

SWARM: Secure Wireless Ad hoc Robots on Mission

CSU647 & CSG258 Spring 2009

College of Computer and Information Science, Northeastern University

**Guide to Setup Java ME Development
Environment on Windows**

01/07/2009

Part 1. Setup the Development Environment

1. Download and install JDK 6.0

<http://java.sun.com/javase/downloads/index.jsp>

2. Download and install Sun Java Wireless Toolkit 2.5.2

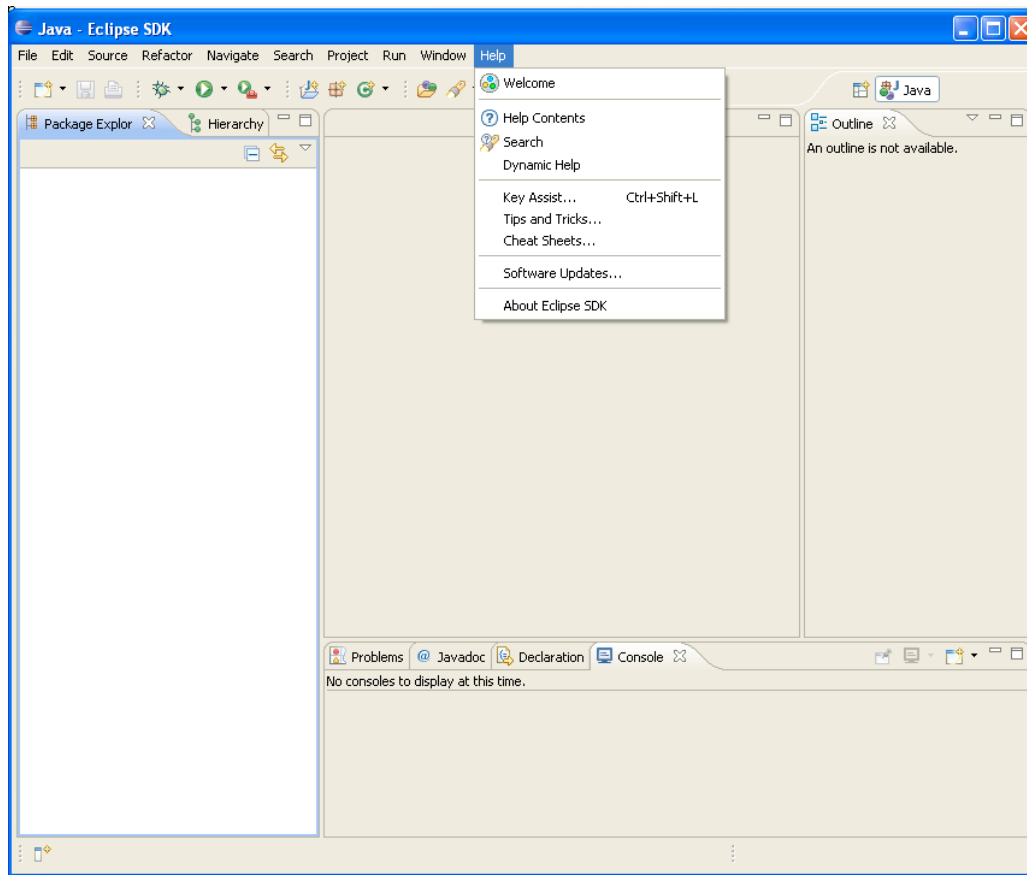
<http://java.sun.com/products/sjwtoolkit/>

