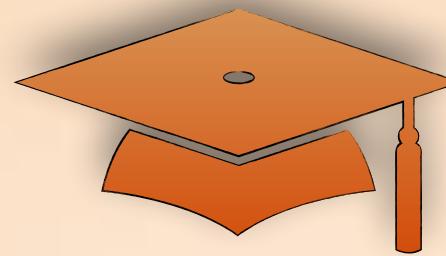


# The Complete C# Developer Course

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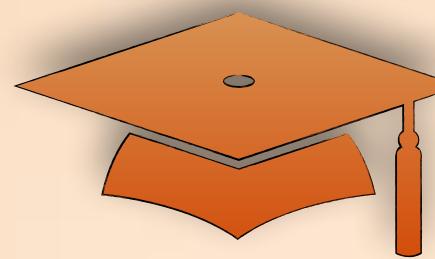
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# Advanced C# Part 1

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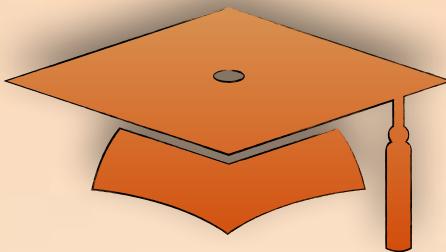
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# Advanced C# Part 1

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## .NET Framework

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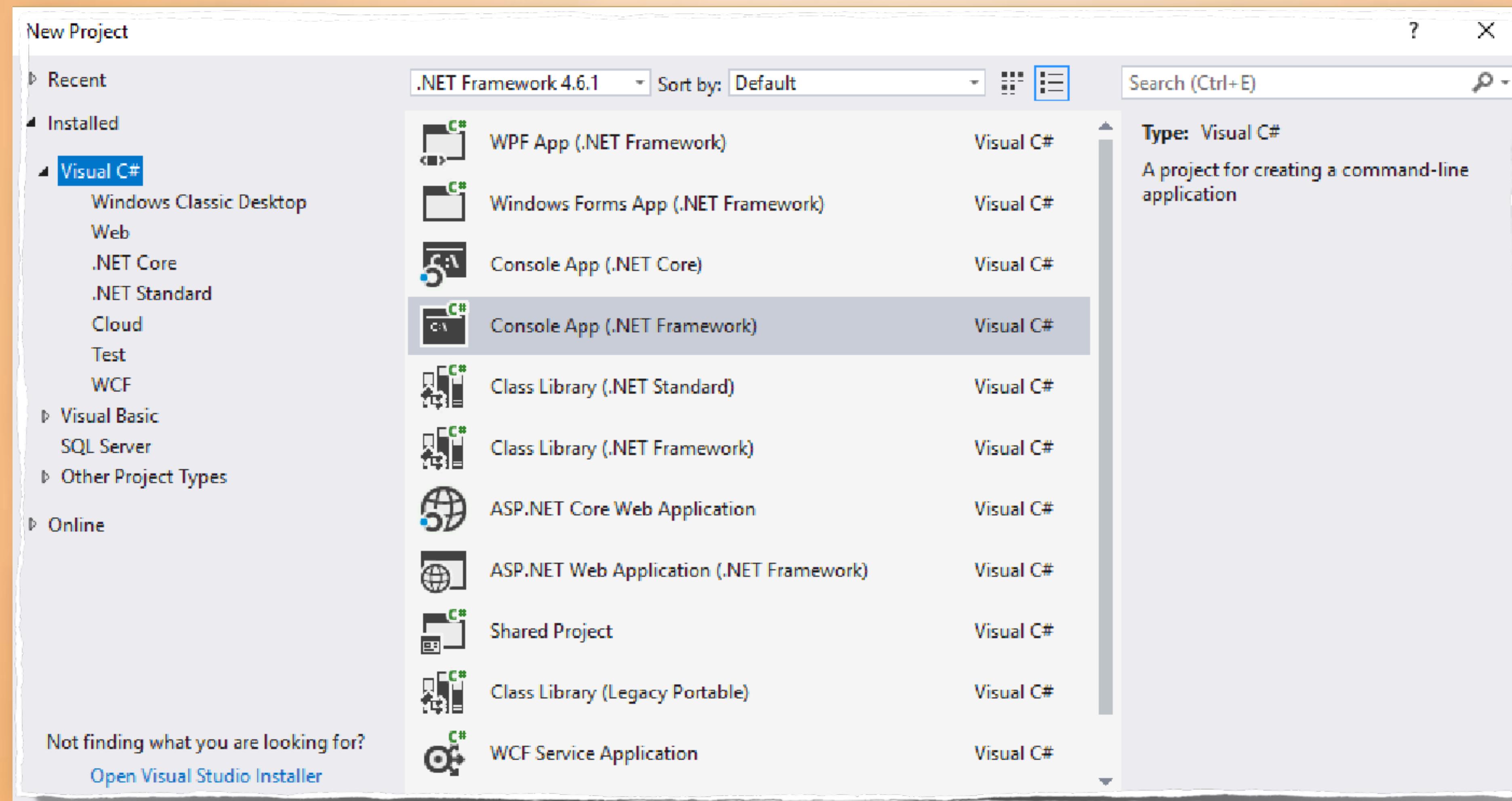
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# .NET Framework

