Lecture 6. Logical Operators — Implication (Definition and Examples)

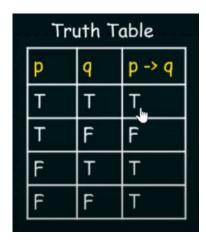
"Implication" 是一种逻辑运算符,通常用来表示条件语句或蕴含关系。在符号逻辑中,通常用符号 "→" 来表示蕴含,它表示如果前提条件为真,则结论也为真

Definition: Let p and q be proposition. The proposition "**if p then q**" denoted by $\mathbf{p} \to \mathbf{q}$ is called implication or conditional statement.

$A \rightarrow B$

A 是前提条件, B 是结论。蕴含关系的含义是: 如果 A 成立, 那么 B 也必须成立。如果 A 不成立, 那么 B 可以成立也可以不成立, 蕴含关系的真值表如下:

- 当 A 和 B 都为真时, 蕴含关系为真
- 当 A 为真而 B 为假时, 蕴含关系为假
- 当 A 为假时, 蕴含关系为真 (无论 B 的真值如何)



p is called hypoyhesis假设 (or premise前提) and q is called conclusion结论 (or consequence结果)

Homework Problem

Determine whether each of these conditional statements is True or False.

- 1. If 1 + 1 = 3, then dogs can fly.
- 2. If 1 + 1 = 2, then dogs can fly.
- 3. If monkeys can fly, then 1 + 1 = 3
- 4. If 1 + 1 = 2, then 2 + 2 = 5
- 5. If Delhi is the capital of India then Beijing is the capital of China.
- 1. FF, true
- 2. TF, false
- 3. F F, true
- 4. TF, false
- 5. TT, true