TEMPO INSTALLATION

v0.1.9 (BETA)

7/18/2007

Platform Independent Notes

Tempo is implemented with Java and requires the Sun's JRE for Java 5.0. This piece of software must be installed first before proceeding with the notes below. Sun's JRE (Java Runtime Environment) supports executing Java programs; Sun's JDK (Java Development Kit) supports writing Java applications. If you already have the Java 5.0 JDK installed, you also have the JRE and meet the requirements.

Otherwise, the installation of the JRE (or JDK) is platform dependent.

On Windows:

Head to http://java.sun.com/javase/downloads/index.jsp and choose either the 5.0 JRE (Update 8 when this document was written) or the JDK 5.0 (also Update 8). Download the archive and install the software.

On Linux:

Make sure that Java is not already available on your platform. To find out, open a terminal, and type at the prompt the command java -version
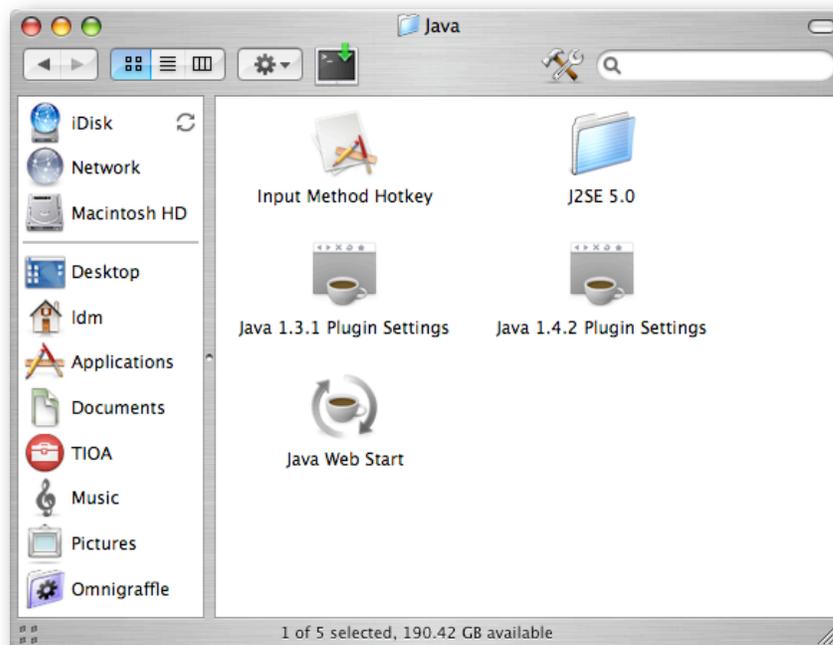
If Java 5.0 is installed (and in your search PATH) you should see something similar to:

```
aegir /home/ldm [21] -> java -version
java version "1.5.0_04"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.5.0_04-b05)
Java HotSpot(TM) Client VM (build 1.5.0_04-b05, mixed mode, sharing)
```
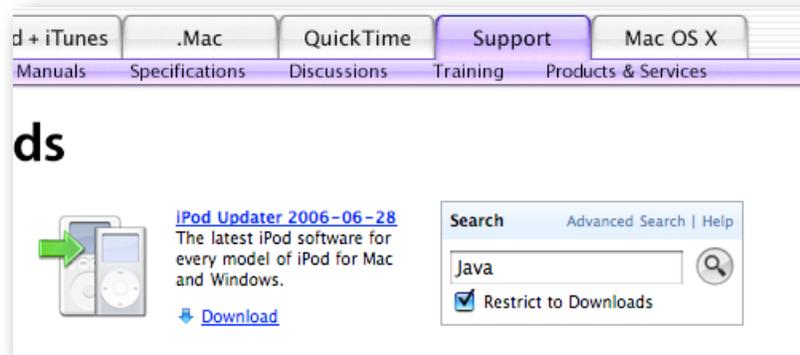
If java is not installed, head to http://java.sun.com/javase/downloads/index.jsp and choose either the 5.0 JRE (Update 8 when this document was written) or the JDK 5.0 (also Update 8). Download the archive and install the software. You should probably have administrator privilege to install the software, check with your site administrator.

On OS X (Tiger 10.4.7 and later)

First, with the Finder, navigate to /Applications/Utilities/Java. If you see the following:

Java 5.0 is already installed. If You do not see any folder for Java 5.0 (or Plugin Settings Panel), head to http://www.apple.com/support/downloads/, search for Java:

And choose the latest release of Java for your processor (Intel or PPC) (J2SE 5.0 Release 4 at the time of this writing). Download the software and install it.

Installing on Windows (Vista/XP/W2K)

If you installed Tempo using the windows install shield the installation is complete and you can run tempo program by simply invoking

```
tempo  <tioafile1> <tioafile2> ... <tioafilek>
```

From anywhere within your filesystem. Without any arguments, the program will offer a brief usage summary.

