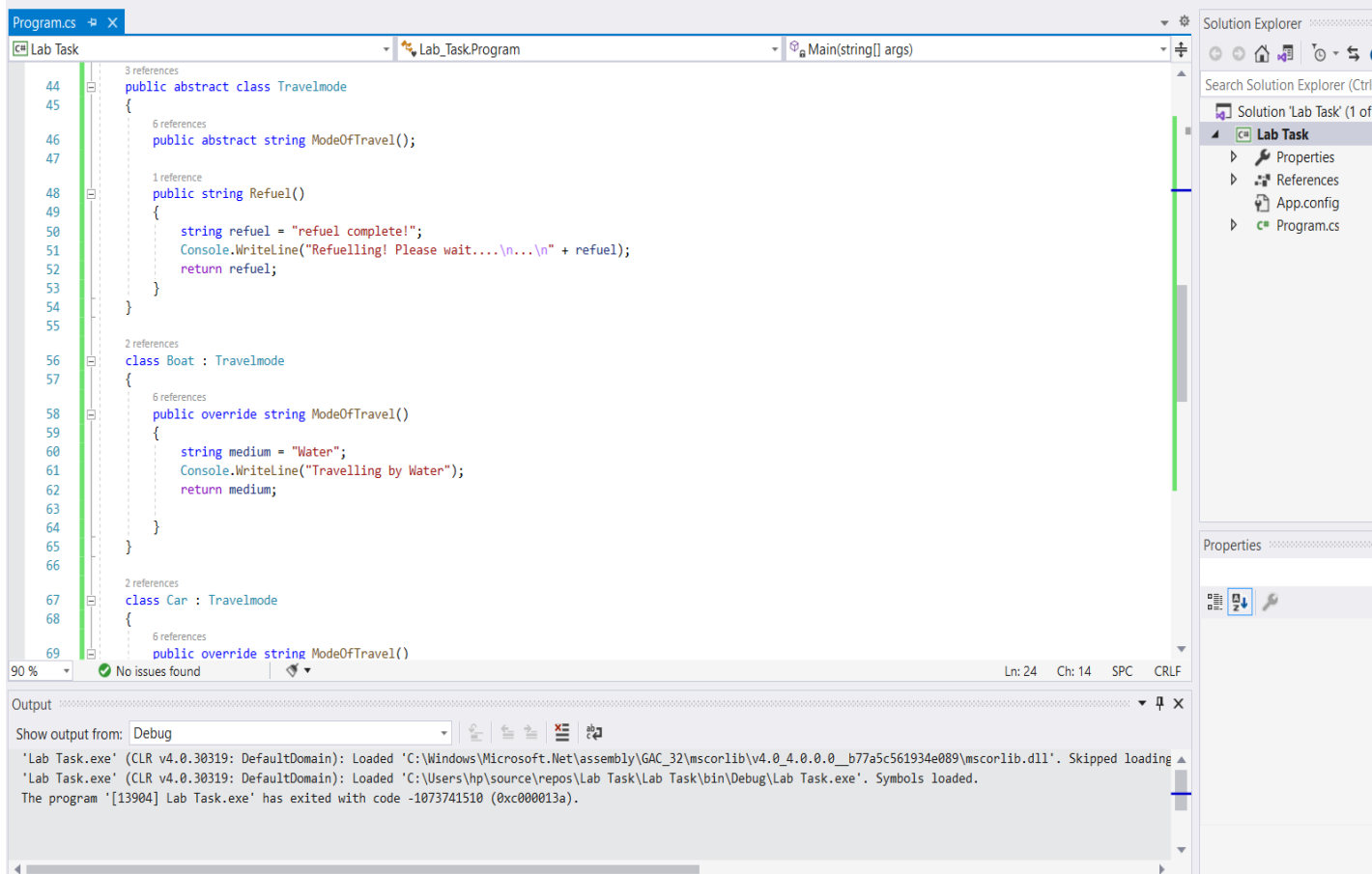
    class Airplane : Travelmode
    {
        public override string ModeOfTravel()
        {
            string medium = "Air";
