

PROGRAMMING

Does the same thing but with different syntax.

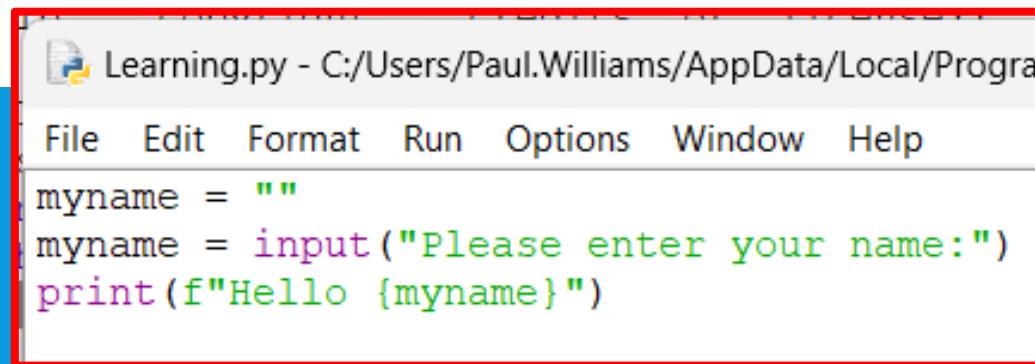
Python, Visual Basic, C#

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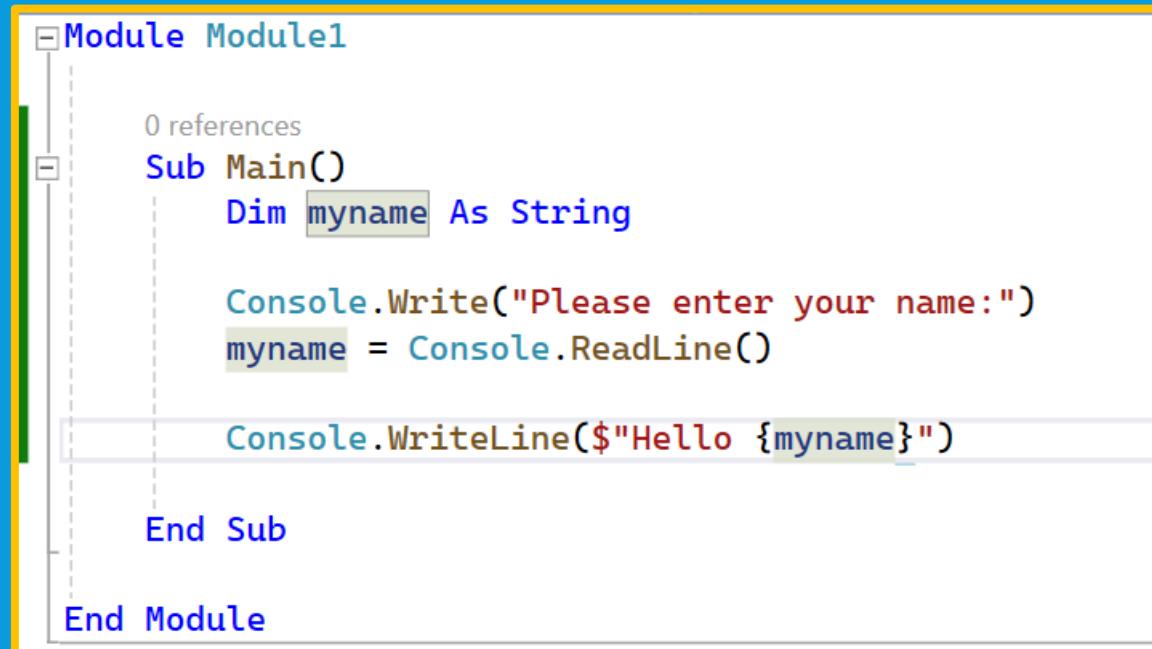


