Building connected devices

Steve Hodges
Microsoft Research
Cambridge, UK
The .NET Gadgeteer Platform

- Modular Hardware
- Software Tools
- Physical Design

```csharp
void ProgramStarted()
{
    // Initialize GTM.Modules and
    myButton = new GTM.Button(GT)
    myLed = new GTM.MulticolorLED
    myButton.

    // Do one
    Debug.Pri
}
```

- ButtonPressed
- ButtonReleased
- DebugPrintEnabled
- Equals
- GetHashCode
- GetType
- IsPressed
- ToString
A wide variety of modules, one type of cable

Sensors, actuators, networking, user input, displays, power, extensibility, ...
- Press shutter button
- Displays picture
- Store on SD Card
void ProgramStarted()
{
    // Associate events with event-handling methods
    button.ButtonPressed += new Button.ButtonEventHandler(button_ButtonPressed);
    camera.PictureCaptured += new Camera.PictureCapturedEventHandler(camera_PictureCaptured);
}

void button_ButtonPressed(Button sender, Button.ButtonState state)
{
    camera.TakePicture();
}

void camera_PictureCaptured(Camera sender, GT.Picture picture)
{
    // Show the picture on the display
    display.SimpleGraphics.DisplayImage(picture, 0, 0);

    // Save the picture to the SD card
    sdCard.GetStorageDevice().WriteFile("picture.bmp", picture.PictureData);
}
Embedded optical character recognition
Home heating controller
Micro:bit and MakeCode
Build a Cloud Powered IoT App in Minutes

The MXChip IoT DevKit (a.k.a DevKit) can be used to develop and prototype Internet of Things (IoT) solutions leveraging Microsoft Azure services. It includes an Arduino compatible board with rich peripherals and sensors, an open-source board package and a growing projects catalog.

Get Started