            Console.WriteLine("Travelling by Air");
            return medium;
        }
    }
}

```

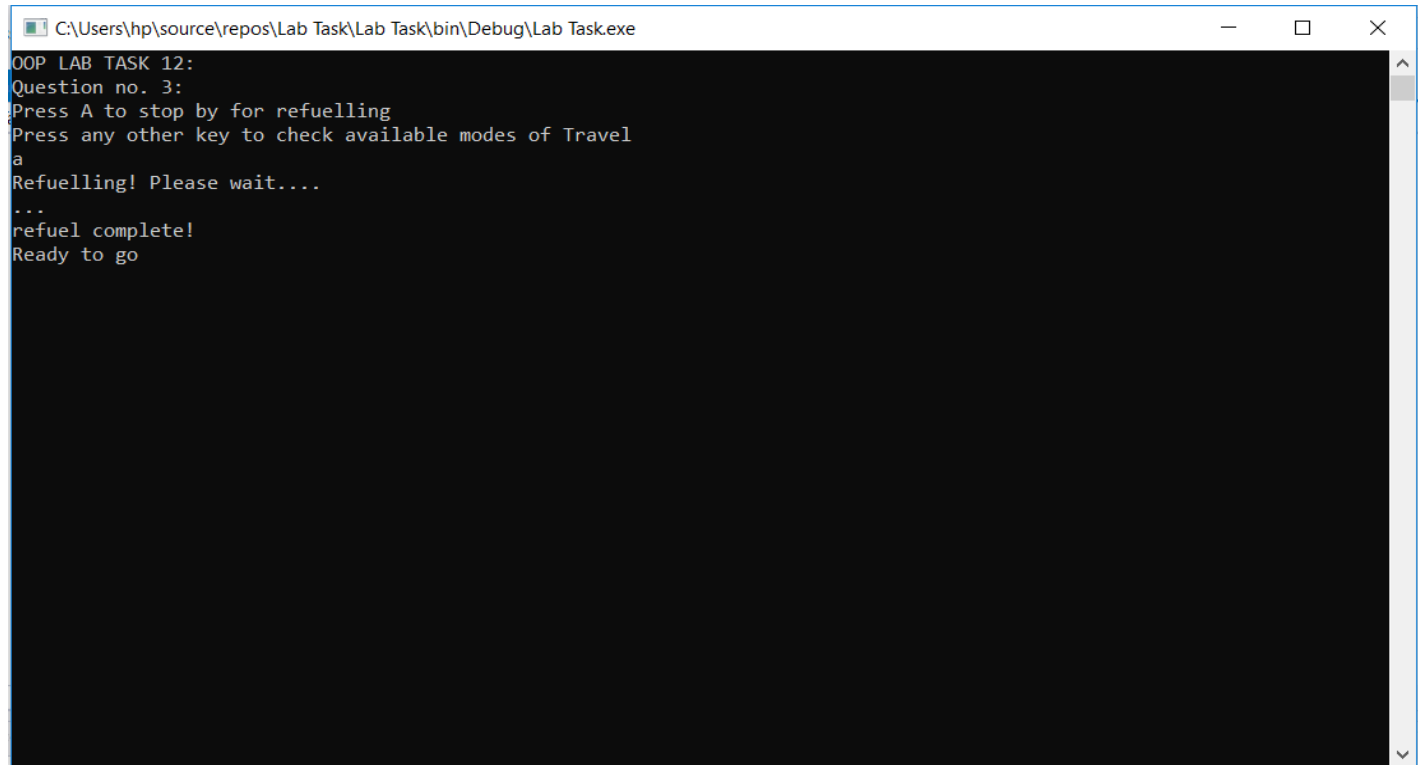
```

