

Announcements

- HW 1 released last Friday, due this Friday

<http://www.cs.uiuc.edu/class/sp10/cs173>

- Be sure to attend discussion sections, starting this week

Propositions

- Definition: A statement that is either true or false (but never both)
 - *Examples:* Urbana is in Illinois, $2 \neq 3$
 - Propositions cannot contain variables e.g., $x < 17$
- Propositional logic has some limited usage (especially in AI), but we'll soon upgrade to predicate logic (involving statements with variables)
- Complex propositions: not, and

p	not p ($\neg p$)
T	F
F	T

p	q	p and q ($p \wedge q$)
T	T	T
T	F	F
F	T	F
F	F	F

OR, XOR, Implication

p	q	$p \text{ or } q$ ($p \vee q$)
T	T	T
T	F	T
F	T	T
F	F	F

p	q	$p \text{ xor } q$ ($p \oplus q$)
T	T	F
T	F	T
F	T	T
F	F	F

p	q	$p \rightarrow q$
T	T	T
T	F	F
F	T	T
F	F	T

Converse, Biconditional, Contrapositive

p	q	$p \rightarrow q$
T	T	T
T	F	F
F	T	T
F	F	T

p	q	$q \rightarrow p$
T	T	T
T	F	T
F	T	F
F	F	T

p	q	$p \leftrightarrow q$
T	T	T
T	F	F
F	T	F
F	F	T

p	q	$\neg q \rightarrow \neg p$
T	T	T
T	F	F
F	T	T
F	F	T