V4 virtual machine

Homework guide

- Here you will play with a simulation of the Java Virtual Machine to give you further experience of the *fetch-decode-execute* cycle
- *V4-VirtualMachine* folder
    - Download ZIP file from Canvas: unzip, go into folder and run **startVM.bat**
- Read **simulator-guide.pdf**
    - Working data is stored and manipulated in the **Thread Memory**, which is divided into **local variables** and a **stack**
        - Local variables in which you can store values are the top 4 elements of the thread memory
        - Below that is the stack, which is where the machine instructions store temporary variables ie it acts like the example data registers A and B
    - Machine instructions are stored in the **Method Memory**
        - Codes are in hexadecimal: each digit corresponds to 4 bits in binary
    - Ignore the **Hash Memory**
- Step through example programmes:
    - (click browse to select the programme file and load it into memory; you can also open the file in a text editor, such as Notepad, to see all the machine code with comments)
    - **Add.txt**: adds 2 numbers
        - Modify this to load numbers from memory (local variables)
    - **Double.txt**: number*2
    - **Loop.txt**: work out what this does!