1. View, Export/Import Visual Studio Settings
   1. Open Visual Studio
   2. Open Settings window
   3. Walk through various setting options available
   4. Export current settings
   5. Change editor font settings& verify if changes reflect in the editor
   6. Import previously exported settings
2. Creating Solution
   1. Strat Visual Studio .Net
   2. Explore options available on Start Page
   3. Create new project of type “Console Application”
   4. Name the application as “HelloWorld”
   5. View application folder structure through Solution Explorer window
   6. Rename solution to assign new name
3. Adding Project
   1. Open Solution created in above exercise
   2. Add new Project of type Class Library with name MathLib
   3. Add methods – Add, Subtract, Multiply, Divide which will accept 2 integer parameters & return integer value
   4. Add reference of MathLib to the HelloWorld console application
   5. Add code to accept 2 integers & option (1. Add, 2. Subtract, 3.Multiply, 4.Divide) & invoke corresponding method from MathLib to display output
4. Managing Namespaces
   1. Open HelloWorld Console Application created in previous exercise
   2. Open Solution Explore & expand Reference node to see reference of MathLib library
   3. Remove the reference & try building project which would result in error
   4. Add the reference to MathLib again & build project to resolve the error
   5. View namespaces added to your code through template (statements like using…)
   6. Change namespace of MathLib project
   7. Update HelloWorld application to use the new namespace
5. Managing Folders in Solution Explorer –
   1. Explore various options available to identify physical path of your solution by
      1. hovering over HelloWorld.cs file opened in Visual Studio
      2. Right click on Project in Solutions Explorer & clicking Open Folder in File Explorer option
      3. Right click on HelloWorld.cs file opened in Editor & click Open Containing Folder option
      4. Right click on Solution in Solution Explorer & click Open Folder in File Explorer option
   2. Explore various files & folders available under solution folder (i.e. .sln file, .suo file, bin folder ,obj folder, debug folder, release folder etc..
6. Explore Different Files –
   1. Open HelloWorld Solution folder in Windows Explorer
   2. Open HelloWorld solution file in notepad
   3. Observe various contents of solution file e.g. Visual Studio version, List of projects, Debug & Release configurations etc..
   4. Open HelloWorld project file in notepad
   5. Observe various contents of project file e.g. Version, Project Properties, References etc..
   6. Change Executable name to HellowWorldNew by setting Assembly name property of the HelloWorld project
   7. Build the project & verify change in executable name through Windows explorer
   8. Change the executable file location by setting Build Configuration -> Output Path property of the project.
   9. Build the project & verify change in executable location through Windows explorer
7. Explore various toolbars in Visual Studio
   1. Open HelloWorld Solution in Visual Studio
   2. Explore standard toolbar options like - Save, Undo, Redo, Open Folder etc..
   3. Explore editing toolbar options like – Comment, UnComment etc..
   4. Turn on Build toolbar & explore various Build options
   5. Right click on toolbar & explore various toolbars/options available
8. Explore various options in View menu
   1. Open code window by –
      1. Clicking View menu-> Code option
      2. Right click on file in Solution Explorer -> Click View Code option
      3. Double click file in Solution Explorer
   2. Explore other options i.e.
      1. Solution Explorer
      2. Team Explorer
      3. Server Explorer
         1. Connect to existing database & explore database tables & other objects
      4. Class View
         1. Explore class members
      5. Object Browser
         1. Explore classes & their members (Constructors, methods, properties, events..) from various namespaces referred in project
      6. Build the project & see Errors/Warnings reported by compiler through Error List
      7. View build status through Output window
9. Docking & arranging various windows
   1. Pin/Unpin Solution Explorer window to show/hide collection of windows
   2. Drag Solution Explorer window by clicking on tab to various alignments like left, bottom, middle..
   3. Drag entire group of windows by clicking on tab to various alignments like left, bottom, middle..
   4. Dock Solution Control window freely by holding Ctrl key without having to fit into specific area
   5. Open multiple files
   6. Close them one by one by right clicking -> Close option
   7. Close them all together by right clicking -> Close All Documents option
   8. Close all the documents except current one by right h -> Close All but this
   9. Pin/UnPin documents to keep them open during window resize operations
   10. Move windows across multiple tab groups
10. Class View
    1. Open Hello World Solution
    2. Open Class view to explore various members of different classes
    3. Note that Class View arranges classes according to namespaces
    4. Expand project HelloWorld to see members
    5. Expand project MathLib to see members
    6. Hide public/private members through right click menu option
11. Seeing method calls
    1. Open Hello World application
    2. Hover mouse over method Add to see method signature
    3. Open Code Definition window from View menu, click on the Add method to see Add method definition in Code definition window
    4. Try to see definition for some other function calls in Code Definition window
    5. Open definition for Add method by right click -> Go to definition option
    6. Open definition for Add method in place by right click -> Peek definition
12. Navigating inside code
    1. Open Hello World Application
    2. Go to Add method call
    3. Go to Add method call
    4. Come back to Hello World application
    5. Go to Console.Writeline method definition
    6. Navigate through above method calls through Navigate Backward & Navigate Forward options
    7. Set bookmark to Add method definition
    8. Set bookmark to Multiply method definition
    9. Navigate within bookmarks through-
       1. Toolbar buttons for bookmarks
       2. Marks on right scrollbar
       3. Bookmark window
    10. Delete previously set bookmarks
13. Finding text in code files
    1. Find text “Console” through Find & Replace options
    2. Find more instances of text “Console”
    3. Use shortcut keysF3 , Shift + F3 to find text
    4. Move mouse on text “Console” & wait for a sec to see more instances of text
14. Advanced Finding
    1. Find all instances of text “Console”
    2. Search text “System” in all the files from Current solution
    3. Search text “System” in all open files
    4. Search text “System” in all the files from Current solution in 2 different windows
    5. Replace all the instances of “Integer” “with “double” in MathLib project
    6. Move to text “System” using option “Navigate To”
15. Open Hello World Application
    1. Click Add method definition in MathLib project
    2. Open View -> Call Hierarchy window to see calls to Add method
    3. Click on the identified instance to see further details
    4. Right click on the class MathLib & click “Find all references” to see all referring instances
    5. Move mouse over MathLib class definition & see # of references comment
    6. Click to see further details
16. Overview
    1. Click expand/collapse (+/-) icons on left side to expand/collapse code definitions
    2. Move mouse over collapsed definition to see more details
    3. Collapse all functions at once Collapse to definition option
    4. Toggle through expended / collapsed definitions using Toggle Outlining option
17. Error & Output View
    1. Build Solution
    2. View Compiler warnings
    3. Create error by changing method name from Add to AddNumbrs
    4. Build solution to view errors
    5. Open Output widow to see build status
18. Using Help
    1. Open Hello World Application
    2. After call to Add method, add statement “Thread.Sleep(1000)”
    3. Build the solution & observe error
    4. Right click on Thread.Sleep statement & click Resolve option to see possible solution
    5. Move mouse pointer on Thread.Sleep statement to see dropdown offering possible solutions
19. Code snippets
    1. Try adding code with different code snippets
       1. If
       2. For
       3. Switch
       4. Try..catch
       5. Property etc..
20. Working with Build Configurations
    1. Open Hello world Application
    2. Build solution in Debug mode and observe files being generated
    3. Build solution in Releases mode and observe files being generated
    4. Switch between Debug & Release configuration mode from Build tab of Project Properties
    5. Observe settings in Build tab of Project Properties specifically DEBUG constant, Optimize Code check settings
    6. Change the start action to load program “Notepad.exe” or [www.google.com](http://www.google.com) from Debug tab of Project Properties
    7. Reset start action to start project from Debug tab of Project Properties
    8. Add statement “#if DEBUG