3. Download and install Eclipse Classic

<http://www.eclipse.org/downloads/>

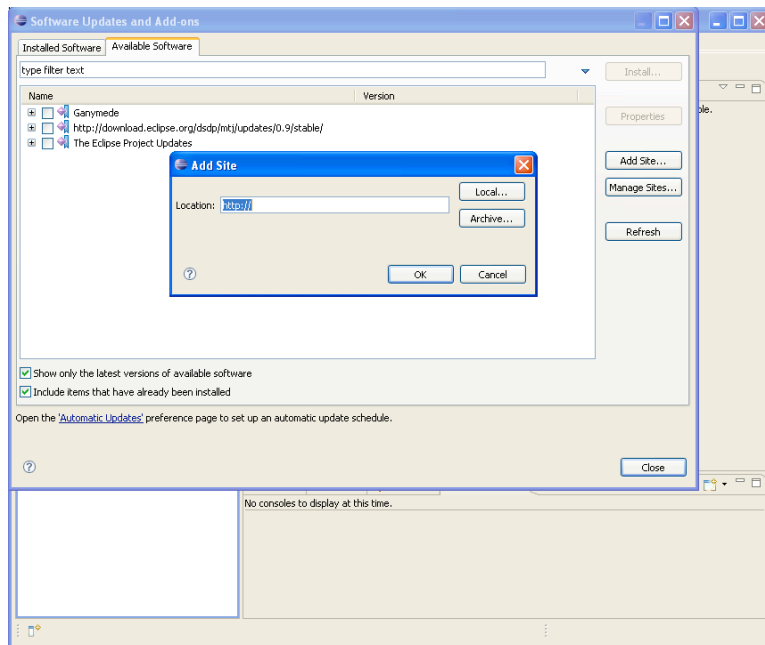
4. Install Eclipse Mobile Tools for Java (MTJ) plug-in via software updates

MTJ is an eclipse plug-in that connects Sun Java wireless toolkit and eclipse IDE.



Click Add Site, and paste the following url to the pop-up window:

<http://download.eclipse.org/dsdp/mtj/updates/0.9/stable>



Choose the entry of mtj and click "Install". Then finish the installation following the instructions on the screen

** Sun Java wireless toolkit includes a Java ME emulator. If you would like to emulate your code on Nokia devices, you could follow steps 5 and 6 to download and install Nokia S60 SDK. Otherwise, go to step 7 to configure the JavaME environment in eclipse. Please note that you should be able to create a JavaME package with Sun wireless toolkit only and you should be able to install the package on real devices regardless the device brand.

5. Download and install DirectX 9.0c.

This is pre-requisite for Nokia S60 SDK

<http://www.microsoft.com/downloads/details.aspx?familyid=2da43d38-db71-4c1b-bc6a-9b6652cd92a3>

6. Download Nokia Java ME SDK from

http://www.forum.nokia.com/Resources_and_Information/Explore/Runtime_Platforms/Java.xhtml

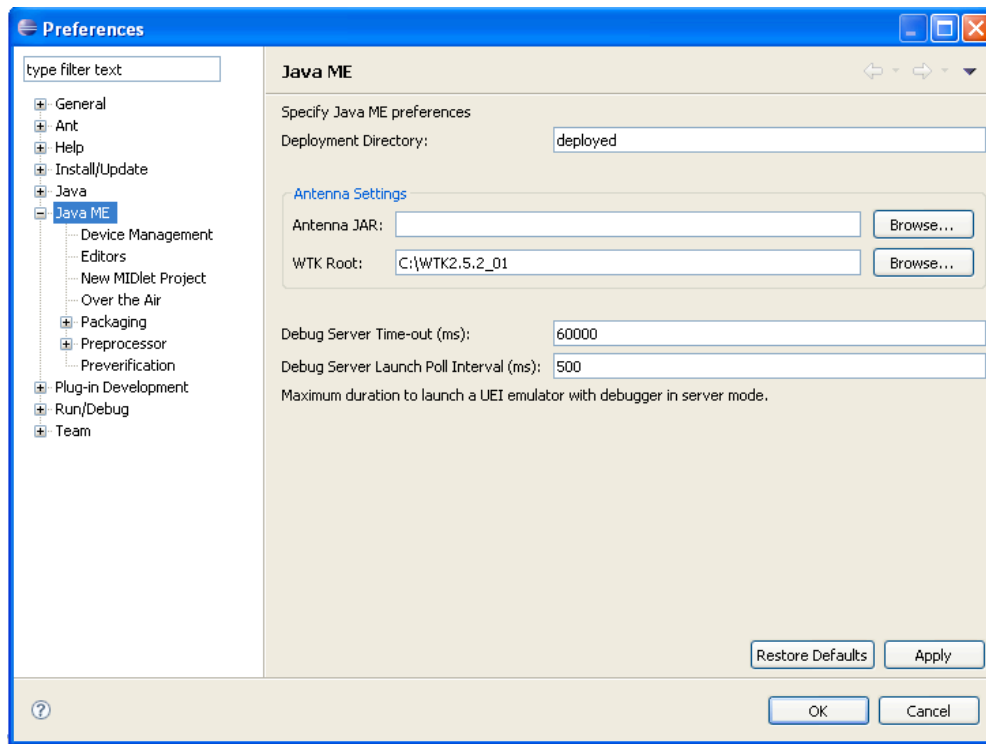
NOTE: please choose a proper version SDK for your mobile devices.