- | | |
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| 2. Input/Output Integer | 17. Further task for 1D array |
| 3. Add two numbers together – Basic | 18. Another task for 1D array |
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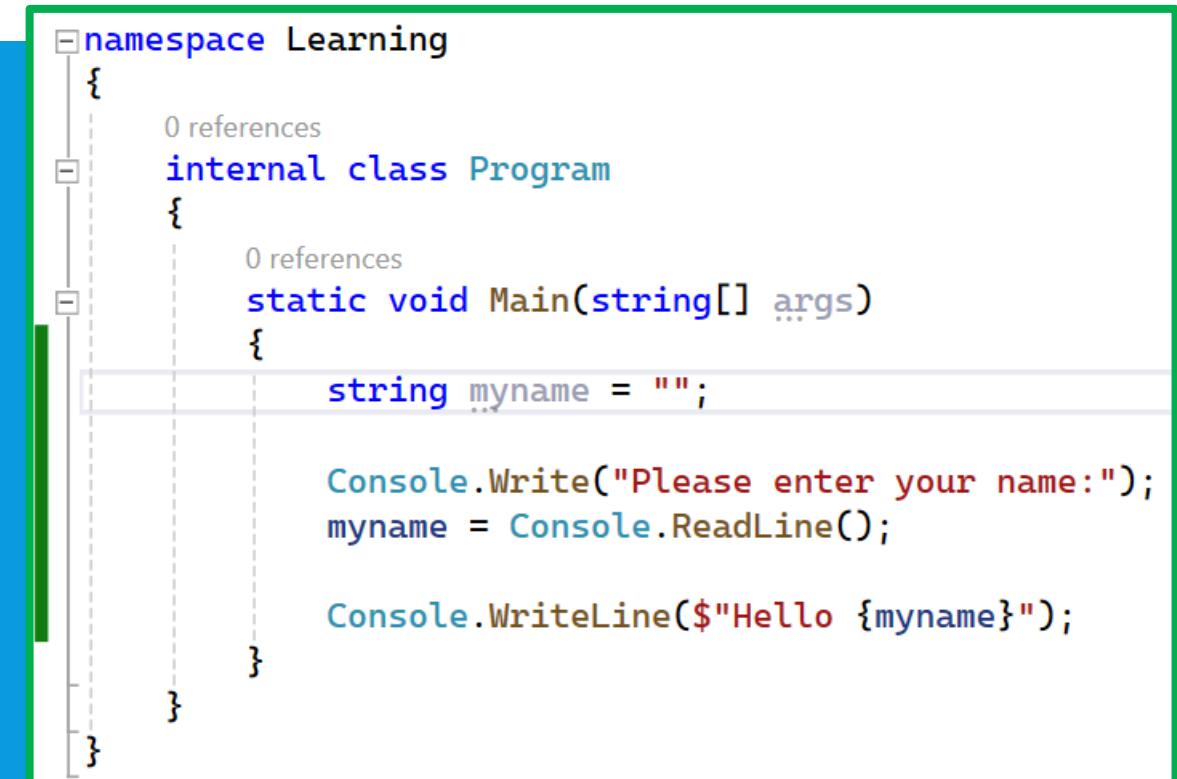
INPUT/OUTPUT - STRING

[Contents](#)

```
Learning.py - C:/Users/Paul.Williams/AppData/Local/Programs/Python/Python37-32/Learning.py
File Edit Format Run Options Window Help
myname = ""
myname = input("Please enter your name:")
print(f"Hello {myname}")
```

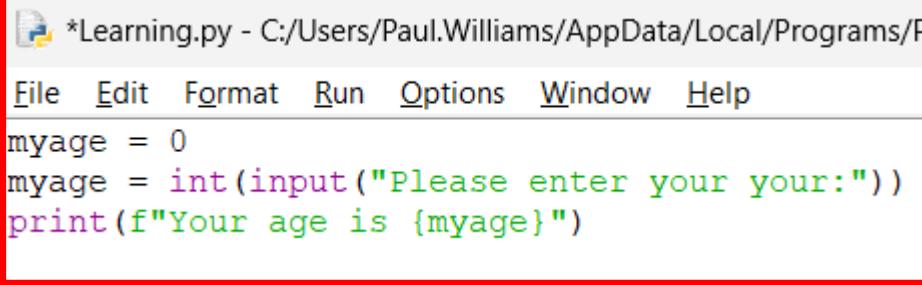


```
Module Module1
    Sub Main()
        Dim myname As String
        Console.Write("Please enter your name:")
        myname = Console.ReadLine()
        Console.WriteLine($"Hello {myname}")
    End Sub
End Module
```