## C# programs run on the .NET Framework



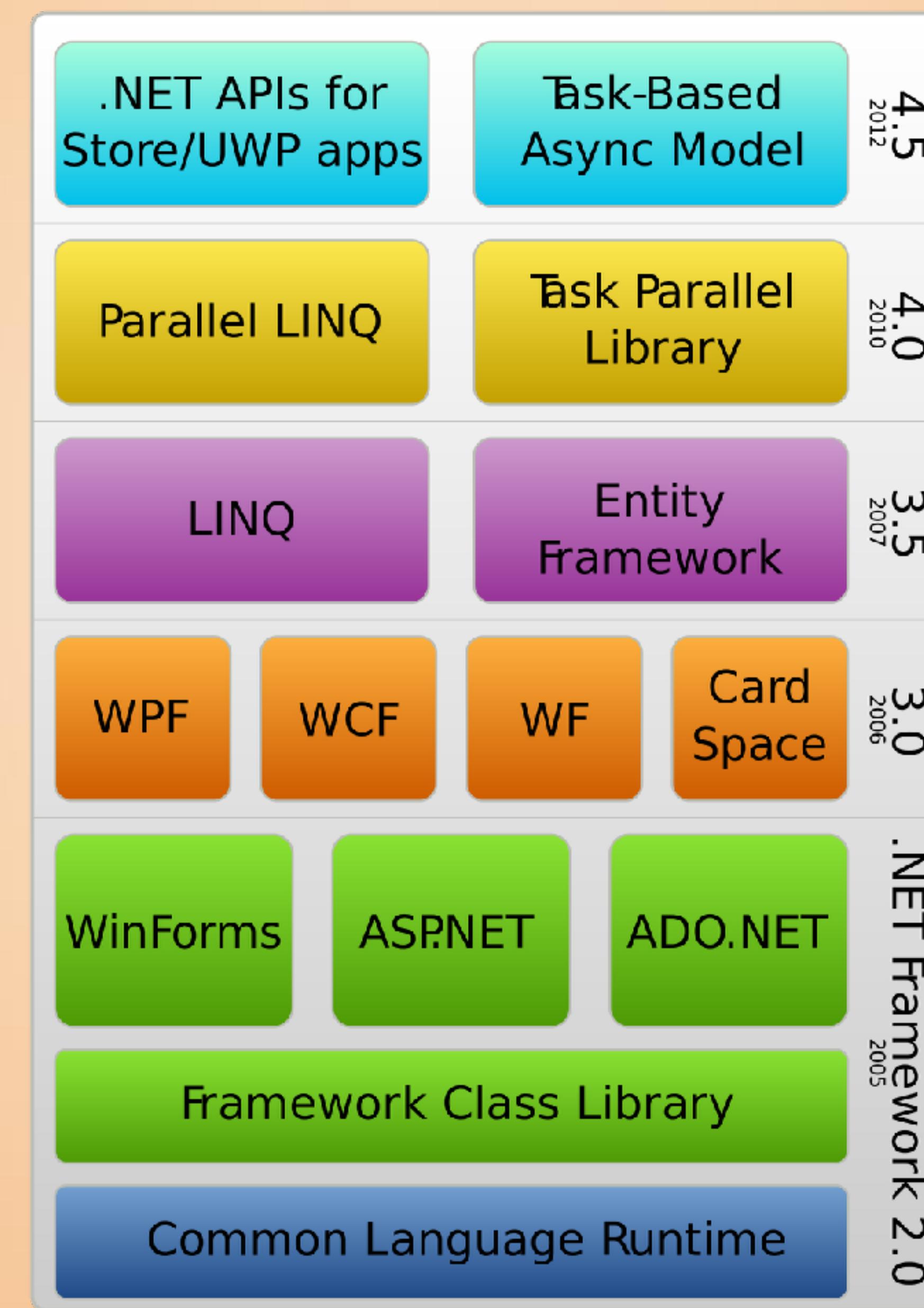
# .NET Framework

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## What is .Net framework?

*It is a component of Windows that includes a virtual execution system called the (CLR) Common Language Runtime and a unified set of class libraries.*

# .NET Framework



# .NET Framework

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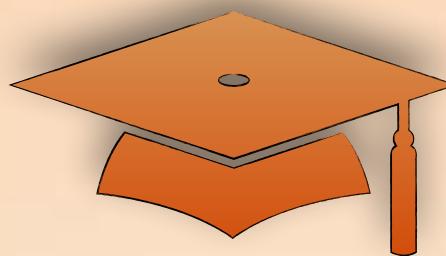
## Framework Class Libraries

<https://msdn.microsoft.com/en-us/library/mt472912.aspx>

System  
System.Activities  
System.Collections  
System.Data  
System.Diagnostics  
System.DirectoryServices  
System.Drawing  
System.Globalization  
System.IO  
System.Linq  
System.Management  
System.Messaging  
System.Net  
System.Printing  
System.Resources  
System.Security  
System.Speech  
System.Text  
System.Threading  
System.Timers  
System.Web  
System.Windows

# Advanced C# Part 1

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## Build, Rebuild and Clean

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# Build, Rebuild and Clean

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## Build

**Build the files that have been modified since the last successful compile (Incremental)**

## Re-Build

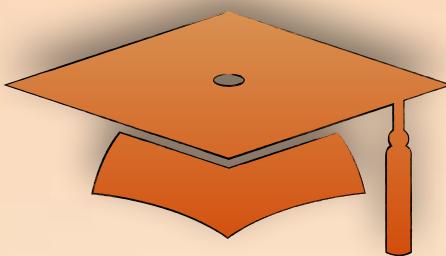
