cis1.5 introduction to computing using c++ (robotics applications) spring 2007 lecture # 1.1 introduction	<ul> <li>(0) introduction to the course</li> <li>about this course         <ul> <li>introduction to computer programming using the C++ language</li> <li>uses robotics as a <i>context</i> (i.e., the basis for examples and some of the lab exercises)</li> </ul> </li> </ul>
<ul> <li>topics:</li> <li>(0) introduction to the course</li> <li>(1) what is a computer?</li> <li>instructor:</li> <li>Prof Elizabeth Sklar, <i>sklar@sci.brooklyn.cuny.edu</i></li> </ul>	<ul> <li>the following topics will be covered in 6 units:</li> <li>(I) Data and Output</li> <li>(II) Control Structures and Input</li> <li>(III) Functions</li> <li>(IV) Arrays and Strings</li> <li>(V) Searching and Sorting</li> <li>(VI) Simple Classes</li> </ul>
<pre>course web page: • http://www.sci.brooklyn.cuny.edu/~sklar/cis1.5 cis1.5-spring2007-sklar-lecl.1 1</pre>	cis1.5-spring2007-sklar-lecl.1 2

(0) course structure

- 6 units
- each unit has:
  - 1-3 lectures
  - 2-3 labs
  - -1 assessment
- $\bullet$  the labs will be hands-on sessions using laptops in the classroom (5122 N)
- the assessments will be:
  - programming assignments
- your grade = 6 assessments (9% each) + attendance (6%) + two midterms (20%) + one file exam (20%)

- how to learn a programming language.
- YOU are responsible for your own learning!!!
- I will point you in the right direction...
- but YOU must PRACTICE, PRACTICE, PRACTICE...
- and PRACTICE some more!!!

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• if you don't understand, then ASK for help!

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## what is a program? which compiler? • a computer program is a set of instructions that tells the computer what to do • there are lots of C++ compilers and programming environments • in class, we'll use a free, open source integrated development environment (IDE) called • a *computer programmer* is a person who writes those instructions "Eclipse" (see http://www.eclipse.org — but we'll discuss this more in class next • there are many different programming languages that one can use to write computer time) programs in this class, we will learn C++ • with an IDE, you can *edit* your computer program's "source files" and then compile the source files into an executable application; and finally you can run the application • C++ is called a *high-level language* because: — it is kind of like English (no, really!) • you can use a different IDE if you want to... (we'll talk about this more later) - well, it is more like English than the low-level machine language that the computer • some of the other cis1.5 sections are using "Dev C++" and "CodeBlocks" understands • a *compiler* will translate a program from a high-level language into low-level machine language cis1.5-spring2007-sklar-lecl.1 cis1.5-spring2007-sklar-lecl.1 getting started. computer commands.

- programming is like solving puzzles
- think differently
- the world is now made up of objects and actions
- today's introductory topics:
  - computer basics

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our first program

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• computer follows commands commands = series of instructions