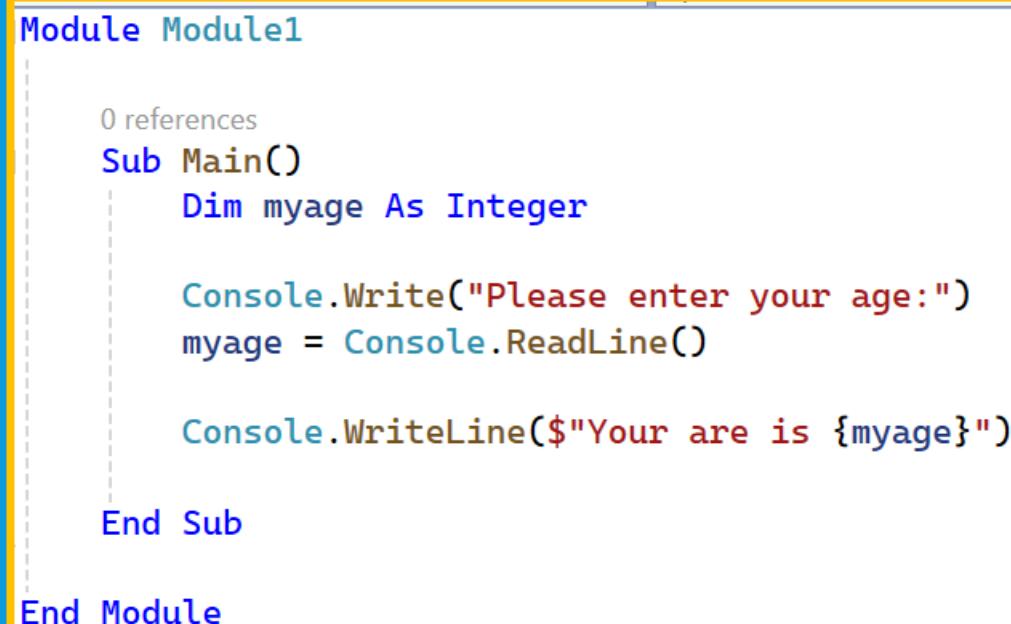


```
namespace Learning
{
    internal class Program
    {
        static void Main(string[] args)
        {
            string myname = "";
            Console.WriteLine("Please enter your name:");
            myname = Console.ReadLine();
            Console.WriteLine($"Hello {myname}");
        }
    }
}
```

