The VC5000 Assembly Language

The following is a summary of the assembly language for the VC5000. In class we will discuss the rational for the choices made here.

Statement Format:

An assembly language statement consists of from one to four fields. These are:

- Label - used to reference the statement. It is optional.
- Operation Code - a symbolic name for the number machine language op code.
- Register Number - a number between 0 and 9 indicating the register to be referenced. This is not required for the BRANCH, READ, WRITE and HALT instruction.
- Operand - Used to supply additional information. For a machine language instruction this a label.

Labels start in column 1, all other fields separated by commas, blanks and/or tabs. Comma may also be used as separators in that they look good for separating register from the operand. Allowing the commas to be separators anywhere in the statement will makes things easier for us.

Symbolic Operation Codes:

01 ADD	02 SUB	03 MULT	04 DIV	05 LOAD
06 STORE	07 READ	08 WRITE	09 B	10 BM
11 BZ	12 BP	13 HALT		

Symbols: (I.e. labels and operands)

Symbols are from 1 to 20 characters in length, the first of which is a letter and the remaining may be letters and digits.

Addresses:

An address my be specified by a label.

Assembler Language Instructions:

DC - define constant. The constant is a decimal integer placed in the operand field.

DS - define storage. The operand specifies the number of words of storage to be set aside.

ORG -define origin. The operand specifies the address at which the translation of the next instruction will be generated,

END – indicates that there are no additional statements to translate.

Comments:

Data after a ";" is a comment. Comments may appear anywhere within an instruction or by themselves. Blank lines are ignored.

Case Sensitivity

All symbols will be case sensitive. Operation codes may be written in upper or lower case or some combination of the two. So they are case insensitive.