FIT 100 What You Have Done So Far

- Part I
  - A title for the website page
  - The bogus logo inserted somewhere near the title
  - The unmodified image
  - Paragraph 1: source of the image and your argument as to why you can alter it
  - Paragraph 2: true context of the image (what it really represents, unmodified)
  - Paragraph 3: "fictional" context of the image. Explain how you plan to alter it and use it so support the "storyline" of your website

Web Site of Misinformation (part1)

(Real title to be inserted for Part 2)

Paragraph 1 : Source of image and your proof /argument that you are able to modify the image ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

Paragraph 2 The true context of the image~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

Paragraph 3: How you will modify the image to give credibility to the "story" of your web site ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

Other sites that authenticate your site

-Give the links appropriate names!

- Link 1
- Link 2
- Link 3

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FIT 100 To do for Part II: Putting it all together and User Testing

- Modify the image
- Include text to support your modified image: create your "story"
- Use other formatting elements to make your site "look" credible- font size and color, graphics, background color, etc.
- Add an additional link to your email address and a link to your disclaimer page
- Create a copy of the page above (user testing page)
  - Remove the bogus logo
  - Show it to two friends, have them evaluate it based on the Assignment 3 criteria
- Create a second page (a disclaimer page) in which you:
  - Provide a disclaimer about quality of information presented on the main page
  - Reflect on the ethical issues surrounding accuracy, authority, credibility, etc of information on the Web
  - Write up the results of your user testing
  - Add a link to your main Misinformation page and to your user testing page

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Web Site of Misinformation:

A Plausible Title to match your content

Seattle, WA: In a press conference yesterday, ……………………………………… ……………………………………………

Sources close to the ….. ……………………………………… ……………

If you see ……… ……………………………………………………………………… …………… …… …… .

Contact Info (email)

Disclaimer

Link 1 Link 2 Link 3

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Disclaimer Page

Link to main

Misinformation page(s)

Link to user testing page

Disclaimer about the quality of any information found on this site ……………………………………………..

………………………………………………………………………

Your reflections on the ethical issues surrounding accuracy, credibility, authority, etc (all the criteria we discussed) when dealing with information on The Web……………………………………………………………

The results of your user testing ………………….

……………………………………………………….

………………………………………………………………….

A Plausible Title to match your content

Seattle, WA: In a press conference yesterday, Seattle Police Chief…………………………………………

……………………………………………………

Sources close to the …..

………………………………………………….

If you see ……… ……………………………………………………………………… …………….

………

……… .

Contact Info (email)

Disclaimer

Link 1 Link 2 Link 3

FIT 100 User Testing

- Show this web site to two individuals
- Using the criteria from Assignment 2, have each one evaluate your site
- Write a report of your results and add it to your disclaimer page

Computer Basics

FIT 100

Regardless of how much computers have changed over the last 50 years (think of our first lecture), they are still characterized by the same basic principles

FIT 100 Abstractly, A Computer Is…

- Computers process information by deterministically following instructions, called *executing* instructions
- Unlike humans, computers follows instructions *exactly*
  - Computers have no imagination or creativity
  - Computers have no intuition
  - Computers are literal: they have no sense of irony, subtlety, proportion…
  - Computers don't joke , they're not vindictive or cruel
  - Computers are not purposeful (they don't have their own changing agenda!)

…Computers execute instructions. Nothing more.

FIT 100 Remember this when you feel like screaming at your monitor….!