If you did not install using the windows install shield, begin by downloading the archive of Tempo (tempo.zip). Decompress the archive into a location of your choice. For instance, you could decompress into the windows Program Files directory to obtain

```
C:\Program Files\tempo
```

Modify your PATH environment variable to include the tempo/bin directory that you have just decompressed. On Windows this is easily accomplished by running the windows installation batch file,

```
C:\Program Files\tempo\winInstall.bat
```

You must logout and login again for the changes to take effect. You can now run Tempo by simply invoking

```
tempo  <tioafile1> <tioafile2> ... <tioafilek>
```

From anywhere within your filesystem. Without any arguments, the program will offer a brief usage summary.

Installing on Linux

Download the archive of Tempo (tempo.zip). Decompress the archive into a location of your choice. For instance, assuming that your username is john, you could decompress into your home directory to obtain

```
/home/john/tempo
```

Modify your PATH environment variable to include the tempo/bin directory that you have just decompressed. On Linux this is easily accomplished as follows

For csh/tcsh users:

Edit your .cshrc (/home/john/.cshrc), locate your path setting and add a line (after the path is defined)

```
set path=($path : /home/john/tempo/bin )
```

To state that the search path now includes the bin directory that exists inside the tempo folder your just decompressed.

For bash users:

Edit either your .bashrc or your .profile to add a line (at the end)

```
export PATH=$PATH:/home/john/tempo/bin
```

Finally, resource your shell with the command

For csh/tcsh:
```
source ~/.cshrc
```
For bash users:
```
source ~/.bashrc
```

You can now run Tempo by simply invoking

```
tempo.sh  <tioafile1> <tioafile2> ... <tioafilek>
```

From anywhere within your filesystem. Without any arguments, the program will offer a brief usage summary.

Installing on Mac OS X (Tiger)

Download the archive of Tempo (tempo.zip). Decompress the archive into a location of your choice. For instance, assuming that your username is john, you could decompress into your home directory to obtain

```
/Users/john/tempo
```

Modify your PATH environment variable to include the tempo/bin directory that you have just decompressed. On Mac OS X, this is easily accomplished as follow

For csh/tcsh users:

Edit your .cshrc (/Users/john/.cshrc), locate your path setting and add a line (after the path is defined)

```
set path=($path : /Users/john/tempo/bin )
```

To state that the search path now includes the bin directory that exists inside the tempo folder your just decompressed.

For bash users:

Edit either your .bashrc or your .profile to add a line (at the end)

```
export PATH=$PATH:/Users/john/tempo/bin
```

Finally, resource your shell with the command

For csh/tcsh:

```
source ~/.cshrc
```

For bash:

```
source ~/.bashrc
```

You can now run Tempo by simply invoking

```
tempo.sh  <tioafile1> <tioafile2> ... <tioafilek>
```

From anywhere within your filesystem. Without any arguments, the program will offer a brief usage summary.

Installing UPPAAL

Obtain the UPPAAL application from,

http://www.uppaal.com/

On Windows

Decompress the UPPAAL archive into an install location on the same drive as Tempo. For instance, you could decompress into the windows Program Files directory to obtain

```
C:\Program Files\uppaal
```

Modify your PATH environment variable to include the uppaal directory that you have just decompressed. On Windows this is accomplished as follows,

Open System Properties (Start > Settings > Control Panel > System)

Select the Advanced Tab, Click on Environment Variables (lower left)

In the top box find a variable named Path and click Edit

In the lower box add a semi colon and the path which you installed UPPAAL

```
... ; C:\Program Files\uppaal
```

Complete the changes by clicking Ok on the three open windows. You must restart for these changes to take full effect.

Tempo will now automatically run uppaal when the "-plugin=uppaal" options is specified.

```
tempo -plugin=uppaal <tioafile1> <tioafile2> ... <tioafilek>
```

On Linux

Decompress the UPPAAL archive into an install location on the same drive as Tempo. For instance, if we assume that your login name is john, you could decompress into your home folder to obtain

```
/home/john/uppaal-4.0.2
```

Once the archive is decompressed, move to the directory

```
cd /home/john/uppaal-4.0.2
```

And change the permission on the script named uppaal with the command

```
chmod a+rx uppaal
```

Then move to the bin directory for Linux and change the permission of all the executables with the commands

```
cd bin-Linux
chmod a+rx *
```

Finally, modify your PATH environment variable to include the path to the uppaal script. This depends on which shell you use.

For csh/tcsh users:

Edit your .cshrc (/Users/john/.cshrc), locate your path setting and add a line (after the path is defined)

```
set path=($path : /home/john/uppaal-4.0.2 )
```

For bash users:

Edit either your .bashrc or your .profile to add a line (at the end)

```
export PATH=$PATH:/home/john/uppaal-4.0.2
```

Your are now all set. You can resource your shell. On Linux, the UPPAAL plugin for Tempo can automatically launch the UPPAAL tool and load the translated Tempo specification.

On Mac OS X

The current version of UPPAAL has a bug which prevent the automatic loading of translated Tempo specifications into UPPAAL. You can install the UPPAAL tool (same directions as for Linux). However, you will have to manually load the translated file (extension .xta) into UPPAAL each time.

Installing PVS

Obtain the PVS application from,

> http://pvs.csl.sri.com/download.shtml

The Tempo translator has been tested with PVS version 3.2

For additional details on setting up PVS with the TAME/TIOA libraries see the tioa2pvs manual. For additional details on setting up PVS Integration see the PVS manual supplement. Both of these documents are located in the documentation directory.

Enjoy!