Microsoft Visual Studio

Visual Studio is an IDE used for writing software applications. It offers a variety of language and project support, but is primarily used with C# and the .Net Framework or .Net Core.

## Project Organization

Visual Studio uses several hierarchies to organize its applications.   
  
The highest level of organization is the Solution. This contains everything needed to make a fully functioning application including all inter-related classes, structures, etc.

## Projects

A Solution is made up of many projects. Each project is one “module” or portion of an application. For a project about ocean liners, a project may each contain one “phase” of the journey such as a build, sail, explore, and recover.

Each project will have a variety of files including classes, interfaces, etc. Each project will have a main “Program.cs” class which is intended to call the method, and do all the processing that the project requires.

## Object Explorer

Object Explorer allows a file to be open in more detail, providing details about what project it’s a part of, functionalities it offers other programs that reference it, and possibly a basic summation of what it’s intended to do.   
  
Object Explorer can be accessed by right-clicking on a file and selecting “View in Object Explorer” or through the view menu.

## References

Projects can have dependencies or other projects that they need to access in order to have use of their functionality. If a namespace/function is referenced without having a reference to the class or project containing that functionality, then an error will be thrown and the program will not function.

References can be seen by opening a project in Solution explorer, and expanding the references tab.

Adding a reference can be done by right-clicking and selecting add reference.

## NuGet Packages.

NuGet Packages are groups of code that are available from a source, that can be imported into an application to access that functionality.   
  
This is a simple to distribute and include widely used code across several applications, or to simplify certain common tasks that a wide-variety of users experience.   
  
NuGet Package Management is at the solution level, and can seen by expanding the solution.

Right-clicking will give the options to restore nuget packages, or to manage them.   
  
Clicking manage will open the NuGet Explorer view allowing all available packages to be checked/added/updated/removed from an application. Packages can be viewed from all sources (default) or by a certain source only through the source drop down.

## Team Explorer

The Team Explorer is the central repository for GIT based collaboration. From here, users can add or remove remote repositories, open a repository to select a solution, switch branches, and commit changes.

To add a Repo go to the hometab, and select add and navigate to the repo to add.   
  
To commit, open the changes screen, verify all changes to include, and select Commit and sync.

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