**Clean then build the solution from scratch, ignoring any previous compiles made before**

## Clean

**Delete all compiled files (i.e., EXEs and DLLs) from the *bin/obj* directory.**

# Advanced C# Part 1

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## string VS String

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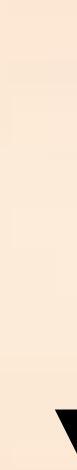
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# string VS String

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**string is a keyword in Base Class Library (BCL)**

**directly maps**



**System.String in Framework Class Library (FCL)**

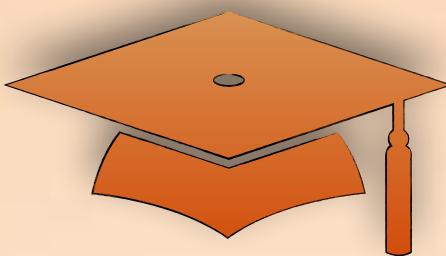
**string is an alias for the System.String**

# string VS String

<a href="#">bool</a>	System.Boolean
<a href="#">byte</a>	System.Byte
<a href="#">sbyte</a>	System.SByte
<a href="#">char</a>	System.Char
<a href="#">decimal</a>	System.Decimal
<a href="#">double</a>	System.Double
<a href="#">float</a>	System.Single
<a href="#">int</a>	System.Int32
<a href="#">uint</a>	System.UInt32
<a href="#">long</a>	System.Int64
<a href="#">ulong</a>	System.UInt64
<a href="#">object</a>	System.Object
<a href="#">short</a>	System.Int16
<a href="#">ushort</a>	System.UInt16
<a href="#">string</a>	System.String

