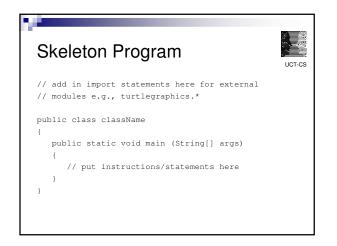
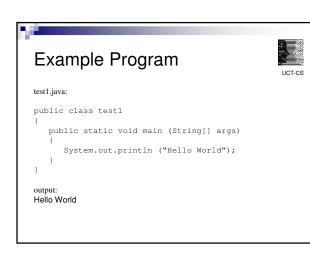


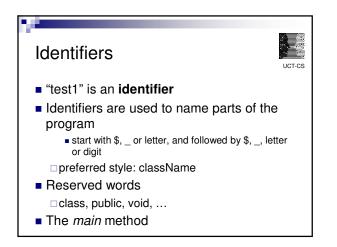
Problem

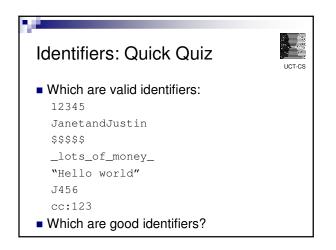


 Write a program to calculate the number of precious seconds you spend at lectures in a semester, assuming you have 5 lectures a day, lectures on 4 days a week, and there are 14 weeks in a semester.

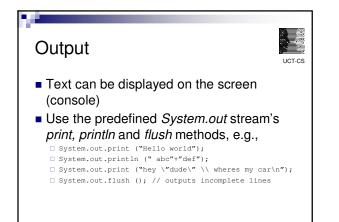


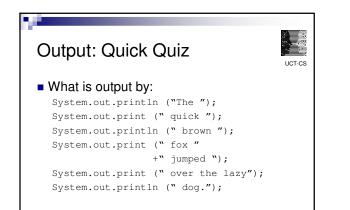


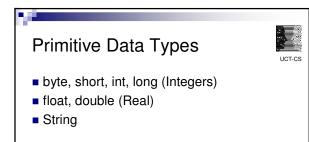


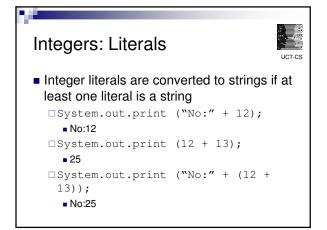


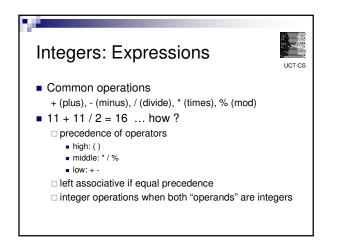


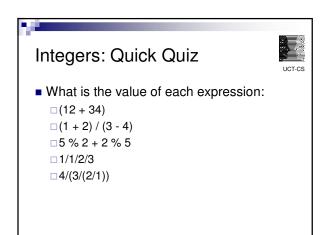






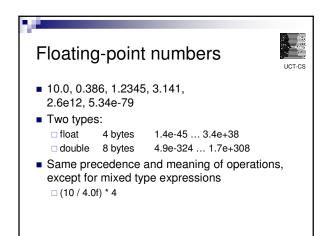


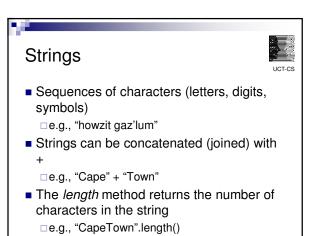




Integers: Types					
name	size	smallest	largest		
byte	1 byte	-128	127		
short	2 bytes	-32768	32767		
int	4 bytes	-2147483648	2147483647		
long	8 bytes	approx9*10 ¹⁸	approx. 9*10 ¹⁸		



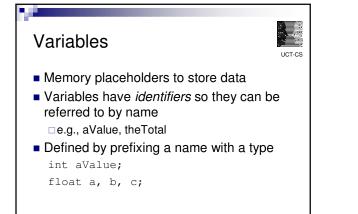


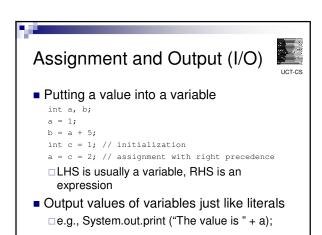


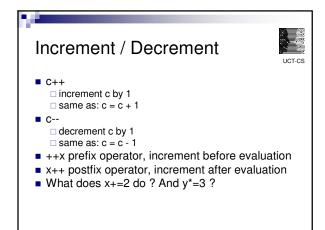
Problem Revisited

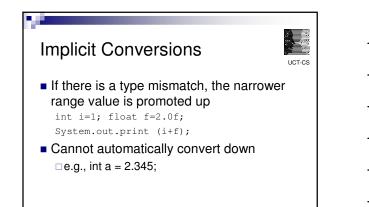


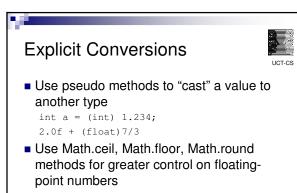
Write a program to calculate the number of precious seconds you spend at lectures in a semester, assuming you have 5 lectures a day, lectures on 4 days a week, and there are 14 weeks in a semester.











