Logical Connectives (Binary)

I – Conjunction

Informally: “and”
Symbols: $\wedge$ • &&

$A \wedge B$

These are called conjuncts.

The meaning of conjunction is expressed by this truth table:

A	**B**	**A $\wedge$ B**
T	T	T
T	F	F
F	T	F
F	F	F

A conjunction is true if and only if both conjuncts are true.

II – Disjunction

Informally: “or”
Symbols: $\vee$ ||

$A \vee B$

These are called disjuncts.

The meaning of disjunction is expressed by this truth table:

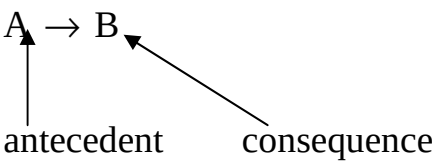
A	**B**	**A $\vee$ B**
T	T	T
T	F	T
F	T	T
F	F	F

A disjunction is true if either (or both) disjunct(s) are true.

III – Implication (Conditional)

Informally: “if – then”

Symbols: $\rightarrow$ $\supset$



A	**B**	**A → B**
T	T	T
T	F	F
F	T	T
F	F	T

An implication is false only if the antecedent is true and the consequence is false.

IV – Equivalence (Biconditional)

Informally: “if and only if” “iff”

Symbol $\leftrightarrow$

This connective is actually short hand for: $(A \rightarrow B) \wedge (B \rightarrow A)$

A	**B**	**A ↔ B**
T	T	T
T	F	F
F	T	F
F	F	T

Equivalence is true only if both sides are true or both sides are false.

Logical Connectives (Unary)

I – Negation

Informally: “not”

Symbol: ¬ ~ ' !

A	**~A**
T	F
F	T