Program.cs  x
Lab Task  Lab_TaskProgram  Main(string[] args)
13  Console.WriteLine("OOP LAB TASK 12: ");
14  Console.WriteLine("Question no. 3:");
15  Console.WriteLine("Press A to stop by for refuelling"
16  + "\nPress any other key to check available modes of Travel");
17  string a = Console.ReadLine();
18
19  Boat b = new Boat();
20  if (a == "a" || a == "A")
21  {
22      b.Refuel();
23      Console.WriteLine("Ready to go");
24  }
25
26  else
27  {
28      Airplane ap = new Airplane();
29      ap.ModeOfTravel();
30
31      Car c = new Car();
32      c.ModeOfTravel();
33
34      //Boat b = new Boat();
35      b.ModeOfTravel();
36
37  }
38
39  //b.Refuel();
40  Console.ReadKey();
41  }
42
43
90 %  No issues found  Ln: 24  Ch: 14  SPC  CRLF

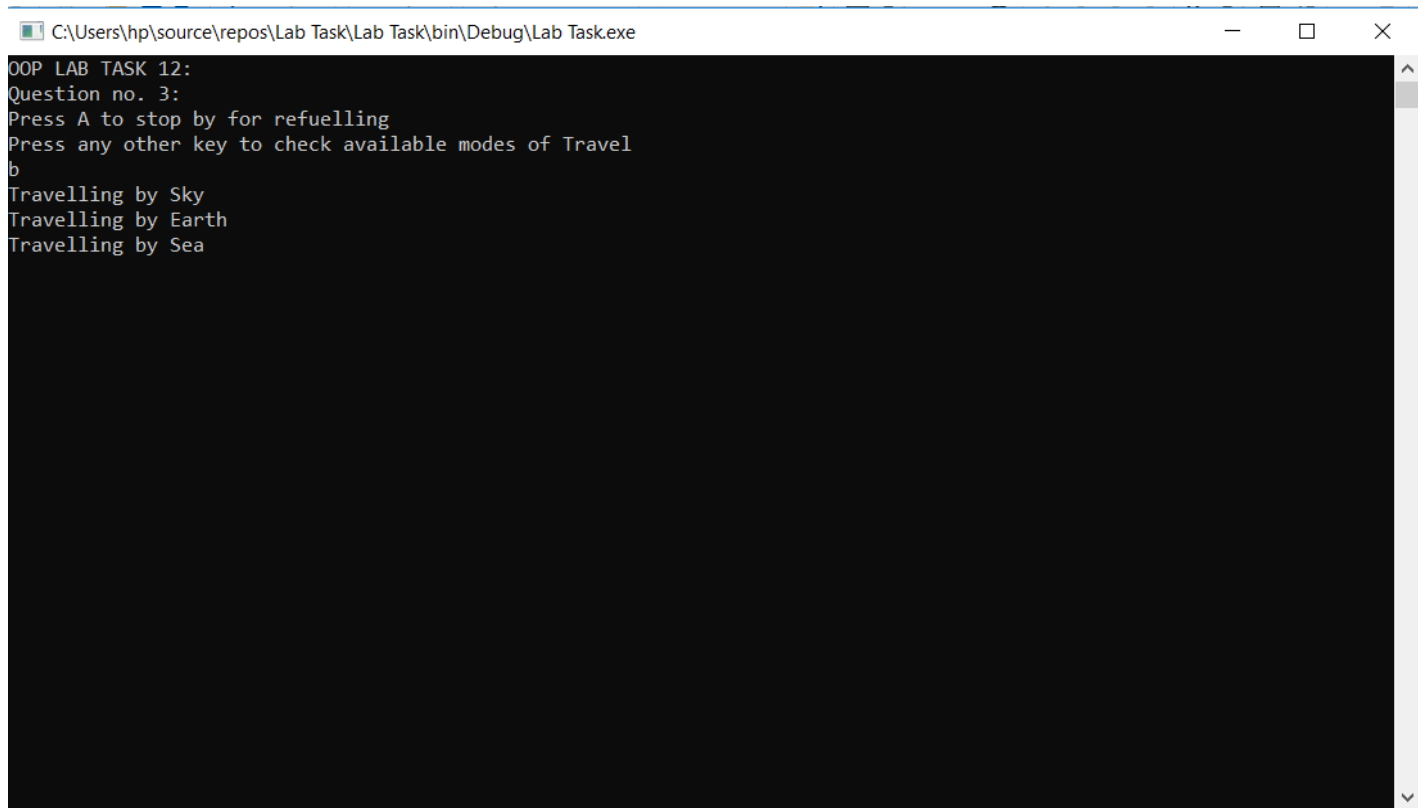
```



Output:



```
C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe
OOP LAB TASK 12:
Question no. 3:
Press A to stop by for refuelling
Press any other key to check available modes of Travel
a
Refuelling! Please wait....
...
refuel complete!
Ready to go
```



```
C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe
OOP LAB TASK 12:
Question no. 3:
Press A to stop by for refuelling
Press any other key to check available modes of Travel
b
Travelling by Sky
Travelling by Earth
Travelling by Sea
```

Question no. 4:

Inputted Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Lab_Task
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("OOP LAB TASK 12:");
            Console.WriteLine("Question no. 4:");
            //Console.WriteLine("Press A to stop by for refuelling"
            //    +"\nPress any other key to check available modes of Travel");
            //string a = Console.ReadLine();

            Professor proof = new Professor("Mr Anakin Skywalker", "Luke CageWalker",
12500000.25);
            proof.firstName();
            proof.lastName();
            proof.salary();

            Console.ReadKey();
        }
    }

    interface Person
    {
        string firstName();
        string lastName();
    }

    class Professor : Person
    {
        string _firstname;
        string _lastname;
        double Salary;

        public Professor(string _fname, string _lname, double _salary)
        {
            _firstname = _fname;
            _lastname = _lname;
            Salary = _salary;
        }

        public string firstName()
        {
            Console.WriteLine("Professor First Name = " + _firstname);
            return _firstname;
        }
    }
}
```

```

        public string lastName()
        {
            Console.WriteLine("Professor Last Name = " + _lastname);
            return _lastname;
        }

        public double salary()
        {
            Console.WriteLine("The Professor's Salary = " + Salary);
            return Salary;
        }
    }

    class Student : Person
    {
        string _firstname;
        string _lastname;
        string Major;

        public Student(string _fname, string _lname, string _major)
        {
            _firstname = _fname;
            _lastname = _lname;
            Major = _major;
        }

        public string firstName()
        {
            Console.WriteLine("Student First Name = " + _firstname);
            return _firstname;
        }

        public string lastName()
        {
            Console.WriteLine("Student Last Name = " + _lastname);
            return _lastname;
        }

        public string major()
        {
            Console.WriteLine("The Student's Major = " + Major);
            return Major;
        }
    }
}