String.valueof (123)
 converts 123 to a String

Variables: Quick Quiz • What is the output of this code: int countA = 1, countB=2, countC=3; countA++; countB = ++countA + 2 + countC; countA = countC-- + countB / 4; countC = --countC - 1; System.out.print (countA+":"+countB+":"+countC);

Input In the second second

Input: Options



 Optional parameter for readInt will output a "prompt" string

 \Box e.g., readInt ("How many marbles have you:")

Keyboard also has methods for other primitive data types:

readDouble, readFloat, readShort, readLong, readByte, readString

Constants



- Like variables, but values cannot be changed after initialisation
- Prefix the data type with static final
 e.g., static final double Pi = 3.14159;
- Useful for fixed values used in many places in the program - one future change will affect all uses

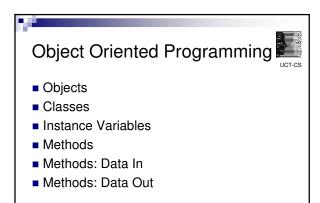
Problem



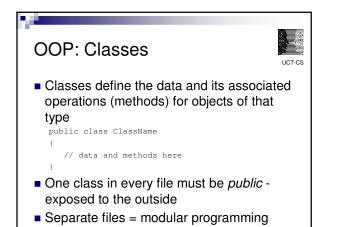
UCT-CS

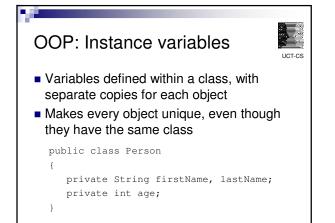
- Write a program to convert your age into dog years. Your program must ask for a human years number and then output the dog years equivalent.
 - □ The formula is: 10.5 dog years per human year for the first 2 years, then 4 dog years per human year for each year after.

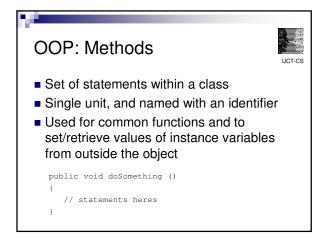
□ [source: http://www.onlineconversion.com/dogyears.htm] □ Now do it the other way around ... dog->human



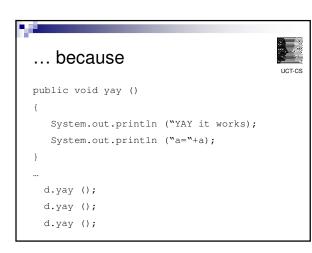


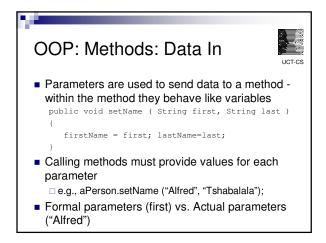


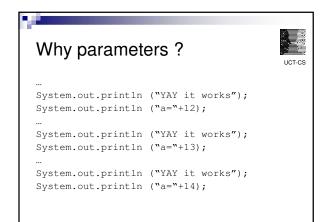


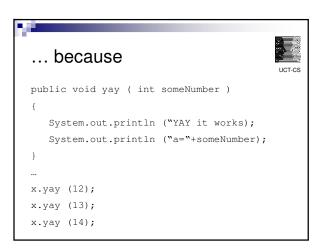


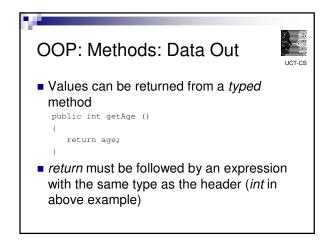
Why methods	?	UCT-CS
… System.out.println System.out.println		
… System.out.println System.out.println		
… System.out.println System.out.println		

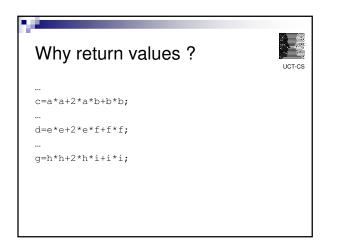


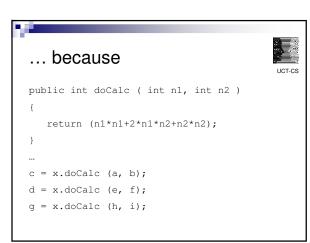


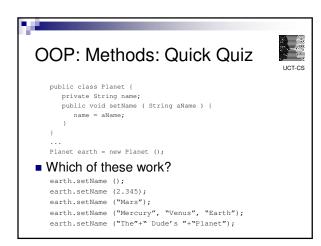












Classes and Methods



- Class defines the template for creating objects
- Methods are sets of statements defined within a class
 e.g., main
- To use a class, create an object of that type
 e.g., Turtle t = new Turtle ();
- To use a method, call it from its object with "dot" notation
 - □ e.g., t.move (400);

Local and Object Variables



- Local variables are defined within a method
- Instance variables are defined within a class, but outside any methods, and each object has its own copy
- Class variables are defined like instance variables, but prefixed with *static* - all objects then share the same data
- A variable has "scope" when it can be used and "lifetime" when it exists

Problem



- Write a numerology calculator using object-oriented programming. For any two given birthdates, calculate the compatibility between people as a simple 0-100 integer.
 - □Use any formula that makes sense.