Extract the downloaded zip file and run "setup.exe" to install NOKia S60 SDK

7. Configure the Java ME environment in Eclipse

7.1 specify the root path of Sun wireless toolkit

Go to Tools->Preferences, specify the root path of Sun wireless toolkits in "WTK Root"



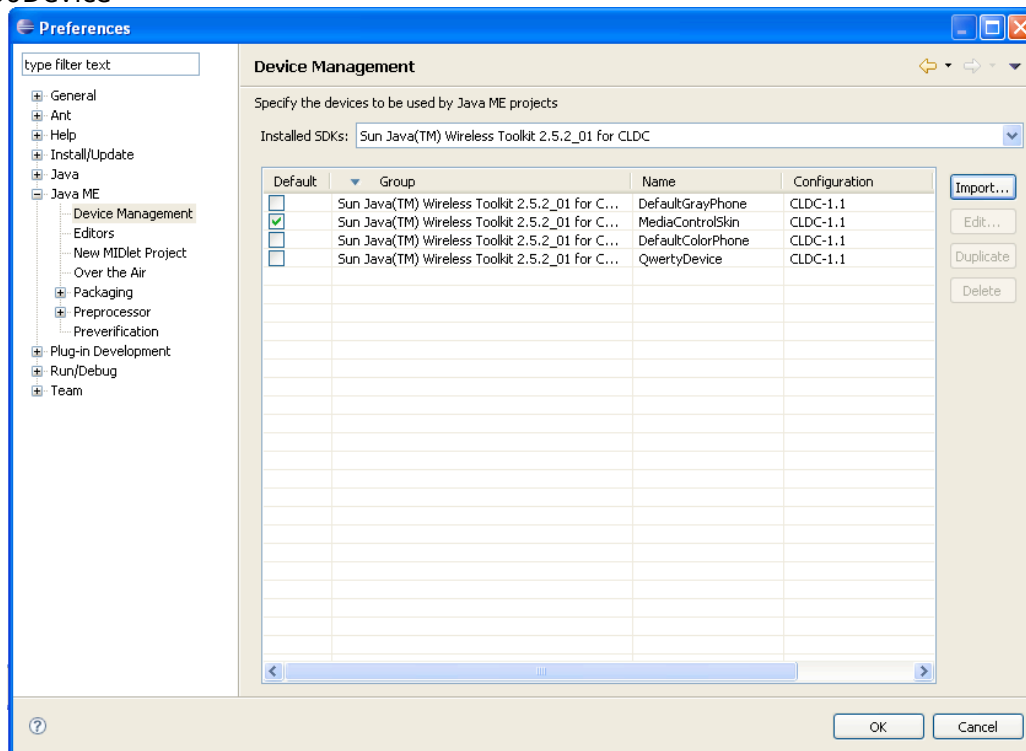
7.2 Open the JavaME->Device Management tab, import the Java ME emulators.