If a computer has any useful characteristics, it's because someone has programmed it –in other words, <u>given it the instructions</u> – to behave usefully

FIT 100 Interpreting the Instructions

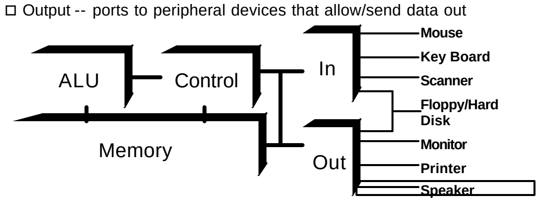
- To perform instructions, a computer's hardware implement a process called the *fetch/execute cycle*

<u>Fetch/Execute Cycle</u>
•Instruction Fetch (IF)
•Instruction Decode (ID)
•Data Fetch (DF)
•Instruction Execution (EX)
•Return Result (RR)

- The F/E Cycle is an unending process

FIT 100 Anatomy Of A Computer

- A computer is essentially made up of 5 components:
  - Arithmetic/Logic Unit (ALU) – the part doing computations
  - Control – the part that follows the Fetch/Execute Cycle of the program and tells the ALU what to compute
  - Memory – where data, programs are kept while computing
  - Input – ports to peripheral devices that allow/bring data in
  - Output -- ports to peripheral devices that allow/send data out



A simple example

- Suppose you have
  - A set of envelopes, each with a card in it
  - A number or an instruction can be written on each card
  - There are three kinds of instructions:

    ADD env# env# env#
    ASK env#
    SAY env#
    NEXT env#

A simple example

Envelope 1: ASK 15
Envelope 2: ASK 13
Envelope 3: ADD 15 13 10
Envelope 4: SAY 10
Envelope 5: NEXT 1
Envelope 10: ??
Envelope 13: ??
Envelope 15: ??

A simple example

Envelope 1: ASK 15
Envelope 2: ASK 13
Envelope 3: ADD 15 13 1
Envelope 4: SAY 10
Envelope 5: NEXT 1
Envelope 10: ??
Envelope 13: ??
Envelope 15: ??

Memory

- The memory component is passive, storing programs and data

address:	0	1	2	3	4	5	6	7
value:	M	J	i	s	!	23	2	3

byte

- Memory is like a series of “byte-size” boxes – each has an address and some contents called its value
- Memory is called RAM for “random access memory” because the control can access any random location in the memory
- RAM is volatile memory – it disappears when the power does

FIT 100 There always needs to be something in Control: Control Rules!

- The control follows through the instructions, executing them by telling other parts what to do
- The instructions come from the program stored in the memory

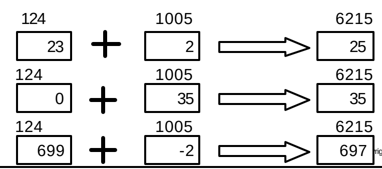
The instructions are in the end expressed in a *machine language,* which the control can understand. A typical machine instruction is

add 124, 1005, 6215

Which means "*add the number in memory location 124 To the number in memory location 1005 and put the result in memory location 6215*"

FIT 100 Just to be clear…

- The instruction add 124, 1005, 6215 does not add 124, 1005 and 6215 together. We can do that in our heads or with a calculator
- It simply adds whatever has been stored at those memory locations
- Different numbers in those locations produce different results: add 124, 1005, 6215



FIT 100 Following Instructions

- The control maintains the correct place in the program by using a program counter, or PC. A better name might be "instruction pointer".
- The control also prepares for data-fetches from and result-returns to the memory

PC: program counter, personal computer and printed circuit board

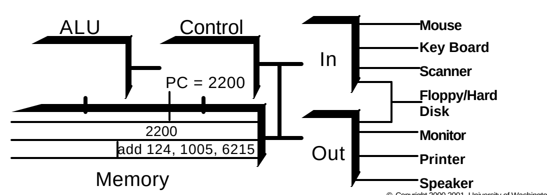
Memory

…	add 124, 1005, 6215	…

- Fetch instruction from memory at PC
- Decode the Instruction; PC← PC + 1
- Get Data needed for Instruction
- Execute (perform) instruction
- Return Result to Memory

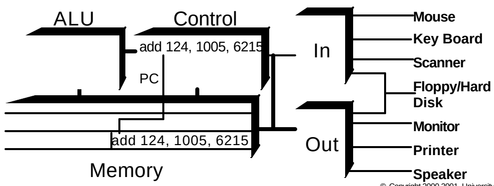
FIT 100 The Fetch/Execute Process

- Just before the Instruction Fetch….



