Lab 3 -- Java Threads

1. Thread creation and execution

1. Build and implement the **`SimpleThread`** example from the lecture slides for week 3. Make sure that you understand the program. Modify the example so that the **`SimpleThread`** class implements **`Runnable`** rather than extends **`Thread`**. Get the program working in this way so that its behaviour is similar to the original program.
2. Work through the first four sections of the IBM tutorial at http://cgweb1.unn.ac.uk/SubjectAreaResources/CM637/j-threads/j-threads/ (The original tutorial material can be accessed from IBM at http://www-128.ibm.com/developerworks/edu/j-dw-javathread-i.html) In particular, you should do the following tasks:
    1. In the third section, 'A Thread's Life', build and run the example **`TwoThreads`** and observe the results. Make sure that you understand the program. Modify the program so that there is only one thread class which takes its two output characters as parameters. This class should not extend Thread but rather should implement Runnable. Get the program working in this way so that its behaviour is similar to the original program.
    2. In the same section, build and run the example **`TenThreads`**. You will need to provide your own implementation of **`getBigHairyMatrix()`**. Make sure that you understand the program. Modify the program so that it uses *twenty* threads instead of ten threads. Again, modify the program to use the *runnable object* approach rather than the *thread extension* approach. Get the program working in this way so that its behaviour is similar to the original program.
3. Work through sections 1, 3 and 4 of the Sun tutorial at http://java.sun.com/docs/books/tutorial/essential/threads/. Build and implement the examples. Make sure that you understand them. Make small modifications to each program to test your understanding.