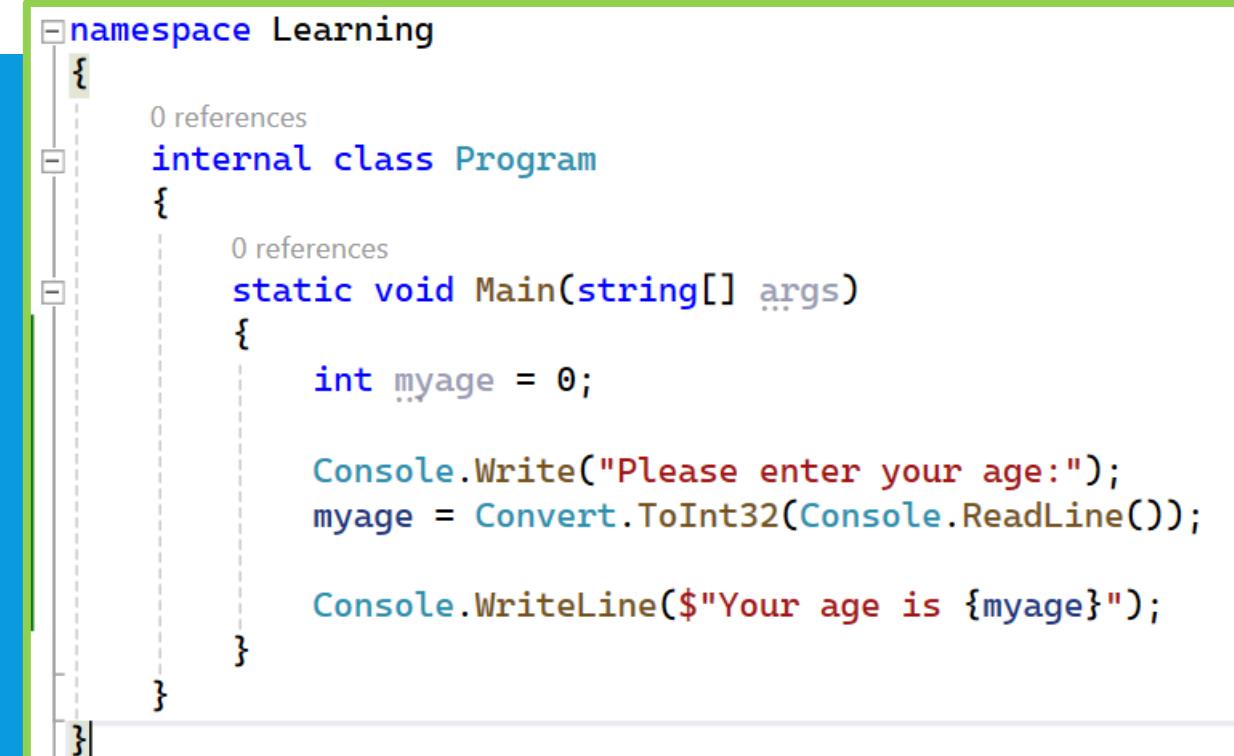
INPUT/OUTPUT - INTEGER

[Contents](#)

```
*Learning.py - C:/Users/Paul.Williams/AppData/Local/Programs/P
File Edit Format Run Options Window Help
myage = 0
myage = int(input("Please enter your age:"))
print(f"Your age is {myage}")
```



```
Module Module1
    Sub Main()
        Dim myage As Integer
        Console.WriteLine("Please enter your age:")
        myage = Console.ReadLine()
        Console.WriteLine($"Your age is {myage}")
    End Sub
End Module
```



```
namespace Learning
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int myage = 0;
            Console.WriteLine("Please enter your age:");
            myage = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine($"Your age is {myage}");
        }
    }
}
```

ADD TWO NUMBERS TOGETHER - BASIC

[Contents](#)

```
num1 = 0
num2 = 0
total = 0

num1 = int(input("Please enter a number:"))
num2 = int(input("Please enter another number:"))
total = num1 + num2

print(f"{num1} + {num2} = {total}")
```

```
Sub Main()
    Dim num1 As Integer
    Dim num2 As Integer
    Dim total As Integer

    Console.Write("Please enter a number:")
    num1 = Console.ReadLine()

    Console.Write("Please enter another number:")
    num2 = Console.ReadLine()

    total = num1 + num2

    Console.WriteLine($"{num1} + {num2} = {total}")

End Sub
```

internal class Program

{

0 references

```
static void Main(string[] args)
{
```

```
    int num1 = 0;
    int num2 = 0;
    int total = 0;
```

```
    Console.Write("Please enter a number:");
    num1 = Convert.ToInt32(Console.ReadLine());
```

```
    Console.Write("Please enter another number:");
    num2 = Convert.ToInt32(Console.ReadLine());
```

```
    total = num1 + num2;
```

```
    Console.WriteLine($"{num1} + {num2} = {total}");
}
```

SELECTION - BASIC

[Contents](#)

```
name = ""  
  
name = input("Please enter your name:")  
  
if name == "John":  
    print ("Hello John, welcome home.")
```

```
Sub Main()  
    Dim name As String  
  
    Console.Write("Please enter your name:")  
    name = Console.ReadLine()  
  
    If name = "John" Then  
        Console.WriteLine("Hello John, welcome home.")  
    End If  
  
End Sub
```

```
internal class Program  
{  
    0 references  
    static void Main(string[] args)  
    {  
        string name = "";  
  
        Console.Write("Please enter your name:");  
        name = Console.ReadLine();  
  
        if (name == "John")  
        {  
            Console.WriteLine("Hello John, welcome home.");  
        }  
    }  
}
```