Sun wireless toolkits include a Java ME emulator. Besides, Nokia S60 SDK includes another Nokia customized emulator, which simulates real N95 UI

You could import either one of them or both.

After importing, check the default device you want to use for the JavaME project.

NOTE: If you want to use Nokia S60 emulator, please choose Nokia S60Emulator, **NOT** Nokia S60Device

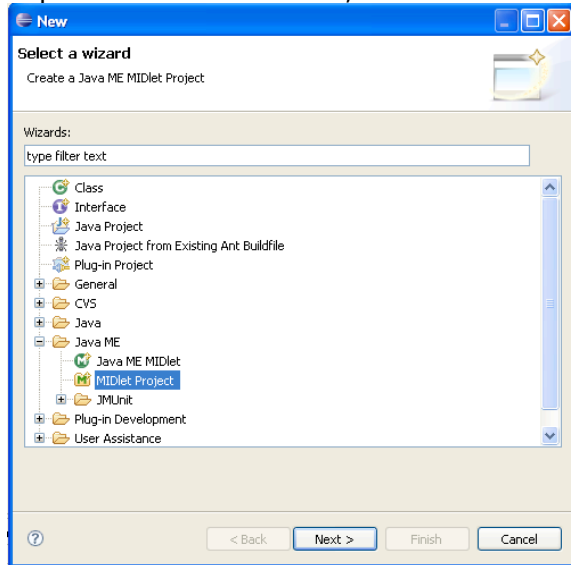


8. Now you are done with setting up Java ME development environment in Eclipse on Windows platform. Find some example code to play around.

Part 2. Get started with JavaME

1. Hello World from Java ME

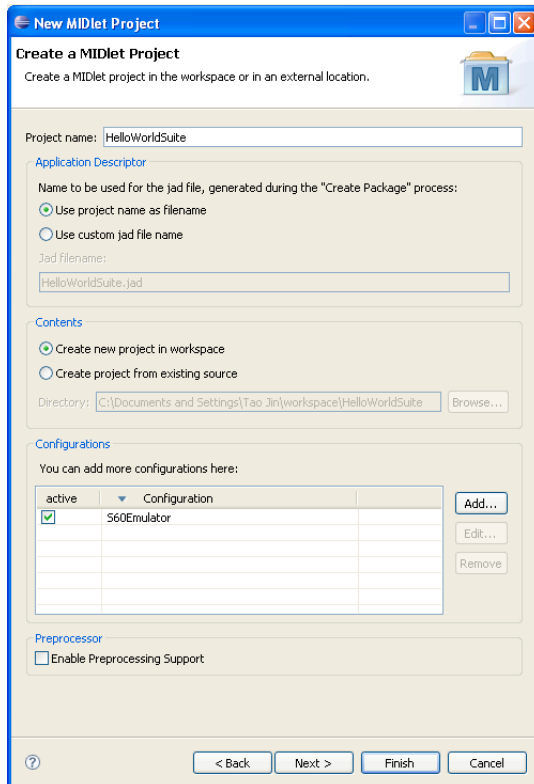
1.1 open File->New->Other, create a new MIDlet project.