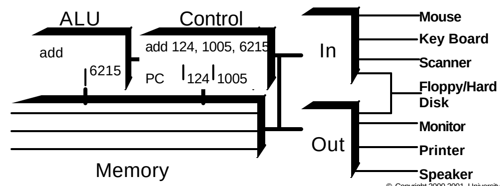
FIT 100 Instruction Fetch

- Get instruction at the memory location PC



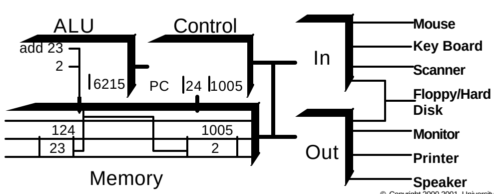
FIT 100 Instruction Decode

- Analyze Instruction and set up later steps
  - Specify the ALU operation (add)
  - Specify addresses to fetch (124, 1005) and to store (6215)



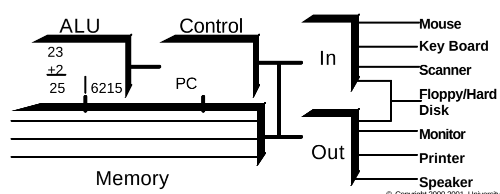
FIT 100 Data Fetch

- Move values stored at fetch–addresses to ALU for processing



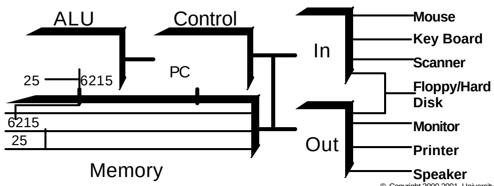
FIT 100 Execute

- The operation of the instruction (add) is performed



Result Return

- The result is returned to memory to the address specified in the instruction



The PC's PC

- After the instruction has been fetched and executed, the next instruction in sequence is fetched at PC +1
- This scheme should cause the computer to run through memory executing all instructions once and then "fall off the end of memory"
- Computers have machine instructions to branch and jump, i.e. go to some instruction other than the next
- Jump and Branch change the PC after increment
- Programs generally repeat many instructions

What's in a Number?

- A memory location can store one byte of information, enough for a keyboard character
- A "normal" whole number (integer) uses 4 bytes
- A machine instruction uses 4 bytes
- Units of memory size are …
  - KB, kilobyte, 1024 bytes … just over a thousand bytes, a "K"
  - MB, megabyte, 1,048,576 bytes … just over a million bytes, a meg
  - GB, gigabyte, 1, 073, 741, 824 bytes … just over a billion bytes, a "gig"
  - TB, terabyte, 1,099,511,627,776 bytes … just over a trillion bytes

Free Memory!

- Why do computers use such weird amounts to indicate 1000, 1 Million, etc?
  - These numbers are powers of 2

2^{10} = 1, 024	call it a thousand
2^{20} = 1,048,576	call it a million
2^{30} = 1, 073, 741, 824	call it a billion
2^{40} = 1,099,511,627,776	call it a trillion

- When you buy a megabyte of member, it's as if you get 48, 576 bytes for free!

Computational Time: The Pace of Computing

- Computers use electronic clocks to pace the Fetch/Execute Cycle
- If the computer goes around the F/E cycle once per tick, then the rate of the clock ("ticks/second") gives the number of instructions executed per second
- Hertz measures "cycles per second"
- 500MHz, specifies "500 million cycles per second"
- The reality is that the "one instructions per clock cycle" rule is only an approximation… modern computers are MUCH more complicated

Summary

- Computers deterministically execute instructions to process information
- Computers have five parts: ALU, Control, Memory, Input and Output
- The control implements a process called the Fetch/Execute Cycle
- The F/E cycles is a fundamental method of performing operations EXACTLY the same way specified, every time. This idea is used in many places in computation

For Monday

- Assignment 2 is due in your Monday/Tuesday lab
- Read Chapter 10 of FIT Course pack
- Lab 7 is the Introduction to Visual Basic
  - Read through the Lab
  - Read the Chapters suggested there.