```

Program.cs

Lab Task

Lab_Task.Student

firstName()

```
12 {
13     Console.WriteLine("OOP LAB TASK 12:");
14     Console.WriteLine("Question no. 4:");
15     //Console.WriteLine("Press A to stop by for refuelling"
16     //    + "\nPress any other key to check available modes of Travel");
17     //string a = Console.ReadLine();
18
19     Professor proof = new Professor("Mr Anakin Skywalker", "Luke Cagewalker", 12500000.25);
20     proof.firstName();
21     proof.lastName();
22     proof.salary();
23
24     Console.ReadKey();
25 }
26
27
28
29 2 references
30 interface Person
31 {
32     3 references
33     string firstName();
34     3 references
35     string lastName();
36 }
37
38 3 references
39 class Professor : Person
40 {
41     string _firstname;
42     string _lastname;
43     double Salary;
44 }
```

90 %

No issues found

Ln: 86 Ch: 10 SPC CRLF

Output

Show output from: Debug

'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0.4.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading

'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe'. Symbols loaded.

The program '[12932] Lab Task.exe' has exited with code -1 (0xffffffff).

Program.cs

Lab Task

Lab_Task.Student

firstName()

```
35 3 references
36 class Professor : Person
37 {
38     string _firstname;
39     string _lastname;
40     double Salary;
41
42     1 reference
43     public Professor(string _fname, string _lname, double _salary)
44     {
45         _firstname = _fname;
46         _lastname = _lname;
47         Salary = _salary;
48     }
49
50     3 references
51     public string firstName()
52     {
53         Console.WriteLine("Professor First Name = " + _firstname);
54         return _firstname;
55     }
56
57     3 references
58     public string lastName()
59     {
60         Console.WriteLine("Professor Last Name = " + _lastname);
61         return _lastname;
62     }
63
64     1 reference
65     public double salary()
66     {
67         Console.WriteLine("The Professor's Salary = " + Salary);
68     }
69 }
```

90 %

No issues found

Ln: 86 Ch: 10 SPC CRLF

Output

Show output from: Debug

'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Windows\Microsoft.Net\assembly\GAC_32\mscorlib\v4.0.4.0.0__b77a5c561934e089\mscorlib.dll'. Skipped loading

'Lab Task.exe' (CLR v4.0.30319: DefaultDomain): Loaded 'C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe'. Symbols loaded.

The program '[12932] Lab Task.exe' has exited with code -1 (0xffffffff).

Item(s) Saved

Program.cs

Lab Task

Lab_TaskStudent

firstName()

```
60 1 reference
61 public double salary()
62 {
63     Console.WriteLine("The Professor's Salary = " + Salary);
64     return Salary;
65 }
66
67 }
68
69 1 reference
70 class Student : Person
71 {
72     string _firstname;
73     string _lastname;
74     string Major;
75
76 0 references
77 public Student(string _fname, string _lname, string _major)
78 {
79     _firstname = _fname;
80     _lastname = _lname;
81     Major = _major;
82 }
83
84 3 references
85 public string firstName()
86 {
87     Console.WriteLine("Student First Name = " + _firstname);
88     return _firstname;
89 }
```

90 % No issues found Ln: 86 Ch: 10 SPC CRLF

Output

Show output from: Debug

Program.cs


Lab Task

Lab_TaskStudent

firstName()

```
81
82 3 references
83 public string firstName()
84 {
85     Console.WriteLine("Student First Name = " + _firstname);
86     return _firstname;
87 }
88
89 3 references
90 public string lastName()
91 {
92     Console.WriteLine("Student Last Name = " + _lastname);
93     return _lastname;
94 }
95
96 0 references
97 public string major()
98 {
99     Console.WriteLine("The Student's Major = " + Major);
100     return Major;
101 }
```


Output:

 C:\Users\hp\source\repos\Lab Task\Lab Task\bin\Debug\Lab Task.exe

```
OOP LAB TASK 12:  
Question no. 4:  
Professor First Name = Mr Anakin Skywalker  
Professor Last Name = Luke CageWalker  
The Professor's Salary = 12500000.25
```