# Advanced C# Part 1

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## Documentations

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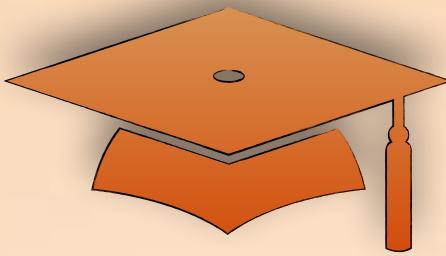
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# Advanced C# Part 1

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## Snippets

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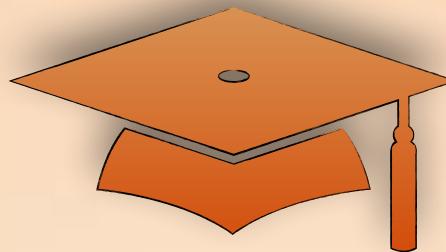
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# Advanced C# Part 1

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## Exercise file creator

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# Exercise file creator

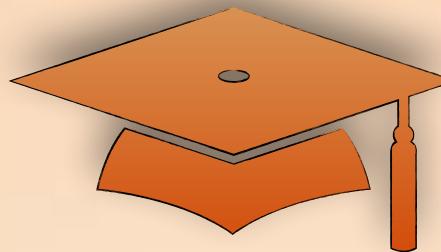


## Sample text inside file

*File no 1, created on date and time*

# Advanced C# Part 1

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## Introduction to cryptography

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# Cryptography

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**Cryptography is a way of storing and transmitting data in a particular form unlike its normal form**

## Terms

### Encryption:

*The process of converting information using cryptography. Information that has been converted this way is called encrypted.*

### Decryption:

*The process of unlocking the encrypted information using cryptographic techniques.*

### Key:

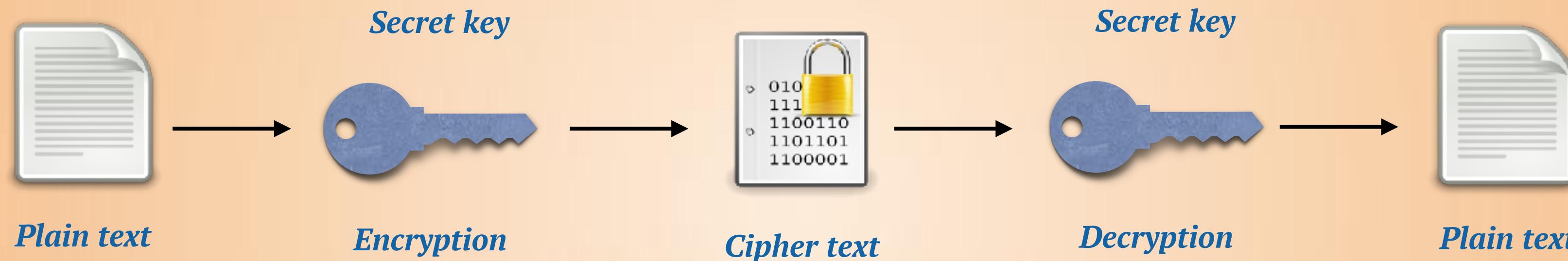
*A secret like a password used to encrypt and decrypt information.*

# Cryptography

## Types of encryption

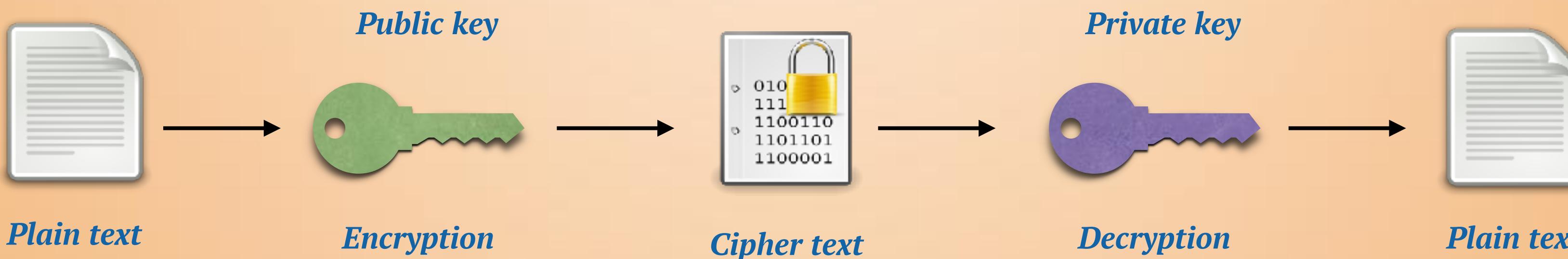
### Symmetrical Encryption:

