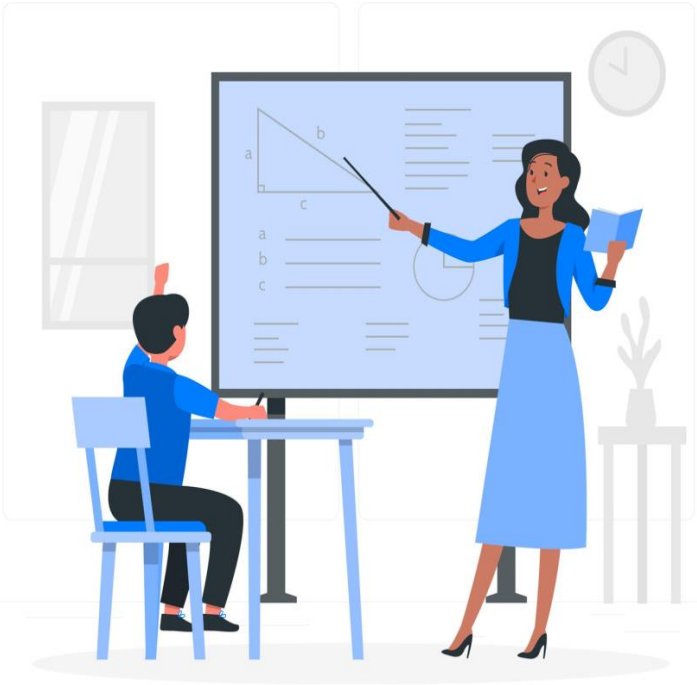
C#

Variables

- "Variables" are simply storage locations for data.
- You can place data into them and retrieve their contents as part of a C# expression.
- The interpretation of the data in a variable is controlled through "Types".
- In C#, you declare a variable in this format:
- [modifiers] datatype identifier;

```
public static string role = admin;
```



Control Flow Statements

- Control flow and program logic are of the most important parts of a programming language.

- Selection statements select one of a number of possible statements for execution based on the value of some expression.

  - The if statement
  - The if-else Statement
  - The if-else if-else Statement
  - The Nested if-else Statement
  - The switch statement

If Statement

Use the if statement to specify a block of C# code to be executed if a condition is True.

Syntax :

```
if ( boolean-expression )
{
   embedded-statement
;
}
```

```
if (role==admin)
{ Console.WriteLine("welcome
to admin");
}
```

If/else Statement

Use the else statement to specify a block of code to be executed if the condition is False.

Syntax :

```
if ( boolean-expression )
{
embedded-statement ;
}
else
{
embedded-statement ;
}
```

```
if (role==admin)
{
 Console.WriteLine("welcome to
admin");
 }
 else
 {
   Console.WriteLine("Error");
 }
```

if/else if/else Statement

Use the else if statement to specify a new condition if the first condition is False.

Syntax :

```
if(Boolean-Expression)
{
    Statement;
}
Else if( Boolean Expression)
{
    Statement;
}
Else
{
    Statement;
}
```

```
if (role==admin)
{
    Console.WriteLine("welcome to admin");
}
else if (role==jobseeker)
{
    Console.WriteLine("welcome to jobseeker”);
}
else
{
    Console.WriteLine("Error");
}
```

Switch Statement

Use the switch statement to select one of many code blocks to be executed.

```
Switch (Boolean  Expression)
{
Case 1: // Block of statement
Break;
Case 2: // Block of statement
Break;
Default: // Block of statement
Break;
}
```

```
string role = admin;
    switch (role)
    {
      case admin:
        Console.WriteLine("welcome to admin");
        break;
      case jobseeker:
        Console.WriteLine("welcome to jobseeker.");
        break;
      default:
        Console.WriteLine("Error");
        break;
    }
```

Nested If-else Statement

Nested IF functions, meaning one IF function inside of another, allows you to test multiple criteria and increases the number of possible outcomes.

