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# C#

## Advanced Level

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CTC Training

Mar 7,8,9

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# Course Outline

- Adding User Interface Elements to Forms
- Displaying GDI+ Graphics
- Working with Delegates and Events
- Inputting and Outputting Data
- Implementing Document Printing
- Interacting with Garbage Collection
- Writing a multi-threaded Application
- Writing Internet and Distributed Applications
- Implementing Security
- Controlling and Analyzing Compiled Code

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# Section 1: Adding User Interface Elements to Forms

- Add a menu to a form based application
- Handle a Menu Item
- Create a Context Menu
- Add a Tool Bar
- Add a Status Bar
- Add a Splitter Bar
- Create and use a Modal Dialog box
- Use a Common Dialog Box
- Create and Use a Modeless Dialog Box

# Section 2: Displaying GDI+ Graphics

- Draw Graphics with Pens
- Fill Areas with Brushes
- Draw Text with Fonts
- Draw Images
- Perform Graphical Transformation

Drawing	Tool
Shapes points, lines	Pen
Areas Polygons, Rectangles, Circles..etc	Brush
Text	Font
Image	Bitmap

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## Section 3: Working with Delegates and Events

- Respond to Keyboard and Mouse Events
- Implementing Drag and Drop
- Use a Delegate
- Work with Custom Events

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## Section 4:Inputting and Outputting Data

- Read and Write Text Data with Streams
- Read and Write Binary Data
- Implement Object Serialization
- Implement Custom Serialization

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# Section 5: Implementing Document Printing

- Print a Document
- Implement Print Preview
- Print Headers and Footers
- Scale Document Printing

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## Section 6: Interacting with Garbage Collection

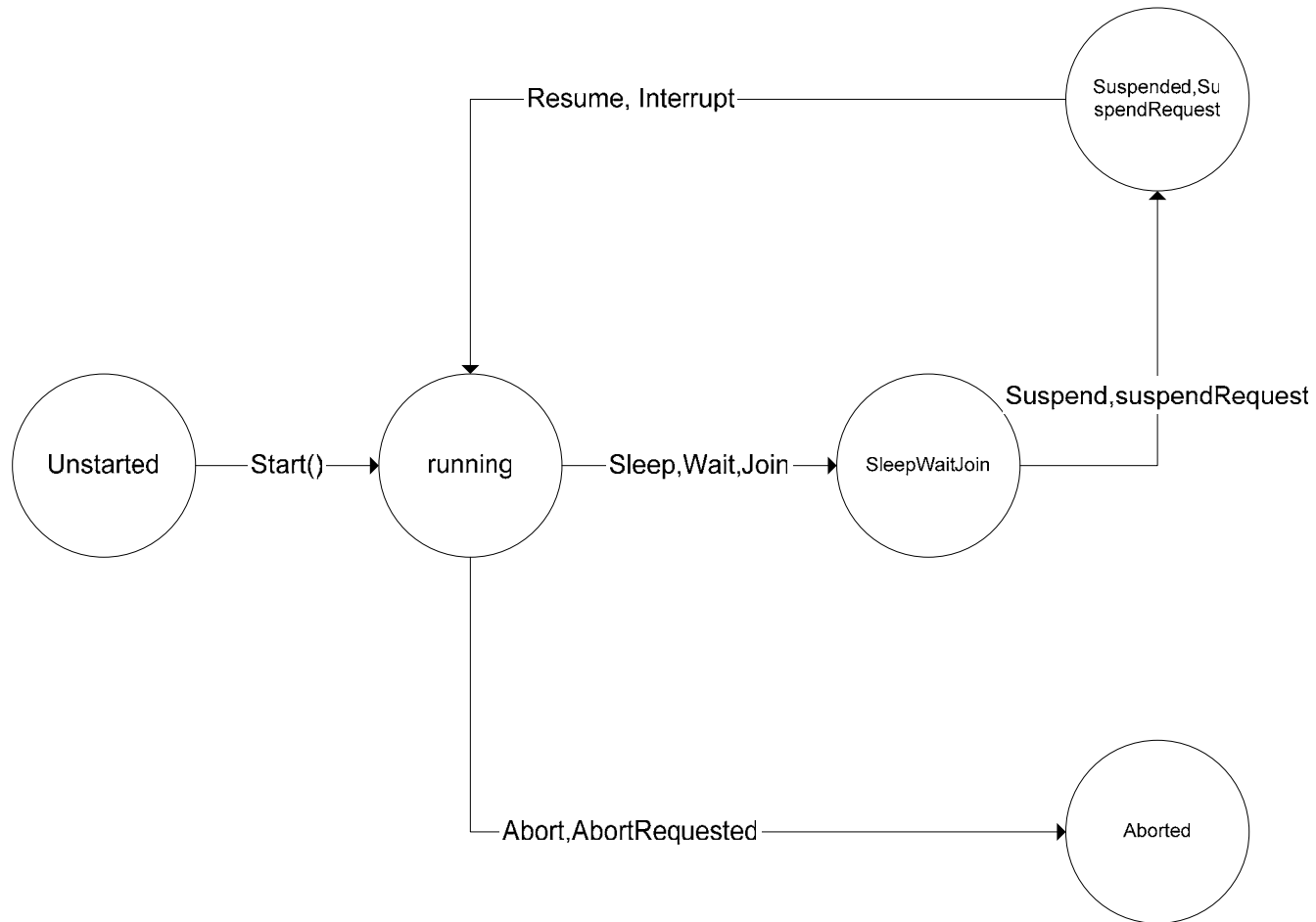
- Force Garbage Collection
- Investigate Garbage Collection
- Expedite clean-up using Dispose Design Pattern
- Manage Temporary Resources

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# Section 7: Writing A Multi-threaded Application

- Create a Thread
- Modify Thread Priority
- Control Execution of a Thread
- Coordinate Threads Sequentially
- Synchronize Access to Data from Multiple Threads in a Process
- Synchronize Access to Data from Multiple Threads between Processes
- Synchronize Access to methods in a Class
- Store Data with Local Data Storage

# Thread Life Cycle



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## Section 8: Writing Internet and Distributed Applications

- Write a Server using Sockets
- Write a Client using Sockets
- Write an HTTP Server
- Write an HTTP Client
- Write a Web Service
- Consume a Web Service
- Create a Server using Remoting
- Create a Client using Remoting

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## Section 9: Implementing Security

- Implement User-based Security
- Implement Code Access Security
- Configure Security Permissions
- Implement Permission Based Security
- Implement Data Encryption and Decryption

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## Section 10:Controlling and Analyzing Compiled Code

- Controlling Compilation using Pre-processor directives and the Conditional Attributes
- Analyze Assembly types using Reflection
- Create Custom Attribute
- Access Memory Directly using Pointers