Programming BIObot Robot Using C# Class Library

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Outline

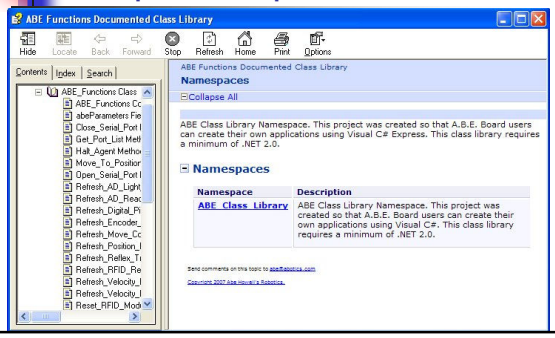
- Take a look at the **A.B.E.** (**A**utonomous ro**B**ot controll**E**r) C# robot class library
- Learn how to include the library in a project and access the contained methods
- Examine several pieces of code for common tasks such as opening a serial port
- Discuss this week's lab and any relevant challenges

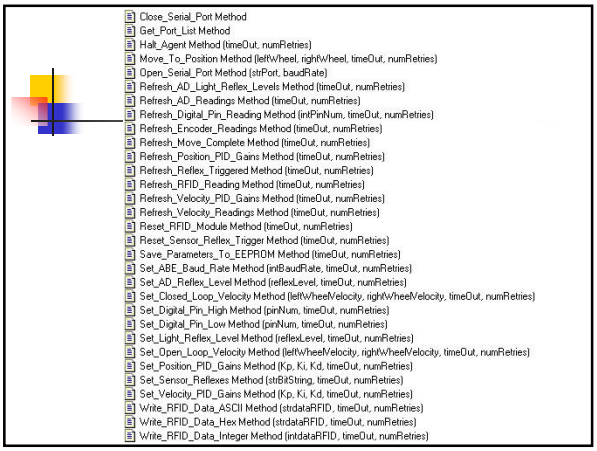
A.B.E. C# Class Library

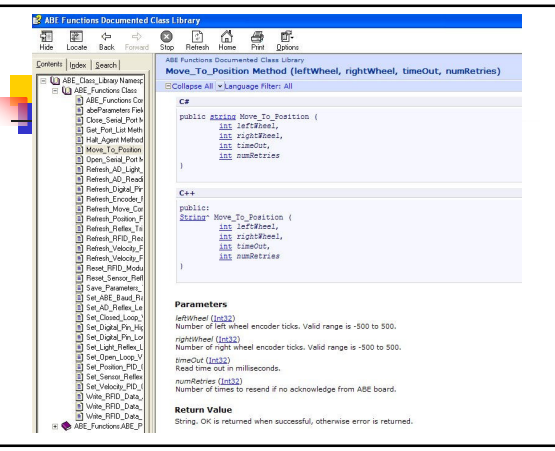
- Requires .NET 2.0 so that we can leverage System.IO.Ports.SerialPort.
- Can use Visual Studio® 2005 or the free Visual C# Express.
- Provides methods for discovery of available ports, open port and close port.
- Access to motion control, sensors, RFID, and various other firmware parameters.
- Does not matter if using Bluetooth or ZigBee since each provide a wireless asynchronous serial pipeline.

ABE_Class_Documentation.chm
Compiled HTML Help file
103 KB

Compiled Help File







Additional Information

- Run the A.B.E. Manual Control Center software and take a look at the Local User Manual.
- You will find that each of the functions are described in some detail.

Add Library to Project

- Need to add the ABE_Class_Library.dll to your project as a reference.
- Declare a new instance of this class.

```
//Declare instance of ABE_Class_Library.
ABE_Class_Library.ABE_Functions myRobot = new ABE_Class_Library.ABE_Functions();
```

- Finally start using it in your project.

Configure & Open COM Port

```
string strResponse = myRobot.Open_Serial_Port("COM1", 19200);
if (strResponse != "OK")
{
    MessageBox.Show(strResponse);
    return;
}
MessageBox.Show("Serial Port Open");
```

Close Serial Port

```
string strResponse = myRobot.Close_Serial_Port();
if (strResponse != "OK")
{
    MessageBox.Show(strResponse);
    return;
}
MessageBox.Show("Serial Port Closed");
```

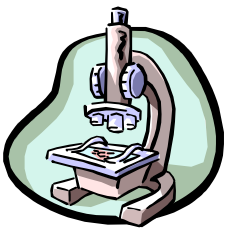
Get A/D Readings

```
string strResponse = myRobot.Refresh_AD_Readings(500,1);
if (strResponse != "OK")
{
    MessageBox.Show(strResponse);
    return;
}
MessageBox.Show("Error Getting A/D Readings");

MessageBox.Show("Bettery Level = " + myRobot.abeParameters.BatteryLevel.ToString());
```

Demo Creating a New Visual Studio Project

Also Discuss this Week's Lab



Questions?