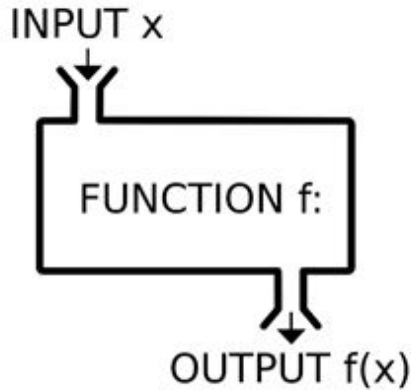


# Functions in C#



# Working Example: Vision

Write a Function named **addition** that takes two parameters as input and then returns their sum.



# Solution with Functions

```
static int add(int n1, int n2)
{
    return n1 + n2;
}
```

```
static void Main(string[] args)
{
    int num1;
    int num2;
    Console.Write("Enter 1st Number: ");
    num1 = int.Parse(Console.ReadLine());
    Console.Write("Enter 2nd Number: ");
    num2 = int.Parse(Console.ReadLine());
    int result = add(num1, num2);
    Console.WriteLine("Sum is {0}", result);
    Console.Read();
}
```

# Solution with Functions



```
static int add(int n1, int n2)
{
    return n1 + n2;
}
```

Everything is same except we have to write **static** at the start of function definition

```
static void Main(string[] args)
{
    int num1;
    int num2;
    Console.Write("Enter 1st Number: ");
    num1 = int.Parse(Console.ReadLine());
    Console.Write("Enter 2nd Number: ");
    num2 = int.Parse(Console.ReadLine());
    int result = add(num1, num2);
    Console.WriteLine("Sum is {0}", result);
    Console.Read();
}
```

# Solution with Functions



```
static int add(int n1, int n2)
{
    return n1 + n2;
}
```

We can write this function even after the main without explicitly giving the function prototype.

```
static void Main(string[] args)
{
    int num1;
    int num2;
    Console.Write("Enter 1st Number: ");
    num1 = int.Parse(Console.ReadLine());
    Console.Write("Enter 2nd Number: ");
    num2 = int.Parse(Console.ReadLine());
    int result = add(num1, num2);
    Console.WriteLine("Sum is {0}", result);
    Console.Read();
}
```



# File Handling in C#



# File Handling: C#

In C++, we included  
`#include <fstream>`

In C#, we will include  
using System.IO;

For reading and writing data in File.



# Working Example: Vision

Write a program that reads the data line by line from the file if the file exists.





# Solution

```
static void Main(string[] args)
{
    string path = "G:\\OOP 2022\\BootingCSharp\\textfile.txt";
    if (File.Exists(path))
    {
        StreamReader fileVariable = new StreamReader(path);
        string record;
        while ((record = fileVariable.ReadLine()) != null)
        {
            Console.WriteLine(record);
        }
        fileVariable.Close();
    }
    else
    {
        Console.WriteLine("Not Exists");
    }
}
```

# Solution

```
static void Main(string[] args)
{
    string path = "G:\\OOP 2022\\BootingCSharp\\textfile.txt";
    if (File.Exists(path))
    {
        StreamReader fileVariable = new StreamReader(path);
        string record;
        while ((record = fileVariable.ReadLine()) != null)
        {
            Console.WriteLine(record);
        }
        fileVariable.Close();
    }
    else
    {
        Console.WriteLine("Not Exists");
    }
}
```



This returns  
**true** if the file  
exists otherwise  
**false**

# Solution

```
static void Main(string[] args)
{
    string path = "G:\\OOP 2022\\BootingCSharp\\textfile.txt";
    if (File.Exists(path))
    {
        StreamReader fileVariable = new StreamReader(path);
        string record;
        while ((record = fileVariable.ReadLine()) != null)
        {
            Console.WriteLine(record);
        }
        fileVariable.Close();
    }
    else
    {
        Console.WriteLine("Not Exists");
    }
}
```



This Creates  
the  
**StreamReader**  
variable to read  
the data from  
the file

# Solution

```
static void Main(string[] args)
{
    string path = "G:\\OOP 2022\\BootingCSharp\\textfile.txt";
    if (File.Exists(path))
    {
        StreamReader fileVariable = new StreamReader(path);
        string record;
        while ((record = fileVariable.ReadLine()) != null)
        {
            Console.WriteLine(record);
        }
        fileVariable.Close();
    }
    else
    {
        Console.WriteLine("Not Exists");
    }
}
```



This Keeps on reading the data into record variable until there is no more data in the file

# Working Example: Vision

Write a program that Appends the data into the file.




# Solution

```
static void Main(string[] args)
{
    string path = "G:\\\\OOP 2022\\\\BootingCSharp\\\\textfile.txt";
    StreamWriter filevariable = new StreamWriter(path, true);
    filevariable.WriteLine("hello");
    filevariable.Flush();
    filevariable.Close();
}
```

# Solution

```
static void Main(string[] args)
{
    string path = "G:\\\\OOP 2022\\\\BootingCSharp\\\\textfile.txt";
    StreamWriter filevariable = new StreamWriter(path, true);
    filevariable.WriteLine("hello");
    filevariable.Flush();
    filevariable.Close();
}
```



This Creates  
the  
**StreamWriter**  
variable to write  
the data into  
the file

# Solution

```
static void Main(string[] args)
{
    string path = "G:\\\\OOP 2022\\\\BootingCSharp\\\\textfile.txt";
    StreamWriter filevariable = new StreamWriter(path, true);
    filevariable.WriteLine("hello");
    filevariable.Flush();
    filevariable.Close();
}
```



This parameters shows  
that the data will be  
**appended** into the file



# Solution

```
static void Main(string[] args)
{
    string path = "G:\\\\OOP 2022\\\\BootingCSharp\\\\textfile.txt";
    StreamWriter filevariable = new StreamWriter(path, true);
    filevariable.WriteLine("hello");
    filevariable.Flush();
    filevariable.Close();
}
```



**Clears all buffers.**

# Working Example: Vision

Make a **SignIn** and **SignUp** Application that will check if the user is stored in the file then it will allow it to LogIn. If the user SignUp then the record is stored in the file in comma separated format.



