

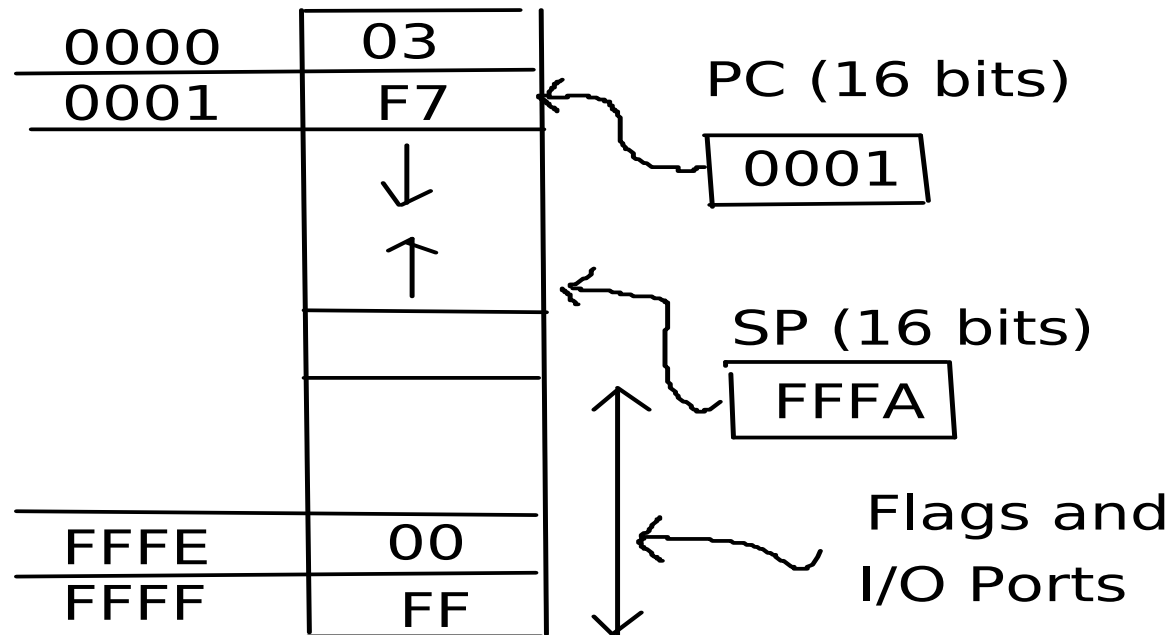
Computer Science CSCI 261

Computer Architecture and Assembly Language

*Dr. Peter Walsh
Department of Computer Science
Vancouver Island University
peter.walsh@viu.ca*

Memory Map

- Simple Single Board Computer (SSBC)
 - e.g. 8 bit data — 16 bit address space



Architecture Nomenclature

Machine language instructions consist of an opcode followed by zero or more operands or operand references.

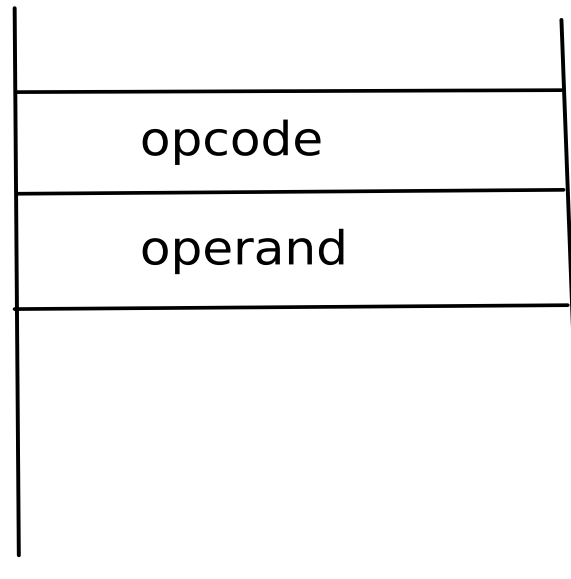
A mnemonic is a symbolic name for an opcode or group of opcodes.

The key question is where are the operands?

The addressing mode dictates how to calculate the effective operand address

Addressing Modes

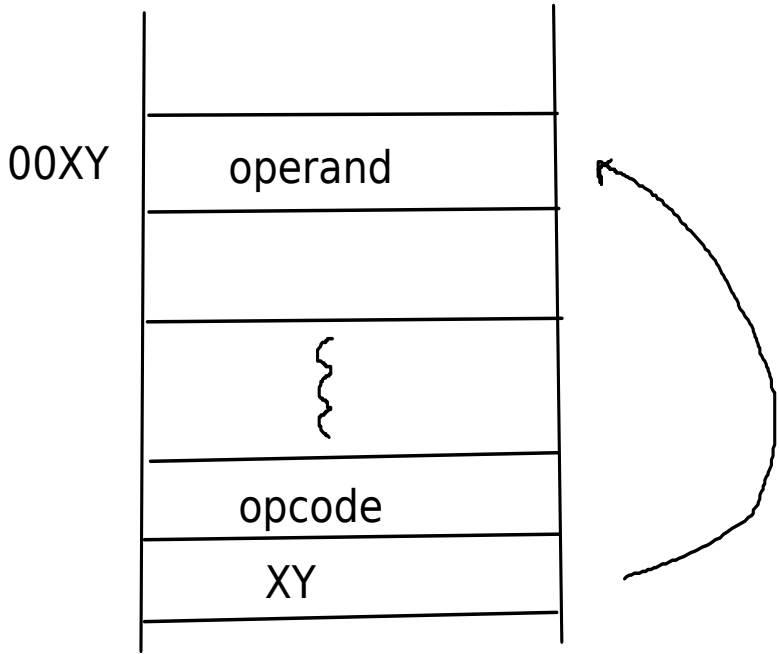
Immediate



Addressing Modes cont.

