

# EINFÜHRUNG

Flussgraphen in DynamicNodes

# **Flussgraphentheorie und visuelles Programmieren**

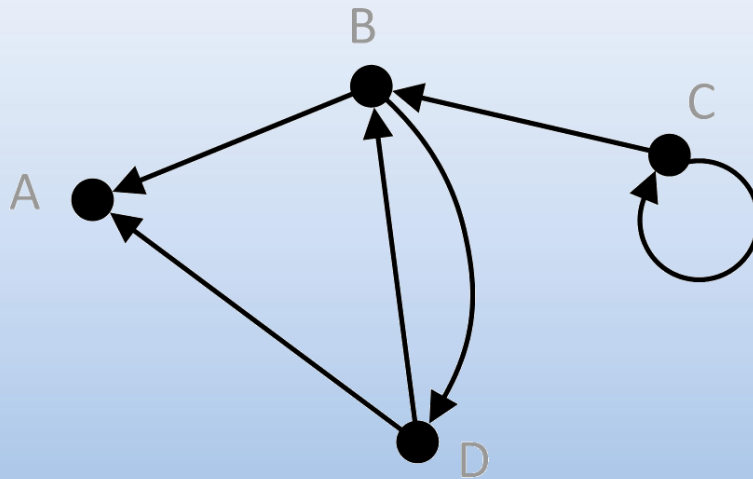
Was sind Graphen und wie kann man visuell Programmieren?

## Modernes Programmieren

The screenshot shows the Microsoft Visual Studio IDE with the following components:

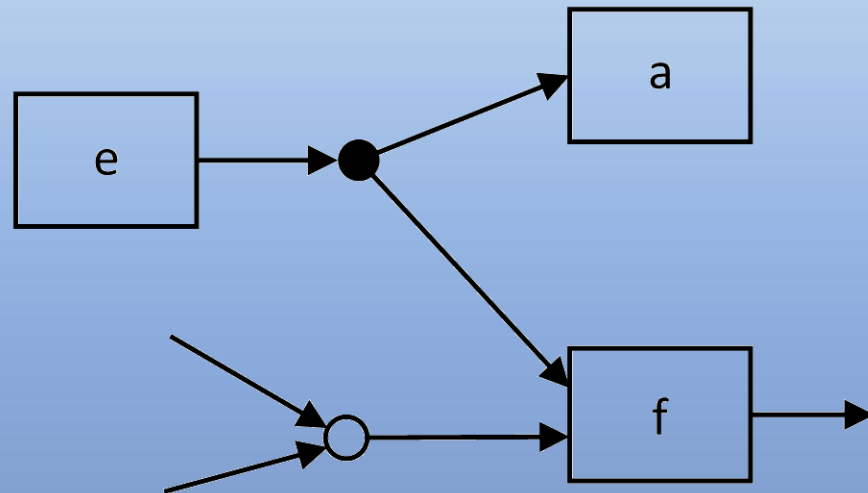
- Project Explorer (Left):** Displays the project structure for 'DynamicNodes2'. The 'Nodes' folder is expanded, showing various interfaces and classes like `INode.cs`, `InPort.cs`, and `OutPort.cs`.
- Code Editor (Center):** Shows the implementation of `DynamicNode.Core.Node`. The `LoadDeclarativePorts()` method is visible, which scans for public properties and fields and registers them as ports. A region of private methods is also shown.
- File Structure (Right):** Shows the file structure of the `Node.cs` file, including private and public methods.
- Type Hierarchy (Right):** Shows the type hierarchy for the `Node` class, indicating that no type hierarchies are currently open.
- Errors List (Bottom):** Shows 0 errors, 0 warnings, and 0 messages.
- Status Bar (Bottom):** Displays '210' lines of code, 'S 13' solutions, 'Zeil 13' files, and 'EINFG 132 MB' memory usage.

## Flussgraphen



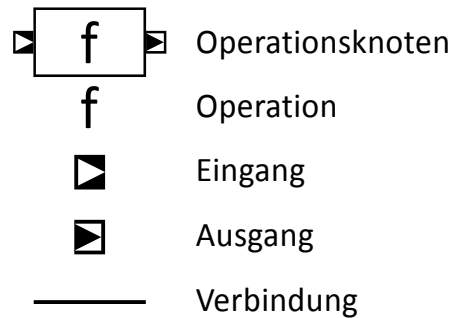
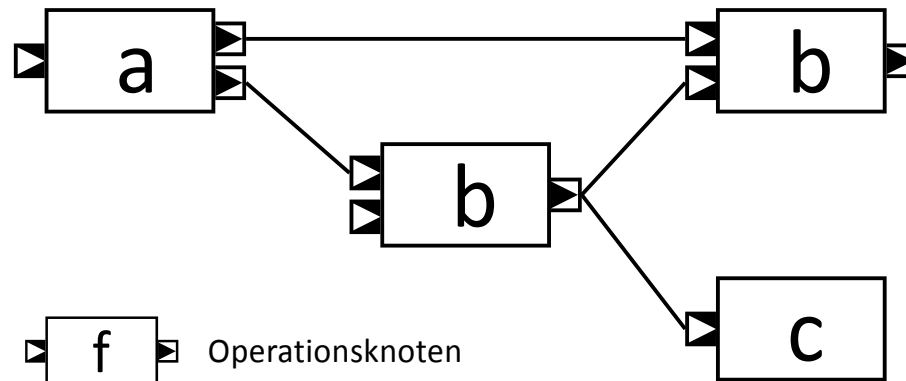
Gerichteter Graph

Flussgraph



## DynamicNodes Flussgraph

In der Theorie



## DynamicNodes Flussgraph

In der Praxis

The screenshot displays the DynamicNodes 2 software interface. The main window, titled "DynamicNodes 2 [nicht gespeichert]\*", shows a workflow graph with several nodes connected by lines. The nodes include:

- Pixel-Grabber**: A node that captures a pixel from the input image.
- Einfaches Muster**: A node that generates a simple pattern (a grayscale gradient).
- Schachbrettmuster**: A node that generates a checkerboard pattern.
- Rendern**: A node that renders the processed image.
- Bildbetrachter Bildansicht 1**: A node that displays the rendered image.

The graph shows the flow of data from the input image through the processing nodes to the final rendered output. A preview window at the bottom shows the rendered image, which is a colorful, circular pattern.

The interface also includes a "Knotenbibliothek" (Node Library) on the left, a "Schnell-Info" (Quick Info) panel on the right, and a "Bildansicht 1" (Image View 1) window at the bottom. The status bar at the bottom indicates the last message: "Der Graph ist gestorben." (The graph has died.) and the time: "Zeit: 13.06.2007 16:24:25".

## Marke (Token)

- Kapselt Daten für Transport im Flussgraphen
- Besteht aus
  - Status
    - Gültig (valid)
    - Ungültig (invalid)
    - Leer (not set)
  - Markenwert: Daten oder nichts
  - Stream: Verknüpfung mit einer Token-Sequenz
  - Stream-Index: Sequenz-Nummer

<http://dynamicnodes.mastersign.de/>