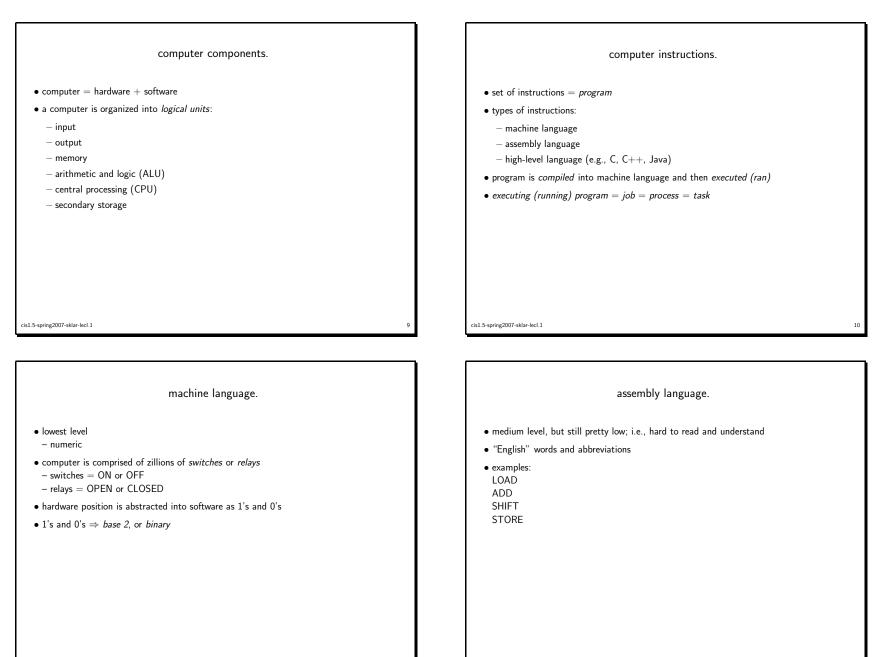
• you understand the commands,

but does the computer? that's a question of cognition...

• you will learn how to command a computer

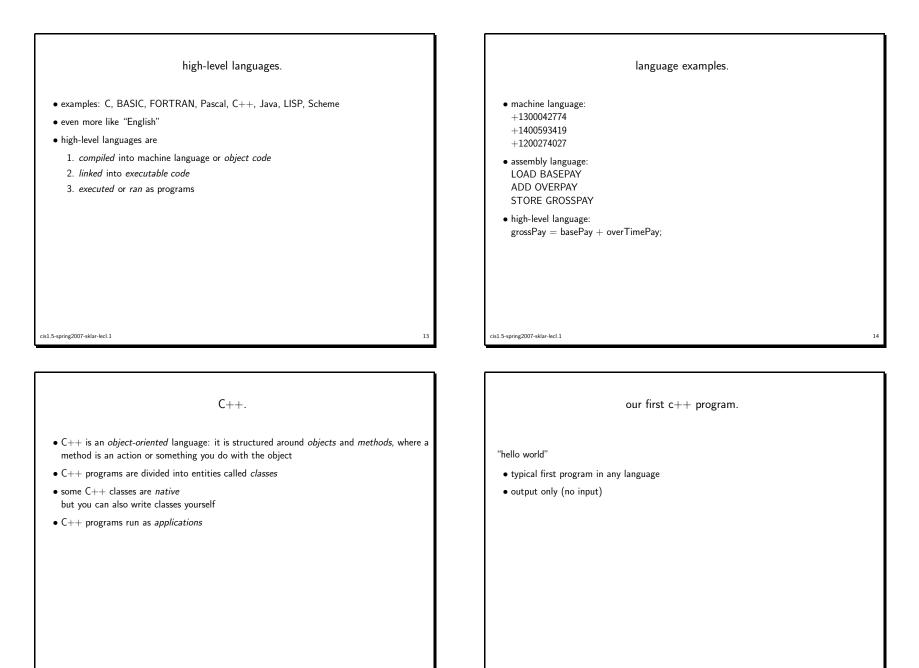
*command* = *program* = *write instructions* 

 $\rightarrow$  Artificial Intelligence, Cognitive Science



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the application source code.	to do.
<pre>file name = hello.cpp /* hello.cpp, 29jan07/sklar</pre>	<ul> <li>get a copy of the textbook!</li> <li> and start to read chapter 1</li> <li>check out the class web page: http://www.sci.brooklyn.cuny.edu/~sklar/cis1.5</li> </ul>
This class demonstrates output from a C++ application. 	
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about me. • undergrad: Barnard, CS major, class of 1985 • 10 years of industry experience working as a scientific and business programmer • grad school: Brandeis University, PhD 2000 • previous teaching: – Monash University, Melbourne, Australia – University of Melbourne, Melbourne, Australia – Boston College, Massachusetts - Columbia University, Fall 2001–Spring 2005 – Brooklyn College, Fall 2005– ... • research interests center around educational technologies: - artificial intelligence (AI) - educational robotics - interactive learning systems - multiagent simulation cis1.5-spring2007-sklar-lecl.1 19

about you.	
• please take out a piece of paper and write down	
1. your name	
2. your class and major OR if you are a non-matriculating student, categorize yourself	
3. your background in computers, if any	
4. why you are taking this course	
5. what you hope to get out of this course	
6. one sentence about one wonderful thing you did over the break	
<ul> <li>and give it to me before you leave</li> </ul>	
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