# Step 1: Make the Menu

```
static int menu()  
{  
    int option;  
    Console.WriteLine("1. SignIn");  
    Console.WriteLine("2. SignUp");  
    Console.WriteLine("Enter Option");  
    option = int.Parse(Console.ReadLine());  
    return option;  
}
```

# Step 2: Read the data from the file

```
static void readData(string path, string[] names, string [] password)
{
    int x = 0;
    if (File.Exists(path))
    {
        StreamReader fileVariable = new StreamReader(path);
        string record;
        while ((record = fileVariable.ReadLine()) != null)
        {
            names[x] = parseData(record, 1);
            password[x] = parseData(record, 2);
            x++;
            if (x >= 5)
            {
                break;
            }
        }
        fileVariable.Close();
    }
    else
    {
        Console.WriteLine("Not Exists");
    }
}
```

```
static string parseData(string record, int field)
{
    int comma = 1;
    string item = "";
    for(int x = 0; x < record.Length; x++)
    {
        if (record[x] == ',')
        {
            comma++;
        }
        else if (comma == field)
        {
            item = item + record[x];
        }
    }
    return item;
}
```

# Step 3: Make the SignIn Function

```
static void signIn(string n, string p, string[] names, string [] password)
{
    bool flag = false;
    for (int x = 0; x < 5; x++)
    {
        if (n == names[x] && p == password[x])
        {
            Console.WriteLine("Valid User");
            flag = true;
        }
    }
    if (flag == false)
    {
        Console.WriteLine("Invalid User");
    }
    Console.ReadKey();
}
```

## Step 4: Make the SignUp Function

```
static void signUp(string path, string n, string p)
{
    StreamWriter file = new StreamWriter(path, true);
    file.WriteLine(n + "," + p);
    file.Flush();
    file.Close();
}
```

# Step 5: main

```
static void Main(string[] args)
{
    string path = "G:\\OOP 2022\\BootingCSharp\\textfile.txt";
    string[] names = new string[5];
    string[] password = new string[5];
    int option;
    do
    {
        readData(path, names, password);
        Console.Clear();
        option = menu();
        Console.Clear();
        if (option == 1)
        {
            Console.WriteLine("Enter Name: ");
            string n = Console.ReadLine();
            Console.WriteLine("Enter Password: ");
            string p = Console.ReadLine();
            signIn(n, p, names, password);
        }
        else if (option == 2)
        {
            Console.WriteLine("Enter New Name: ");
            string n = Console.ReadLine();
            Console.WriteLine("Enter New Password: ");
            string p = Console.ReadLine();
            signUp(path, n, p);
        }
    }
    while (option < 3);
    Console.Read();
}
```

# Learning Objective

Write **C#** programs that stores data permanently in files.





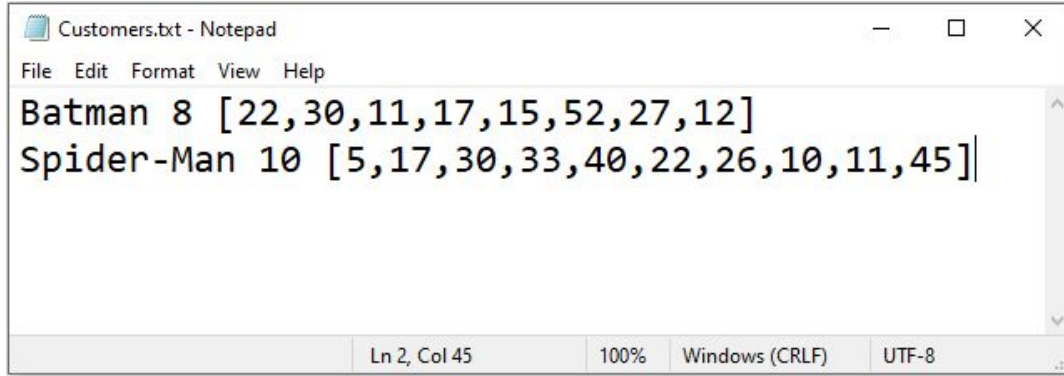
# Self Assessment

1. **KamyabLife** is launching a network of autonomous pizza delivery drones and wants you to create a flexible rewards system (**Pizza Points**) that can be tweaked in the future. The rules are simple:  
if a customer has made at least **N orders** of at least **Y price**, they get a **FREE** pizza!

The information of the customers is stored in a file **Customers.txt** in the following format. First the name of the customer is given then after the space the number of orders are given then after the space within the brackets all the orders prices are given.



# Self Assessment



```
Customers.txt - Notepad
File Edit Format View Help
Batman 8 [22,30,11,17,15,52,27,12]
Spider-Man 10 [5,17,30,33,40,22,26,10,11,45]
Ln 2, Col 45 100% Windows (CRLF) UTF-8
```

Your task is to create a function that takes a minimum number of orders and a minimum order price then display the names of the customers that are eligible for a free pizza.



# Self Assessment

## Test Cases

Input	Output
<code>pizza_points(5, 20)</code>	"Spider-Man"
<code>pizza_points(3, 10)</code>	"Batman" "Spider-Man"
<code>pizza_points(5, 100)</code>	""

