

Student Name:

Laboratory Goals / Objectives

The primary purpose of this lab is to familiarise yourself with some of the Integrated Development Environments (IDE's) that are available for mobile development. You should also be capable of using Sun's Wireless Toolkit and be able to use the Javadoc to navigate the methods and classes that are available.

Sun's Wireless Toolkit

Version 2.5.1 of the toolkit is currently installed. Once launched create a *New Project*. You will be asked for the name of the project and the name of the main class file. This is then followed by a screen for settings. Choose custom setting and select MIDP 2.0 and CLDC1.1 whilst deactivating the MMAPI checkbox. The project is now complete. By default the project has been saved to C:\WTK2.5.1\apps\

The java code for the application must now be written and placed into the *src* directory before compiling. One can use a text editor (Textpad) to edit the java source.

To create a package for deployment purposes go to *Project > Package > Create Package*.

NetBeans

The NetBeans IDE is a freely downloadable development environment available from: <http://www.netbeans.org/> to develop a J2ME application however, the Mobility Pack add-on is necessary. The IDE runs on many platforms including Windows, Linux, Solaris, and the MacOS. Note: The plugin may need to be installed on the system.

Creating a new Project in NetBeans

Go to *File > New Project*, select *Mobile* from the *Category* list and *Mobile Application* from the *Projects* list, click *next*.

Give the Project a suitable name, for example *MyFirstMobileApp*. Select a suitable folder to store the project (/CS5012/Lab01/). Set the Configuration to MIDP2.0 and CLDC 1.1 using the WTK emulators.

Create a new File, *File > New*, Select *MIDlet* as the File Type. Next supply the name *MyFirstMIDlet*. Copy in the code from the appendix and compile it.

Eclipse

Eclipse is available from <http://www.eclipse.org> and is again an IDE that J2SE, J2EE and J2ME applications. An additional plugin is also necessary to develop for mobile devices. Note: The plugin may need to be installed on the system.

Creating a new Project in Eclipse

Go to *File > New > Project*, select *Mobile Tools for the Java Platform* and choose the *MIDlet Project*. On clicking next you will be asked for the Project name and location. A

few more screens will be presented, of which one can simply click on *next* to continue. The *Configure MIDlet Suite* screen is quite important as you can configure the name of the *JAR* file the *MIDlet Suite* as well as the *Profile* and *Configuration* to use.

Ensure Your Program Runs as a Deployed File

From the *Start* menu go to the *WTK 2.5.1 > Run MIDP Application*. Then navigate to the location of the packaged *JAR / JAD* files and select them for execution.

Getting Help

The Javadoc for MIDP is available at <C:\WTK2.5.1\docs\api\midp\index.html> with further information available at <C:\WTK2.5.1\index.html>

Appendix - MyFirstMIDlet.java

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

public class MyFirstMIDlet extends MIDlet implements CommandListener {
    private Display display;
    private Form form = new Form("Welcome to J2ME");
    //private Command anotherCommand = new Command("Do Something Else",
        Command.SCREEN, 1);
    private Command exit = new Command("Exit", Command.EXIT, 1);

    public MyFirstMIDlet() {
        display = Display.getDisplay(this);
        form.addCommand(exit)
        form.append("Welcome to CS5012");
        form.setCommandListener(this);
    }

    public void startApp() { display.setCurrent(form); }
    public void pauseApp() { }
    public void destroyApp(boolean unconditional) { }

    public void commandAction(Command command, Displayable displayable) {
        if (command == exit) {
            destroyApp(false); notifyDestroyed();
        }
    }
}
```

Note:

The example code above may not compile due to programming omissions, when ever given a code sample ensure it compiles before carrying out further edits.

Questions

The following questions are to be filled in individually by each student.

1. What type of an application is Eclipse and NetBeans?

2. What were the compile errors with the sample code given?

3. What does the Constructor of MyFirstMIDlet do?

4. What are the contents of the JAD file?

5. Using the Sun WTK in what folders is the source code placed, the class files found, and the packed JAR file found?

6. Using the MIDP Javadoc list any six of the classes found in the package javax.microedition.lcdui?

7. Using the MIDP Javadoc from what class is a MIDlet extended?