*Encryption and decryption use the same key*



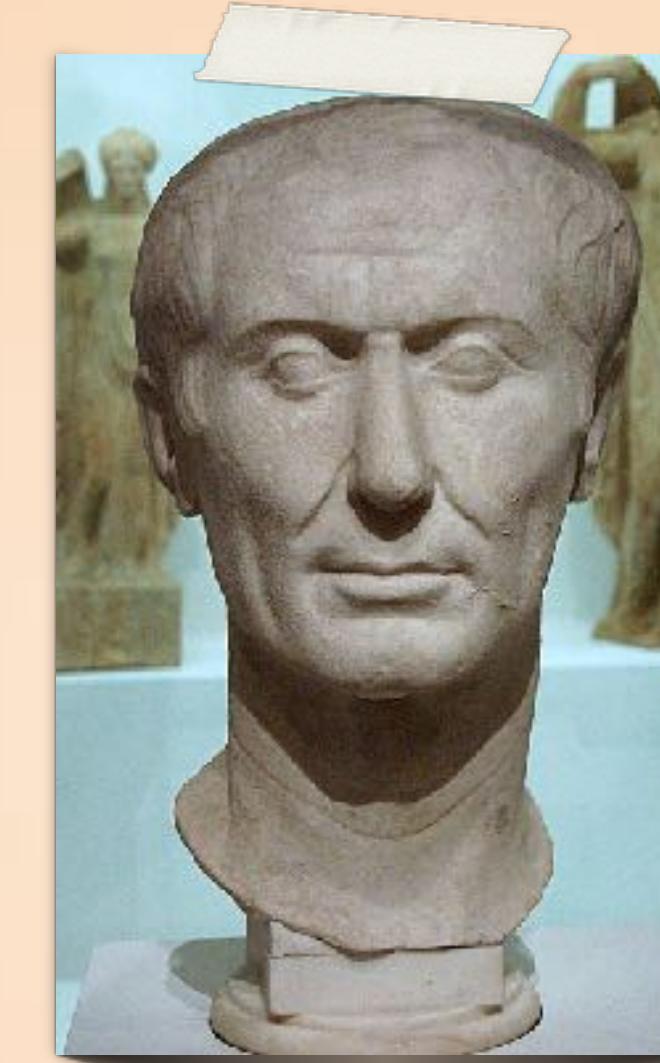
### Asymmetrical Encryption:

