

Announcements

- Pick up (and READ) syllabus if you have not already done so.
- Syllabus Confirmation "test" on UBLearns needs to be completed by 1/31/11.
- Note that readings and topics are starting to be posted the "Course Schedule" page of the course website.

Course Registration

- 503 students interested in attending an alternate recitation, please fill out form.
- A6 (Thursday 4:00 5:50) has been added and is available for registration. If you are interested in attending this recitation, please change your registration through MyUB.
- If you are interested in changing to another recitation and there are open seats, please change your registration through MyUB. If there are not open seats, please fill out form.
- If you are not yet registered for this class and need to be

 please see me after class.



How can we interpret the patterns? Ex) 10110 - Binary number (non-negative numbers) -Twos complement (integers) - IEEE 754 (approximate floating point numbers -Ascil

946 77 Tones $9x19^2 + 4x19' + 6x19^0$ $9x19^2 + 4x19' + 6x19^0$ 900 + 40 + 6 101102 16+4+2= x24+ 0x23+1x22+1x2'+0x2° 1×6+0×8+1×4+1×2+0×1

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Fun fact







Then

- We can put the rules (circuits, gates, physical parts) into the ALU [Arithmetic Logic Unit] which is one of the two main parts of the CPU [Central Processing Unit].
 - The other part of the CPU is registers, which are places to store data

Getting the computer to execute instructions

- We store instructions inside the memory.
- When we are ready to do something, we <u>fetch</u> an instruction from memory and load it into the registers.

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Programming a Computer

- We can write instructions to the computer in machine language (the native language of that particular machine), but this is difficult and time-consuming.
- So, early in computer programming history, we created assembly language.

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Assembly	langu	age:	
ADD STOR SUB	RI R3 K5	R2 R7 R6	
100			picture

Assembly Language

- Simple mnemonics that indicate the type of action to be performed.
- Low-level language
- There is a one-to-one correspondence between the lines of assembly language and the machine language for the particular machine.

Higher-level Languages

- Assembly language works well, but a need was recognized to make programming languages more like human languages, and higher-level languages were developed.
- Higher-level languages are more complicated than assembly language
- There is no one-to-one correspondence between one line of a higher-level language and machine language



Java
-Object-oriented programming language
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Object-wiented program: System of objects that work together to solve some problem.

Recall our demonstration

If I tell you	object 1, you should	object 2, you should	object 3, you should
START	Raise and lower your arms repeatedly	Start counting out loud, from zero (somewhat slowly) 0123	Do nothing
STOP	Put arms down and remain still	Stop counting, but remember where you left off	Do nothing
CONTINUE	Do nothing	Keep counting from where you left off	Do nothing
ANYTHING ELSE	Do nothing	Do nothing	Do nothing

Objects - Can do things - Maintain internal information (state) - We need a way to communicate with them

Objects Properties Gestwes that describe an object Capabilities Gactions that the object can perform

When we design an object-oriented program, westfocus on: - objects /identifying objects - relationships between objects

If we want to creat an object: (1) We need to know about the definition of an object that someone has already created (2) learn the Java code for creating an object

The Java code for creating an object ... - called an expression. GAn expression is a piece of code that when evaluated produces a result.

Ouestion • What is the result of executing the expression that creates an object? - an object (or arower) Technically correct: - a reference to an object

Creating objects Syntax: new, Name () need these -more on this prove poter

Tools for creating programo: /- Editor - place to type or programo -Compiler -translater - Runtime (Execution) Environment) Integrated Development Environment (IDE)

Using Eclipse











