.Net Framework

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System Namespace

- Provides basic services required by most programs.
- Important Classes:
  - AppDomain, Array, Console, Convert, DateTime, Delegate, Double, Environment, EventArgs, Exception, GC, Int16, …, IntPtr, MarshalByRefObject, Math, MulticastDelegate, Object, Random, SByte, Single, String, Type, ValueType
- Important Interfaces:
  - ICloneable, IComparable, IDisposable
- Example Project:
  - RandomEvents.sln in folder "RandomEvents"

System.Collections

- Provides data structures that are typed to hold objects.
- Important Classes:
  - ArrayList, BitArray, Hashtable, Queue, SortedList, Stack
- Important Interfaces:
  - ICollection, IComparer, IDictionary, IDictionaryEnumerator, IEnumerable, IEnumerator, Ilist

- Example Project:
  - Collections.sln in folder "Collections"

System.Collections.Generic

- Provides Containers parameterized on an unspecified type
- Important Classes
    - Dictionary<TKey, TValue>, IList<T>
- Important Interfaces
    - ICollection<T>, IComparer<T>, IDictionary<TKey, TValue>, IEnumerable<T>, IEnumerator<T>, IList<T>
- Example project:
    - Collections.sln in folder Collections

System.Collections.Specialized

- Provides specialized containers and containers for specific types.
- Important Classes:
  - HybridDictionary, ListDictionary, KeysCollection, StringCollection, StringDictionary, StringEnumerator

System.IO

- Supports use of Directories and Files
- Important Classes:
  - BinaryReader, BinaryWriter, Directory, DirectoryInfo, File, FileInfo, FileStream, FileSystemInfo, FileSystemWatcher, Path, TextReader, TextWriter

- Example Projects:
  - Navigate.sln in folder "Navigate"
  - NavigateWithDelegates.sln in folder "NavigateWithDelegates"
  - demoArgs.sln in folder "commandLine"

System.Text

- Supports building strings and converting blocks of characters to and from blocks of bytes.
- Important Classes:
  - Decoder, Encoder, StringBuilder

System.Net

- Supports web-related network operations
- Important Classes:
  - Dns, HttpWebRequest, HttpWebResponse, IPAddress, WebClient, WebProxy, WebRequest, WebResponse

System.Net.Sockets

- Supports network programming with sockets.
- Important Classes:
  - Socket, TcpClient, TcpListener, UdpClient

- We will be covering these later in the course.

System.Runtime.Remoting

- ◆ Supports the abstraction of calls to a remote object.
- ◆ Important Classes:
  - RemotingServices, WellKnownClientTypeEntry, WellKnownServiceTypeEntry
- ◆ Important Enumeration:
  - WellKnownObjectMode

- ◆ Remoting will be important for Projects #3 and #4.

System.Windows.Forms

◆ Supports Windows GUI programming.

◆ Important Classes:
  - Application, Control, Form, Form.ControlCollection, Menu, MenuItem, MessageBox, NativeWindow, Screen, Timer

  - **Dialogs:**
    ◆ ColorDialog, FileDialog, FontDialog, OpenFileDialog, PrintDialog, SaveFileDialog

  - **Controls:**
    ◆ Button, CheckBox, ComboBox, DataGrid, DateTimePicker, GroupBox, Label, ListBox, ListView, MonthCalendar, Panel, PictureBox, ProgressBar, RadioButton, RichTextBox, ScrollBar, Splitter, StatusBar, TabControl, TabPage, TextBox, ToolBar, ToolTip, TrackBar, TreeView

◆ Example Projects:
  - WinFormDemo.sln in folder "Win Form Demo/WinForm Demo"
  - FileDialog.sln in folder "FileDialogDemo"
  - DirMgr.sln in folder "DirMgr"

System.Xml

- Provides support for reading, parsing, and writing XML.

- Important Classes:
  - XmlDocument, XmlElement, XmlNode, XmlNodeList, XmlNodeReader, XmlTextReader, XmlTextWriter

- Example Projects:
  - xmlNodeReader, xmlTextWriter, xmlTextWriter

System.Threading

- Supports the creation and synchronization of threads.
- Important Classes:
  - Thread, ThreadStart, ThreadPool, Timer, WaitHandle
  - Interlocked, Monitor, Mutex, ReaderWriterLock
  - SendOrPostCallback, EventWaitHandle
- Related Class in System.ComponentModel
  - BackgroundWorker

- Example Projects:
  - ThreadDemo1.sln in folder "ThreadDemo1"
  - ThreadPoolDemo.sln in folder "ThreadPoolDemo"
  - delegateDemo.sln in folder "delegateDemos"
  - Project threadDemo.csproj in folder "threadDemo"
  - BackgroundWorker.sln in folder FormWithTask

System.Runtime.InteropServices

- Provides access to native APIs and COM objects.
- Important Objects:
  - DllImportAttribute

- Example Project:
  - ProtypeTimer.sln in folder "timing, interop"
  - Unmanaged.sln in folder "unmanaged C++"

Other Interesting Namespaces

- System.Diagnostics
  - Support for debugging and conditional compilation
- System.Globalization
  - Locale specific operations
- System Reflection
  - Support for type inquiry and dynamic creation of objects
- System.Security, System.Security.AccessControl
  - Managing authorization, authentication, permissions, and policy

End of Presentation