*Encryption and decryption use different key, a public key and a private key*

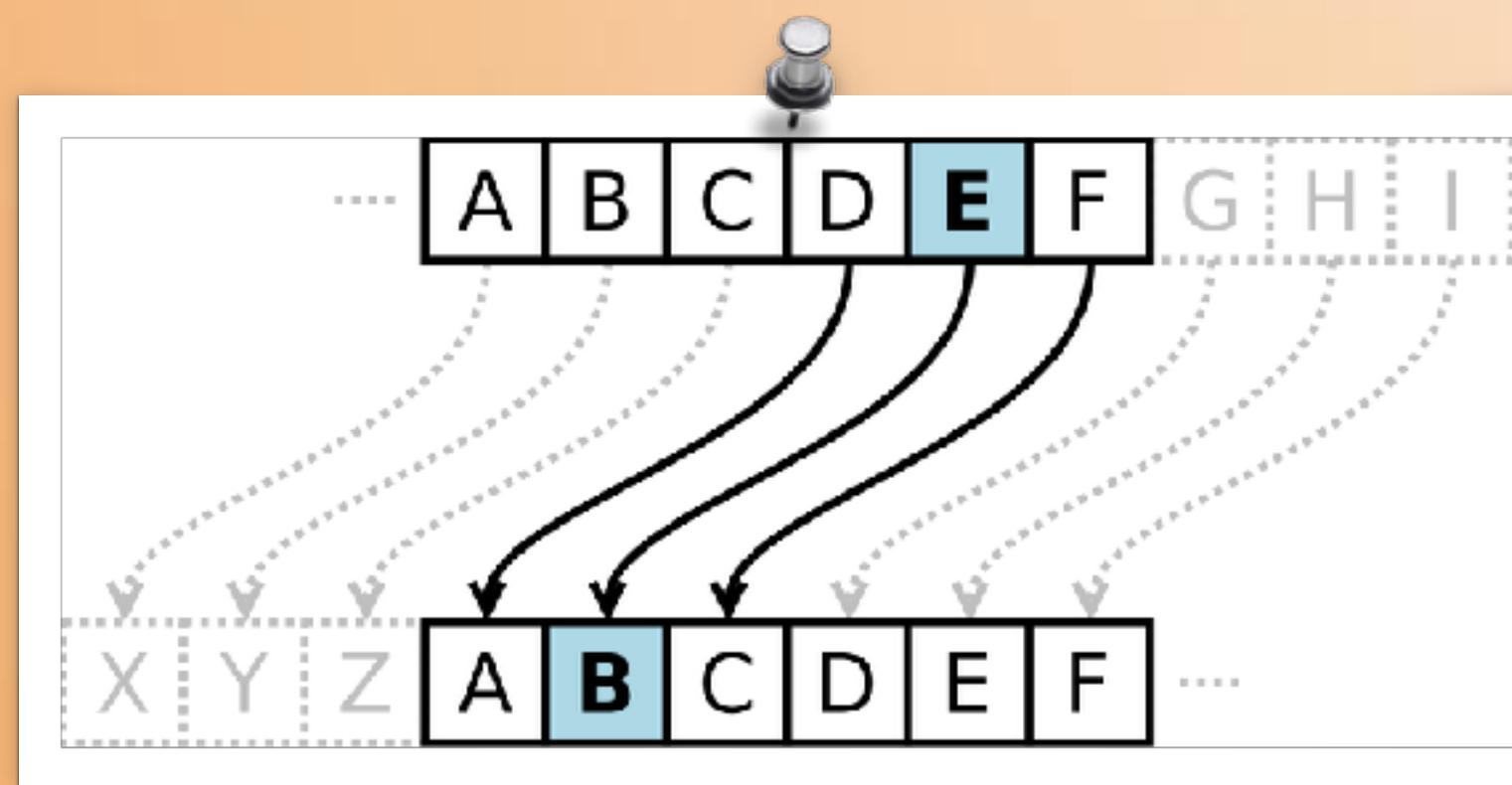


# Cryptography

## Caesar Cipher



It is a type of substitution cipher in which each letter in the plaintext is 'shifted' a certain number of places down the alphabet



Plain: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
Cipher: X Y Z A B C D E F G H I J K L M N O P Q R S T U V W

Cipher: zlqwhu lv frplqj  
Plain: winter is coming

# Cryptography

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## Popular Encryption Algorithms