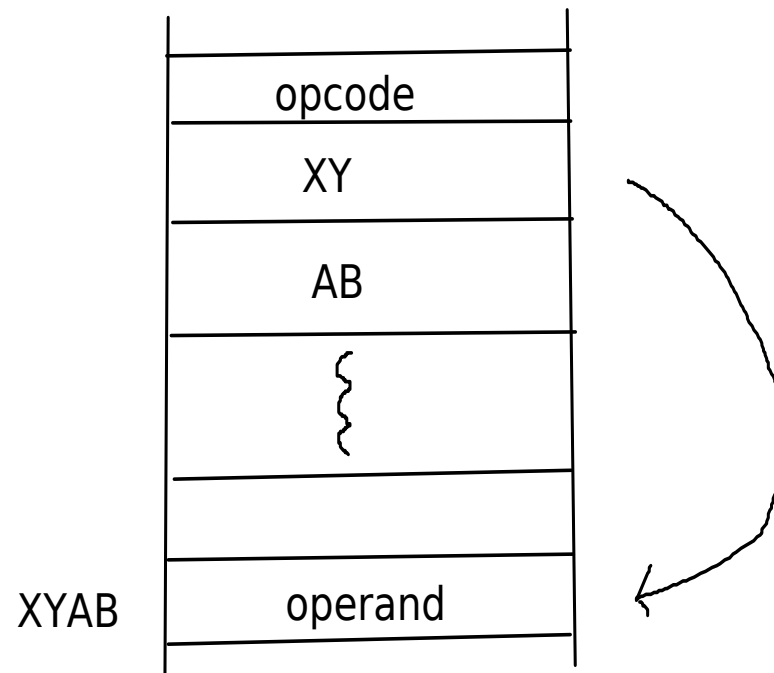
- Direct

- e.g. 8 bit data — 16 bit address space



Addressing Modes cont.

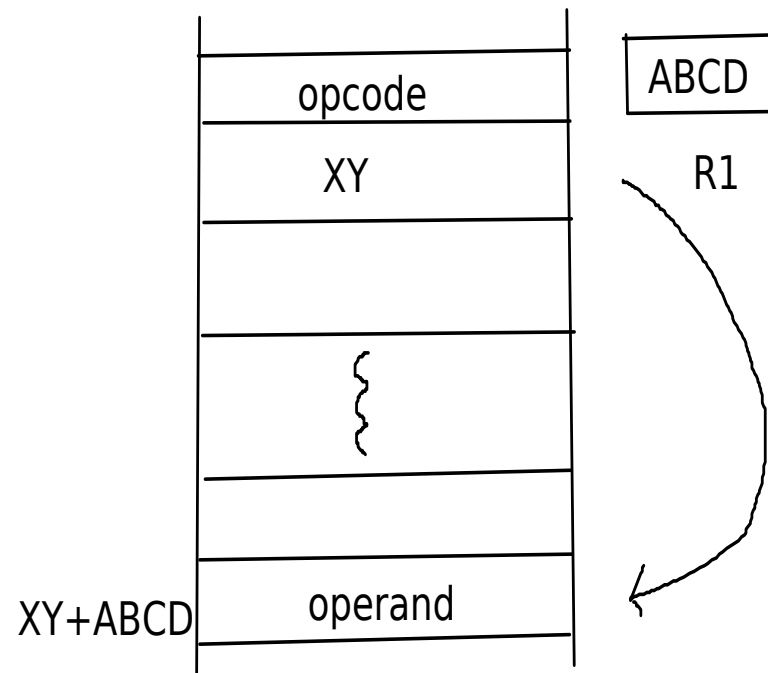
- Extended
 - e.g. 8 bit data — 16 bit address space



Addressing Modes cont.

- Indexed

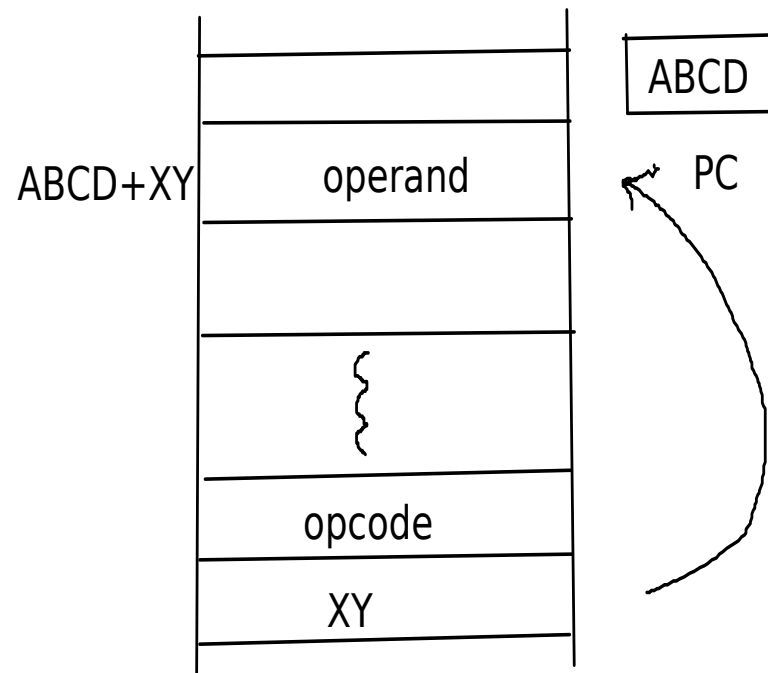
- e.g. 8 bit data — 16 bit address space



Addressing Modes cont.

○ Relative

- e.g. 8 bit data — 16 bit address space



Addressing Modes cont.

Inherent

