12/5(水) 제12강 Turing - Church's Thesis.

12/7(木) 마지막 강의 — 전산학 10:00 — 공동강연 (150)

12/12 기말고사

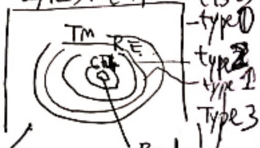
Computability

Turing Machine — computer

UTM = TM

μ-recursive partial function

Thm 4.2, Thm 4.3: primitive recursive function + minimization (μ)



Regular .on.

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최광무

Chap 9. Undecidability

recursive — no loop forever — always halt

A Language that is not R.E.
- Halting Problem
- Diagonalization Language L_d
- Power set of Integer
- Russel's (set) Paradox
- Gödel 의 Incompleteness Theorem

TM ... countable M_i $i \in N$ (numbering)

Σ^* .. countable $w_i \in \Sigma^*$ $i \in N$

(M_i, w_i) pair

$L_d = \{w_i \in \Sigma^* \mid w_i \notin L(M_i)\}$

Assume $L_d = L(M)$ 즉 L_d가 R.E.이라 가정.

$\exists i \in N$, $M = M_i$

모순이다 ∴ L_d는 R.E.이 아니다.

Self contradiction ... Denial of Self Recursion!

non R.E. ~ uncountable

consider $L_u = \{w_i \in \Sigma^* \mid w_i \in L(M_i)\}$

$L_d = \overline{L_u}$