**DES**

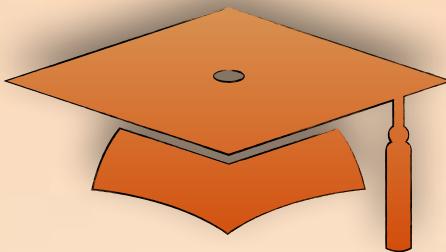
**Triple DES**

**RSA**

**BlowFish**

# Advanced C# Part 1

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## Caesar cipher exercise

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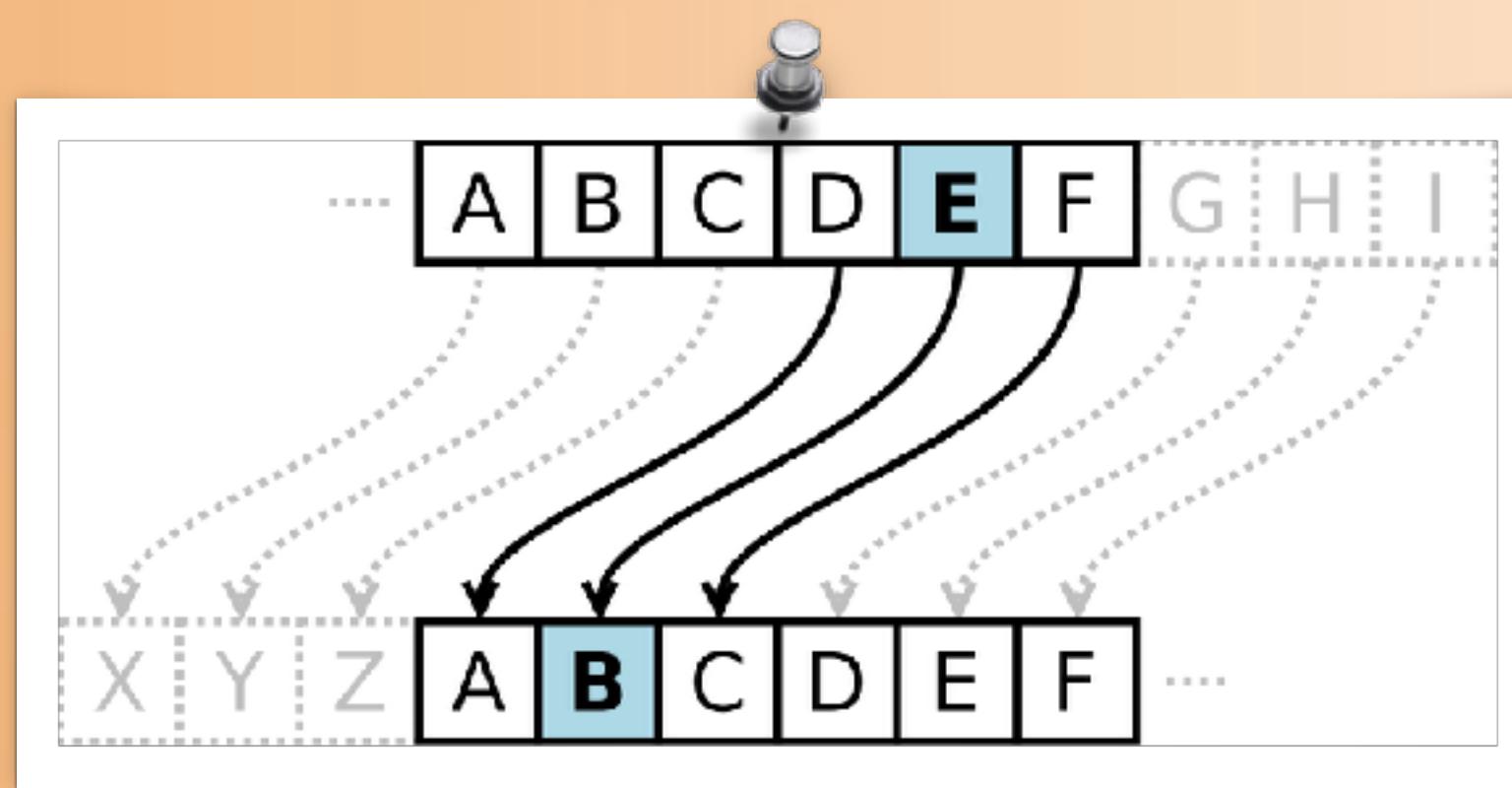
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# Caesar cipher exercise

3 digits shift



Plain: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
Cipher: X Y Z A B C D E F G H I J K L M N O P Q R S T U V W

# Assignments

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## Assignment No.9: (Caesar Cipher App)

- Let user to choose between encryption, decryption or exit the app

### Encryption mode

- ✓ Display welcome message
- ✓ Ask user to enter message to encrypt
- ✓ Ask user about the shift
- ✓ Display the encrypted message
- ✓ Display the options to the user

### Decryption mode

- ✓ Display welcome message
- ✓ Ask user about the file to decrypted
- ✓ Ask user about the file name
- ✓ Ask user about the shift
- ✓ Display the decrypted message
- ✓ Display the options to the user

### Exit mode

- ✓ Display goodbye message

- All app text should be in green and user's should be in white.
- Try to catch any error possible like wrong path..etc.
- Error messages should be in red.

# Assignments

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## **Assignment No.10: (Caesar Cipher Encrypt Snippet)**

- Create snippet to create caesar cipher encryption method.