A ROM is a decoder that receives input in binary form and translates it to its decimal form and outputs that. It permanently writes data on a chip and lasts even after a computer is turned off. VHDL has several kinds of type conversion. To go between the std\_logic\_vector type and unsigned/signed you have to use type casting, but both signals have to have the same bit width. To go from signed/unsigned to integer, you need to use the to\_integer function call from numeric\_std. Finally, to go from std\_logic\_vector to integer, you need to use type casting. RAM is temporary memory where the computer stores data it needs to be able to retrieve quickly. When the computer is turned off the data is erased.