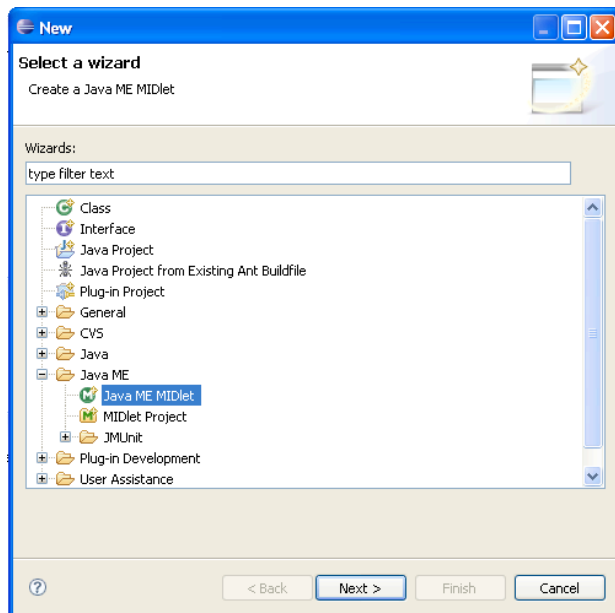
1.2 Name this project HelloWorldSuite

1.3 Specify the emulator you want to use in the configuration field.

NOTE: If you want to use S60 emulator, please make sure you use the S60Emulator rather than S60Device.



1.4 Open File->New->Other, create a new Java ME MIDlet named "HelloWorldMidlet", this is the main class in your MIDlet project



1.5 Edit the auto-generated midlet template java source code as follow.

What this java midlet does is to show a screen with title "Hello World" and to output a string "This is my first Java ME program...". Besides, there is an "Exit" button which allows you to exit the application.

```
import javax.microedition.midlet.MIDlet;
import javax.microedition.midlet.MIDletStateChangeException;
import javax.microedition.lcdui.*;

public class HelloWorldMidlet extends MIDlet implements CommandListener{
    private Form mainForm;

    public HelloWorldMidlet() {
        // TODO Auto-generated constructor stub
        mainForm = new Form("Hello World");
        mainForm.append(new StringItem(null, "This is my first Java ME program..."));
        mainForm.addCommand(new Command("Exit", Command.EXIT, 0));
        mainForm.setCommandListener(this);
    }

    protected void destroyApp(boolean arg0) throws MIDletStateChangeException {
        // TODO Auto-generated method stub
    }

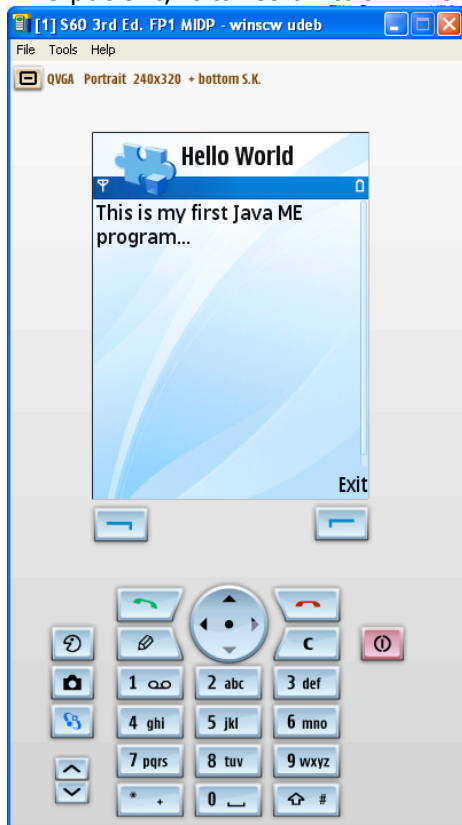
    protected void pauseApp() {
        // TODO Auto-generated method stub
    }

    protected void startApp() throws MIDletStateChangeException {
        // TODO Auto-generated method stub
        Display.getDisplay(this).setCurrent(mainForm);
    }

    public void commandAction(Command c, Displayable s) {
        notifyDestroyed();
    }
}
```