SELECTION – IF/ELSE

[Contents](#)

```
name = ""  
  
name = input("Please enter your name:")  
  
if name == "John":  
    print ("Hello John, welcome home.")  
else:  
    print ("Sorry, but your name is not John")
```

```
Module Module1  
  
0 references  
Sub Main()  
    Dim name As String  
  
    Console.Write("Please enter your name:")  
    name = Console.ReadLine()  
  
    If name = "John" Then  
        Console.WriteLine("Hello John, welcome home.")  
    Else  
        Console.WriteLine("Sorry, but your name is not John")  
    End If  
  
End Sub  
  
End Module
```

```
internal class Program  
{  
    0 references  
    static void Main(string[] args)  
    {  
        string name = "";  
  
        Console.Write("Please enter your name:");  
        name = Console.ReadLine();  
  
        if (name == "John")  
        {  
            Console.WriteLine("Hello John, welcome home.");  
        }  
        else  
        {  
            Console.WriteLine("Sorry, but your name is not John");  
        }  
    }  
}
```

SELECTION – COMPLEX

[Contents](#)

```
name = ""  
surname = ""  
  
name = input("Please enter your name:")  
surname = input("Please enter your surname:")  
  
if name == "John" and surname == "Smith":  
    print ("Hello John Smith, welcome home.")  
else:  
    print ("Sorry, but your name is not John Smith")
```

```
Sub Main()  
    Dim name As String  
    Dim surname As String  
  
    Console.WriteLine("Please enter your name:")  
    name = Console.ReadLine()  
    Console.WriteLine("Please enter your surname:")  
    surname = Console.ReadLine()  
  
    If name = "John" And surname = "Smith" Then  
        Console.WriteLine("Hello John Smith, welcome home.")  
    Else  
        Console.WriteLine("Sorry, but your name is not John Smith")  
    End If  
  
End Sub
```

```
static void Main(string[] args)  
{  
    string name = "";  
    string surname = "";  
  
    Console.WriteLine("Please enter your name:");  
    name = Console.ReadLine();  
    Console.WriteLine("Please enter your surname:");  
    surname = Console.ReadLine();  
  
    if (name == "John" && surname == "Smith")  
    {  
        Console.WriteLine("Hello John Smith, welcome home.");  
    }  
    else  
    {  
        Console.WriteLine("Sorry, but your name is not John Smith");  
    }  
}
```

ITERATION – COUNT FROM ONE TO TEN

```
for loop in range(1, 11):  
    print (loop)
```

```
Sub Main()  
    For iloop = 1 To 10  
        Console.WriteLine(iloop)  
    Next  
  
End Sub
```

```
internal class Program  
{  
    0 references  
    static void Main(string[] args)  
    {  
        for (int iloop = 1; iloop <= 10; iloop++)  
        {  
            Console.WriteLine(iloop);  
        }  
    }  
}
```

ITERATION – COUNT FROM ONE TO TEN IN TWO'S

```
for loop in range(1,11,2):  
    print (loop)
```

Module Module1

0 references

```
Sub Main()  
    For iloop = 1 To 10 Step 2  
        Console.WriteLine(iloop)  
    Next  
  
End Sub
```

End Module

```
internal class Program  
{  
    0 references  
    static void Main(string[] args)  
    {  
        for (int iloop = 1; iloop <= 10; iloop+=2)  
        {  
            Console.WriteLine(iloop);  
        }  
    }  
}
```

ITERATION – COUNT FROM TEN TO ZERO

```
for loop in range(10,-1,-1):  
    print (loop)
```

Module Module1

0 references

```
Sub Main()  
    For iloop = 10 To 0 Step -1  
        Console.WriteLine(iloop)  
    Next  
End Sub
```

End Module

```
internal class Program  
{  
    0 references  
    static void Main(string[] args)  
    {  
        for (int iloop = 10; iloop >=0; iloop--)  
        {  
            Console.WriteLine(iloop);  
        }  
    }  
}
```

ARRAY – FIXED LENGTH AND DATA

```
ShoppingList = ["Ham", "Cheese", "Bacon", "Bread", "Butter"]

for element in ShoppingList:
    print (element)
```

```
Sub Main()
    Dim ShoppingList = New String() {"Ham", "Cheese", "Bacon", "Bread", "Butter"}

    For Each element As String In ShoppingList
        Console.WriteLine(element)
    Next
End Sub
```

```
static void Main(string[] args)
{
    string[] ShoppingList = { "Ham", "Cheese", "Bacon", "Bread", "Butter" };

    foreach (string element in ShoppingList)
    {
        Console.WriteLine(element);
    }
}
```

