Programming Microcontrollers

With the Microsoft .NET Micro Framework 4.0 Platform

Nicolai Marquardt
Introduction
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Workshop: .NET MF
Introduction

Workshop: .NET MF

Workshop: Zigbee
Microsoft .NET
Micro Framework 4
Overview

- Embedded devices, sensing, robotics
- Programming in C# / Visual Studio
- Subset of .NET
- Libraries for embedded programming
- Arduino pin-compatible boards
- Integrated emulator
Differences to Arduino

- Supports run time debugging: breakpoints, variable inspection, stepping
- Advanced libraries: e.g., FAT and USB support
- Color displays, UI, graphics, WPF (not all of the boards)
Microcontrollers
Microsoft Research
Prototypes
GHI Electronics
Boards
Overview
GHI Microcontrollers

FEZ Cobra
FEZ Rhino
FEZ Domino
FEZ Mini
FEZ Panda
Overview
GHI Microcontrollers

FEZ Cobra
FEZ Rhino
FEZ Domino
FEZ Panda
GHI Panda

(the boards you use)
Panda

Arduino pin-compatible
Panda

Arduino pin-compatible

Digital I/O

Analog Input
GHI Domino
“Hands on”
Installation and Setup
Example 1:
Hello World (LED)
Example 2:

Tilt switch
Example 3:

Button
Example 4:
Distance Sensor
Example 5:
ZIGBEE