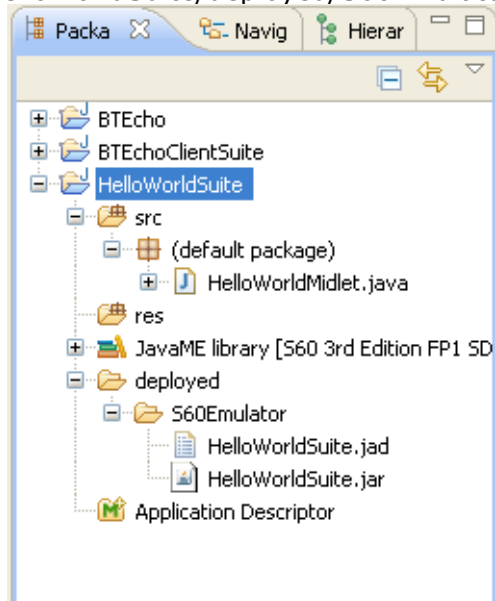
}

- 1.6 Right click the project name in Package Explorer, select Run As->Emulated Java ME JAD
This will automatically start the S60 Emulator and run the midlet.
Be patient, it takes a little while to start the S60 Emulator.



- 1.7 Create the midlet package

Right click the project name in the package explorer, select Mobile Tools for Java->Create Package.
This would generate two files HelloWorldSuite.jad and HelloWorldSuite.jar in directory "HelloWorldSuite/depoyed/S60Emulator"



- 1.8 Install this midlet application on real devices

- 1.8.1 Download and Install Nokia PC Suite from

<http://nokia.us/A4986251>

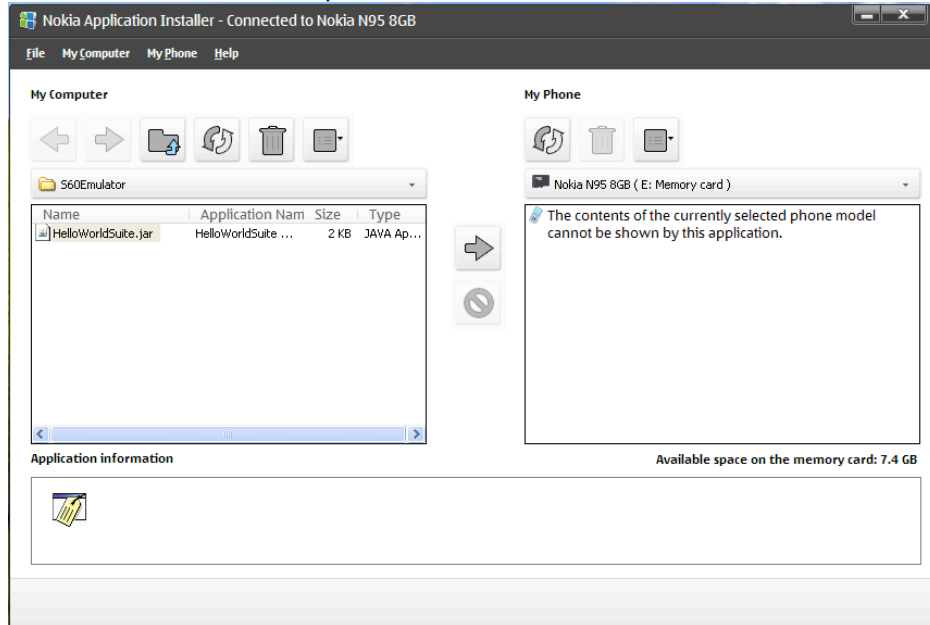
For Mac solution, please go to

http://www.nokiausa.com/link?cid=PLAIN_TEXT_310516

1.8.2 Connect your nokia device to your PC and open the Nokia PC Suite. Wait till your device is recognized.

1.8.2 Select "Install Applications".

1.8.2 Go to the folder that has HelloWorldSuite.jar file, and install it on device. Follow the instruction on your device screen to complete the installation.



References

http://wiki.forum.nokia.com/index.php/Getting_started_with_Java_ME

http://www.forum.nokia.com/Resources_and_Information/Explore/Runtime_Platforms/Java.xhtml

http://wiki.forum.nokia.com/index.php/Installing_Java_ME_development_tools_for_S60