ARRAY – FIXED LENGTH AND ADD TO LATER

```
ShoppingList = []  
  
ShoppingList.append("Ham")  
ShoppingList.append("Cheese")  
ShoppingList.append("Bacon")  
ShoppingList.append("Bread")  
ShoppingList.append("Butter")  
  
for element in ShoppingList:  
    print (element)
```

```
static void Main(string[] args)  
{  
    string[] ShoppingList = new string[5];  
  
    ShoppingList[0] = "Ham";  
    ShoppingList[1] = "Cheese";  
    ShoppingList[2] = "Bacon";  
    ShoppingList[3] = "Bread";  
    ShoppingList[4] = "Butter";  
  
    foreach (string element in ShoppingList)  
    {  
        Console.WriteLine(element);  
    }  
}
```

```
Sub Main()  
    Dim ShoppingList(4) As String  
  
    ShoppingList(0) = "Ham"  
    ShoppingList(1) = "Cheese"  
    ShoppingList(2) = "Bacon"  
    ShoppingList(3) = "Bread"  
    ShoppingList(4) = "Butter"  
  
    For Each element As String In ShoppingList  
        Console.WriteLine(element)  
    Next  
End Sub
```

Declaration:
Python – none
VB – 4 = 0 to 4 (5 elements)
C# - 5 = 0 to 4 (5 elements)

ARRAY LIST – UNDEFINED LENGTH AND ADD TO LATER

```
ShoppingList = []

Food = ""

while Food.upper() != "QUIT":
    Food = input("Please enter the item to add to the shopping list:")

    if Food.upper() != "QUIT":
        ShoppingList.append(Food)

for item in ShoppingList:
    print (item)
```

```
Sub Main()
    Dim ShoppingList As New List(Of String)()
    Dim Food As String = ""

    While Food.ToUpper() <> "QUIT"
        Console.Write("Please enter the item to add to the shopping list:")
        Food = Console.ReadLine()

        If Food.ToUpper() <> "QUIT" Then
            ShoppingList.Add(Food)
        End If
    End While

    For Each element As String In ShoppingList
        Console.WriteLine(element)
    Next

    Console.ReadKey()
End Sub
```

```
static void Main(string[] args)
{
    List<string> ShoppingList = new List<string>();
    String Food = "";

    while (Food.ToUpper() != "QUIT")
    {
        Console.Write("Please enter the item to add to the shopping list:");
        Food = Console.ReadLine();

        if (Food.ToUpper() != "QUIT")
        {
            ShoppingList.Add(Food);
        }
    }

    foreach (string item in ShoppingList)
    {
        Console.WriteLine(item);
    }

    Console.ReadKey();
}
```

Why a List and not an Array?

ARRAY – DOES AN ITEM EXIST?

[Contents](#)

```
ShoppingList = []

ShoppingList.append("Ham")
ShoppingList.append("Cheese")
ShoppingList.append("Bacon")
ShoppingList.append("Bread")
ShoppingList.append("Butter")

whichfood = input("Please enter the food to find:")

if whichfood in ShoppingList:
    index = ShoppingList.index(whichfood)
    print(f"Index Position {index}")
else:
    print ("Item not in the Shopping List")
```

```
ShoppingList = []
index = -1

ShoppingList.append("Ham")
ShoppingList.append("Cheese")
ShoppingList.append("Bacon")
ShoppingList.append("Bread")
ShoppingList.append("Butter")

whichfood = input("Please enter the food to find:")

for position in range(0,len(ShoppingList)):
    if ShoppingList[position].upper() == whichfood.upper():
        index = position

if index != -1:
    print(f"Index Position {index}")
else:
    print ("Item not in the Shopping List")
```

```
ShoppingList = []
index = -1
position = 0

ShoppingList.append("Ham")
ShoppingList.append("Cheese")
ShoppingList.append("Bacon")
ShoppingList.append("Bread")
ShoppingList.append("Butter")

whichfood = input("Please enter the food to find:")

for element in ShoppingList:
    if element.upper() == whichfood.upper():
        index = position
        position += 1

if index != -1:
    print(f"Index Position {index}")
else:
    print ("Item not in the Shopping List")
```

```
ShoppingList = []

ShoppingList.append("Ham")
ShoppingList.append("Cheese")
ShoppingList.append("Bacon")
ShoppingList.append("Bread")
ShoppingList.append("Butter")

whichfood = input("Please enter the food to find:")

try:
    index = ShoppingList.index(whichfood)
    print(f"Index Position {index}")
except:
    print ("Item not in the Shopping List")
```

ARRAY – DOES AN ITEM EXIST?

