Viewing Memory and Register File (Arrays) in ModelSim
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Once you have started and **run** your simulation **using your .vhd files** (not .vho), you can check the updated contents of your RAM and Register File. Note you can check prior to running your simulation, but they will hold their starting values. A new tab will open in the "sim – Default" window as shown in Fig. 1. If not, you can get this tab by activating it in the View tab (Fig. 2).

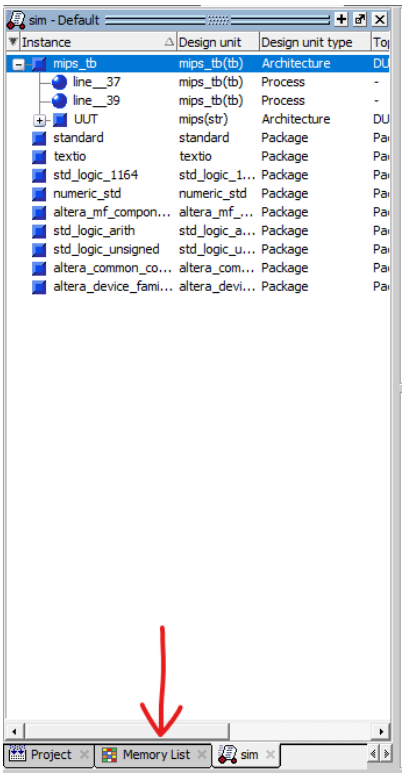

Figure 1: Default location of Memory List.

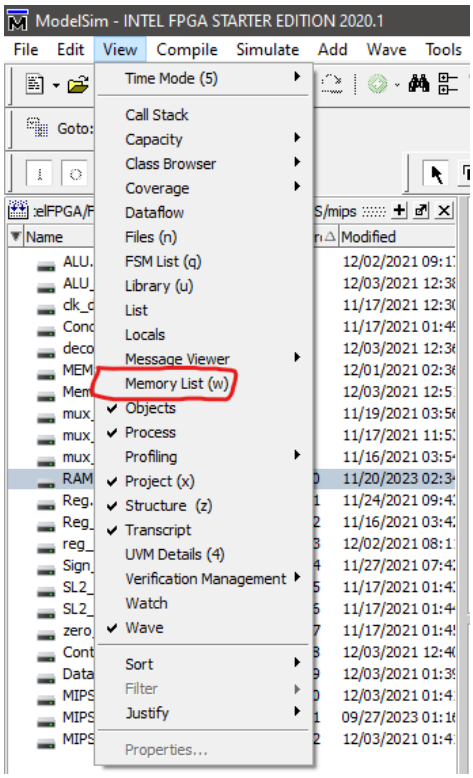

Figure 2: Where to get Memory List if not at default.

Clicking on the Memory List tab will result in a window shown in Fig. 3. This window lists all memory (specifically array) signals in your simulation. You can identify each by the Instance name given. Alternatively, you can identify each by the range listed, e.g., [255:0]. If you are using a Quartus IP, there may be extra options listed; these can be ignored.

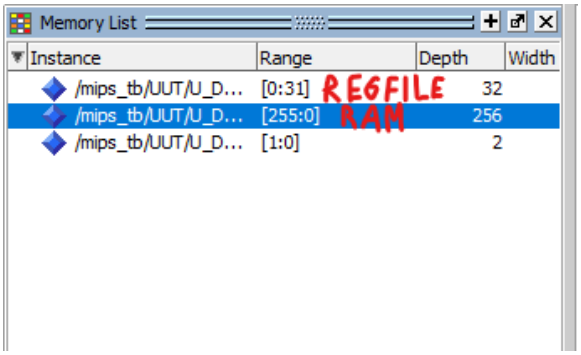

Figure 3: Memory List options, third option can be ignored (Quartus IP).

Opening the Register File (double-click), you will see something like in Figure 4. To make it easier to read, you can change the address and data radix, as shown in Figure 5.

Figure 4: Default view of register file.

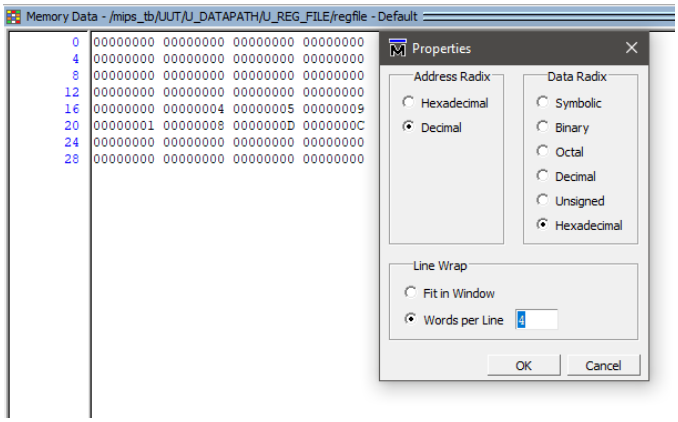

Figure 5: Changing Address and Data Radix for easier analysis of register file.

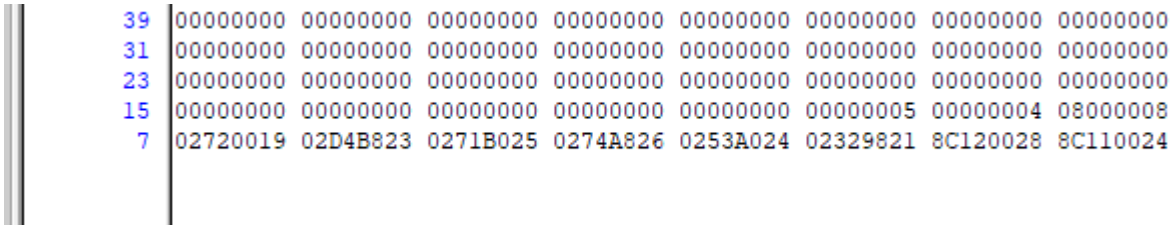

Figure 6: Same options selected for the RAM.

NOTES:

Pay attention to what direction the address increments. In the Register File image, the address increments from top left to bottom right. However, in the RAM image the address increments from bottom right to top left.