Syntax :

```
if(condition1)
{
   if(condition2)
   {
   // execute code when condition1 and  condition2 are true
    }
    else
   {
    // execute code when condition1 is true and condition2 is false
    }
}
else
{
// execute code when conditions1 is false
}
```

```
if (role==jobProvider)
{
   if(CompanyId==FMS101)
   {
     Console.WriteLine("welcome to Job Provider");
   }
   else
   {
     Console.WriteLine("Error");
   }
}
```

Control Statement- Loop

Iteration statements repeatedly execute an embedded statement.

- while-statement
- do-while statement
- for-statement
- foreach-statement

While-statement

The while statement conditionally executes an embedded statement zero or more times.

Syntax:

```
while( condition )
{
  embedded-statement;
}
```

Example

```
int i = 0;
string[] jobs = new string[10];
Console.WriteLine("Enter the no of jobs posted ?");
int count = Convert.ToInt32(Console.ReadLine());
Console.WriteLine("Enter Jobs");
while(count!=i)
{
  jobs[i] = Convert.ToString(Console.ReadLine());
  i++;
}
Console.WriteLine("===========");
for (i = 0; i <= count; i++)
{
  Console.WriteLine(jobs[i]);
}
Console.ReadLine();
```

```
Enter the no of jobs posted ?
2
Enter Jobs
Jr Angular Developer
Jr .Net Developer
===========
Jr Angular Developer
Jr .Net Developer
```

do-while Statement

This statement executes its embedded statements one or more times.
Unlike the while Statement ,a do-while loop is executed once before the conditional expression evaluated.

Syntax:

```
do
{
   //code to be executed
}
 while   ( condition )
```

Example

```
int i = 0;
string[] jobs = new string[10];
Console.WriteLine("Enter the no of jobs posted ?");
int count = Convert.ToInt32(Console.ReadLine());
Console.WriteLine("Enter Jobs");
do
{
jobs[i] = Convert.ToString(Console.ReadLine());
i++;
}
while (count != i);
Console.WriteLine("===========");
Console.WriteLine("POSTED JOBS");
Console.WriteLine("===========");
for (i = 0; i <= count; i++)
{
  Console.WriteLine(jobs[i]);
}
Console.ReadLine();
```

```
Enter the no of jobs posted ?
2
Enter Jobs
Jr Angular Developer
jr .Net Developer
===========
POSTED JOBS
===========
Jr Angular Developer
jr .Net Developer
```

The for statement

This statement begins with the for keyword and is followed by parentheses.
The parentheses contain an initializer, a condition, and an iterator statement, all separated by semicolons.

Syntax:

```
for ( Initialization ; condition ; Iterator )
{
Statement;
}
```

Example

```
string[] jobs = new string[10];
Console.WriteLine("Enter the no of jobs posted ?");
int count = Convert.ToInt32(Console.ReadLine());
Console.WriteLine("Enter Jobs");
for (int i = 1; i <= count; i++)
{
  jobs[i] = Convert.ToString(Console.ReadLine());
}
Console.WriteLine("--------------");
Console.WriteLine("POSTED JOBS");
Console.WriteLine("--------------");
for (int i = 1; i <= count; i++)
{
  Console.WriteLine(jobs[i]);
}
Console.WriteLine("--------------");
Console.ReadLine();
```

```
Enter the no of jobs posted ?
2
Enter Jobs
Asst Manager
Senior .Net Developer
--------------
POSTED JOBS
--------------
Asst Manager
Senior .Net Developer
--------------
```

The foreach statement

The foreach statement enumerates the elements of a collection, executing an embedded statement for each element of the collection.

Syntax :

```
foreach(local-variable-
type identifier in expression )
{
embedded-statement
}
```

Example

```
string[] jobs = new string[] { "Manager","Tester","Developer"};

foreach(var job in jobs)
{
Console.WriteLine(job);
}
Console.ReadLine();
```

```
Manager
Tester
Developer
```

Conclusion

As we conclude Chapter 2, we've navigated the core elements of C# programming.

- Variables serve as the data vessels, offering adaptability through types like int, char, and string.
- Control statements, including conditionals like if and loops like for, shape program flow, making our code responsive. These fundamentals are the building blocks of effective C# programming.

Thank You