[Contents](#)

```
Sub Main()
    Dim ShoppingList = New String() {"Ham", "Cheese", "Bacon", "Bread", "Butter"}
    Dim whichfood As String
    Dim index As Integer

    Console.WriteLine("Please enter the food to find:")
    whichfood = Console.ReadLine()

    index = ShoppingList.IndexOf(ShoppingList, whichfood)

    If index = -1 Then
        Console.WriteLine("Item not in the Shopping List")
    Else
        Console.WriteLine("Index position " & index)
    End If

    Console.ReadKey()
End Sub
```

```
Sub Main()
    Dim ShoppingList = New String() {"Ham", "Cheese", "Bacon", "Bread", "Butter"}
    Dim whichfood As String
    Dim index As Integer = -1

    Console.WriteLine("Please enter the food to find:")
    whichfood = Console.ReadLine()

    For position = 0 To ShoppingList.Length() - 1
        If ShoppingList(position).ToUpper() = whichfood.ToUpper() Then
            index = position
        End If
    Next

    If index = -1 Then
        Console.WriteLine("Item not in the Shopping List")
    Else
        Console.WriteLine("Index position " & index)
    End If

    Console.ReadKey()
End Sub
```

```
Sub Main()
    Dim ShoppingList = New String() {"Ham", "Cheese", "Bacon", "Bread", "Butter"}
    Dim whichfood As String
    Dim index As Integer = -1
    Dim position As Integer = 0

    Console.WriteLine("Please enter the food to find:")
    whichfood = Console.ReadLine()

    For Each element As String In ShoppingList
        If element.ToUpper() = whichfood.ToUpper() Then
            index = position
        End If
        position += 1
    Next

    If index = -1 Then
        Console.WriteLine("Item not in the Shopping List")
    Else
        Console.WriteLine("Index position " & index)
    End If

    Console.ReadKey()
End Sub
```

ARRAY – DOES AN ITEM EXIST?

```
static void Main(string[] args)
{
    string[] ShoppingList = { "Ham", "Cheese", "Bacon", "Bread", "Butter" };
    string whichfood;
    int index = -1;

    Console.Write("Please enter the food to find:");
    whichfood = Console.ReadLine();

    index = Array.IndexOf(ShoppingList, whichfood);

    if (index != -1)
    {
        Console.WriteLine($"The item {whichfood} is found at index {index}.");
    }
    else
    {
        Console.WriteLine($"The item {whichfood} is not found in the array.");
    }

    Console.ReadKey();
}
```

```
static void Main(string[] args)
{
    string[] ShoppingList = { "Ham", "Cheese", "Bacon", "Bread", "Butter" };
    string whichfood;
    int index = -1;

    Console.Write("Please enter the food to find:");
    whichfood = Console.ReadLine();

    for (int i = 0; i < ShoppingList.Length; i++)
    {
        if (ShoppingList[i] == whichfood)
        {
            index = i;
        }
    }

    if (index != -1) Console.WriteLine($"The item {whichfood} is found at index {index}.");
    else Console.WriteLine($"The item {whichfood} is not found in the array.");

    Console.ReadKey();
}
```

```
static void Main(string[] args)
{
    string[] ShoppingList = { "Ham", "Cheese", "Bacon", "Bread", "Butter" };
    string whichfood;
    int index = -1;
    int position = 0;

    Console.Write("Please enter the food to find:");
    whichfood = Console.ReadLine();

    foreach (string item in ShoppingList)
    {
        if (item.ToUpper() == whichfood.ToUpper())
        {
            index = position;
        }
        position++;
    }

    if (index != -1) Console.WriteLine($"The item {whichfood} is found at index {index}.");
    else Console.WriteLine($"The item {whichfood} is not found in the array.");

    Console.ReadKey();
}
```