Tutorial:
Physical User Interfaces with Phidgets

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CPSC 781: Computer-Supported Cooperative Work
GroupLab, Prof. Saul Greenberg
University of Calgary
Outline

Phidget Background, MSN API Background

The “Phidget MSN Tutorial”
Examples
Phidgets

- RFID Reader
- LC Display
- Servo
- Interface Kit
Architecture

Phidgets

USB

Computer

Computer
USB
Hardware
Architecture

API that encapsulates the low-level Phidget access

Phidgets

Phidgets20.dll

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Phidgets20.dll

JNI Java

C++

COM

COM API Wrapper

.NET

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Phidget Tutorial
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Phidgets20.dll

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COM API Wrapper

Grouplab.phidgets.dll

.NET

Provides .NET components: Phidget objects and skins
Architecture

API that encapsulates the low-level Phidget access

Phidgets

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Hardware

COM

Grouplab.
phidgets.dll

Provides .NET components: Phidget objects and skins

JAVA

C++

COM API Wrapper

.NET
Components and Skins

PhidgetManager

Attach  Devices  Detach  Error

PhidgetManagerSkin

<table>
<thead>
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<th>Attached</th>
<th>Version</th>
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Components and Skins

PhidgetManager

Attach
Detach
Error

PhidgetManagerSkin

PhidgetTutorial

Abstract
Base
Class
PhidgetComponent

Attach
Detach
Error

PhidgetDevice

Name
Serial
Version

= Events

= Properties
Components and Skins

PhidgetTutorial

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Abstract Base Class

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PhidgetDevice

Name

Serial

Version

Servo

PositionChange

Motors

InterfaceKit

SensorChange

InputChange

Outputs

= Events

= Properties
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PhidgetManager
- Attach
- Detach
- Error

PhidgetManagerSkin

Abstract Base Class

PhidgetComponent
- Attach
- Detach
- Error

PhidgetDevice
- Menu
- Sense
- Version

PhidgetTutorial

Servo
- PositionChange
- Motors

ServoSkin

InterfaceKit
- SensorChange
- InputChange
- Outputs

InterfaceKitSkin

Events = Properties
Interaction with MSN Messenger

The COM Interface is from the Windows Messenger (Version 4.7), but you have to use it to access the functionality of the MSN Messenger (Version 7.0 or later).
Our Application Example

**MSN Messenger**

![Image of MSN Messenger interface]

Nic (Online) - exploring the MSN API..
Our Application Example

MSN Messenger

Phidget IFKit: LED for user status

Phidget RFID: set user status

Phidget TextLCD: Status change of users
So far to the theory… let’s practice!

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Tutorial Online