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# Ink and Windows Presentation Foundation

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Lecture #4: Ink and WPF  
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## From Last Time

- Windows Presentation Foundation (WPF)
    - integration of
      - ink
      - 2D Graphics
      - 3D Graphics
      - video and audio
    - uses visual tree model
      - component based
  - XAML and C# code
  - Important control – *InkCanvas*
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## Important Ink Components

- InkCanvas – System.Windows.Controls
  - receives and displays ink strokes
  - starting point for ink applications
  - stores ink in Strokes
- System.Windows.Ink Namespace
  - contains classes to interact with and manipulate ink
  - examples
    - Stroke
    - InkRecognizer
    - InkAnalyzer
    - GestureRecognizer

## Dealing with InkCanvas

- *InkCanvas* collects Strokes
- Strokes contain *StylusPoints*
- *StylusPoints* contain X,Y, Pressure
  - can also be converted into Geometry objects
- Strokes contain
  - digitizer packets
  - drawing attributes
  - application-defined data
- *InkCanvas* has several stylus level events
  - *StrokeCollected*, *StylusInAirMove*, ...

## Strokes and Geometry

- Strokes
  - perform hit tests
  - get geometry, bounds, Bezier points
  - add properties
  - transformations
- Geometry
  - lose pressure and stylus specific data
  - Within scope of 2D graphics API
  - get area
  - create shapes
- No Cusp or self-intersection detection

## More InkCanvas Features

- Enough support to implement Windows Journal
- Modes
  - Ink
  - InkandGesture
  - GestureOnly
  - EraseByStroke
  - EraseByPoint
  - Select
  - None