Console.WriteLiine(DateTime.Now);

#endif

* 1. Run application in both debug & release mode to ensure that datetime is displayed only in debug mode

1. Breaking Execution
   1. Set Breakpoint to first line of GetString() function through Debug->Toggle Breakpoint option
   2. Run the application to break execution at breakpoint set
   3. Set couple of more breakpoints by clicking in the left margin & break execution to observe flow
   4. Open Call Stack window to see breakpoint call details
   5. Observe variable values in locals window when breakpoint is it
   6. Perform navigations using Step In, Step out & Step Over actions
   7. Observe variable value changes while performing above steps
   8. Use toolbar shortcuts to perform navigations using Step In, Step out & Step Over actions
2. Debugging windows
   1. Set Breakpoint to first line of GetString() function through Debug->Toggle Breakpoint option
   2. Run application till breakpoint is hit
   3. Observe variable values in Locals and Autos windows
   4. Observe **difference** in variables being displayed in Locals and Autos windows
   5. Observe variable value in text visualizer by moving mouse on the variable & clicking magnifying icon
   6. Expand object property values y breaking execution
3. Evaluate Expressions in Watch windows
   1. Select “DateTime.Now” expression & observe its value in Quick Watch window
   2. Modify expression to add 3 days & reevaluate expression to see value
   3. Select “DateTime.Now” expression & Add Watch
   4. View h Expression through Watch Window
   5. Open Immediate window, type expression “Date.Now” & see its value
   6. Modify expression to add 5 months & observe vale in Immediate window
4. IntelliTrace tracing
   1. Open Maths Application & run couple of times to observe total being displayed. It displayed total wrongly couple of times
   2. Open IntelliTrace call stack to see execution steps
   3. Double Click first executing step & debug offline again to observe values
   4. Observe execution for couple of more iterations to see when problem is happening
   5. For problematic iteration, debug code to see erroneous code i.e. rounding issue
5. IntelliTrace Code Map
   1. Add breakpoints to methods returning numbers
   2. Run the application hitting breakpoints to draw code map
   3. View function details through code map right click options