Introduction to the 10th Protégé conference

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Since 20 years Protégé is a continuously developing tool for creating formal systems

But the story is much longer…

Ramón Lull (1235-1316)

- To find universal principles
- Automated generation of true statements

Leibnitz 1646-1716:

- Combinatorial concept representation
- To think will mean to count

II.

DISSERTATIO

DE ARTE COMBINATORIA,

CUM APPENDICE.

1666.

(Gottfredi Guilielmi Leibnüzii Lipsiensis Ars combinatoria, in qua ex Arithmeticae fundamentis Complicationum et Transpositionum doctrina novis praeceptis exstruitur, et usus ambarum per universum scientiarum orbem ostenditur, nova etiam artis Meditandi seu Logicae inventionis semina sparguntur. Praefixa est Synopsis totius Tractatus et additamenti loco Demonstratio Existentiae Dei ad Mathematicam certitudinem exacta. Lips 1666. 4to. — Leibn. Opp. ed. Dutens Tom. II. P. 1. p. 341).

SYNOPSIS.

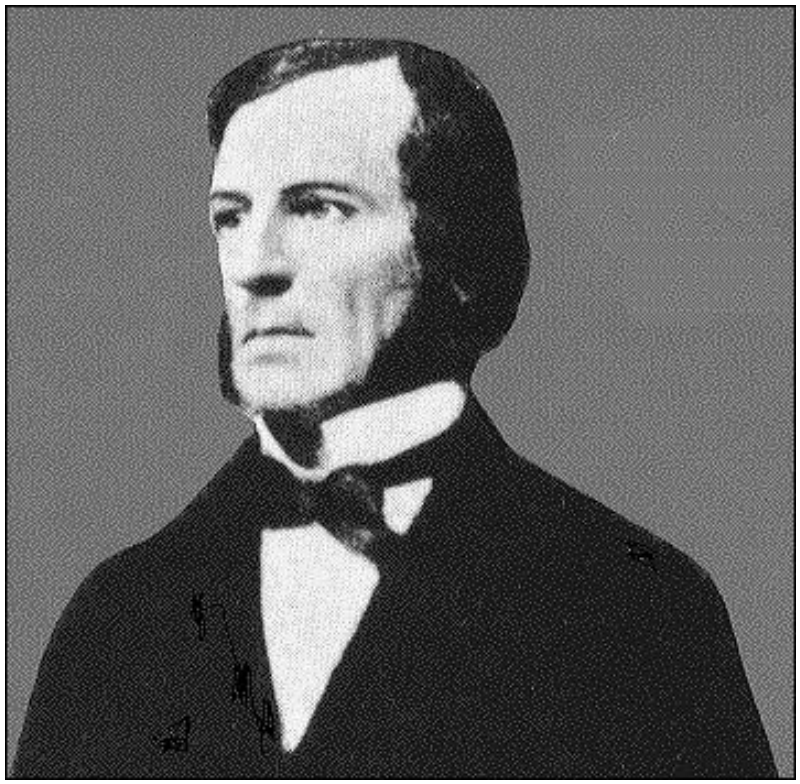
Sedes doctrinae istius Arithmetica. Hujus origo. Complexiones autem sunt Arithmeticae purae, situs figuratae. Definitiones novorum terminorum. Quid aliis debeamus. Problema I. dato numero et exponente complexiones et in specie combinationes invenire. Problema II. dato numero complexiones simpliciter invenire. Horum usus 1) in divisionis inveniendis speciebus: v. g. mandati, Elementorum, Numeri, Registrorum Organi Musici, modorum syllogismi categorici, qui in universum sunt 512. juxta Hospinianum, utiles 88 juxta nos. Novi Modi figurarum ex Hospiniano: Barbari, Celaro, Cesaro, Camestros; et nostri figurae IVtae Galenicae: Fresismo, Ditabis, Celanto, Colanto. Sturmii modi novi ex terminis infinitis, Daropti. Demonstratio conversionum. De complicationibus figurarum in Geometria, congruis, hiantibus, texturis. Ars casus formandi in Jurisprudentia. Theologia autem quasi species est Jurisprudentiae, de jure nempe publico in republica DEI super homines:

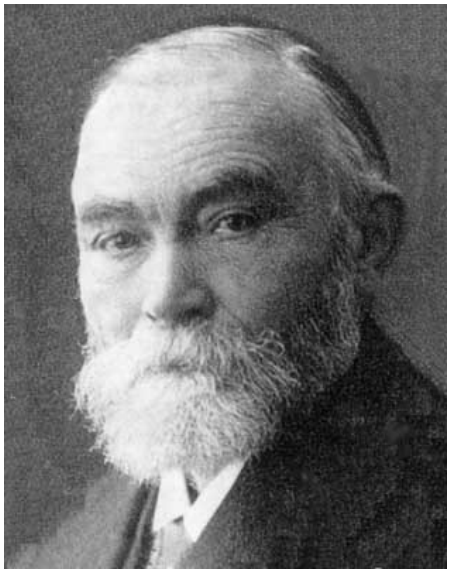
Leibniz proposed to assign prime numbers to elementary categories and express combinations by multiplying the corresponding primes. In this way syllogisms could be verified by dividing the codes. (For true statements the divisions must result in integers.)

George Boole (1815-1864)

Propositional logic

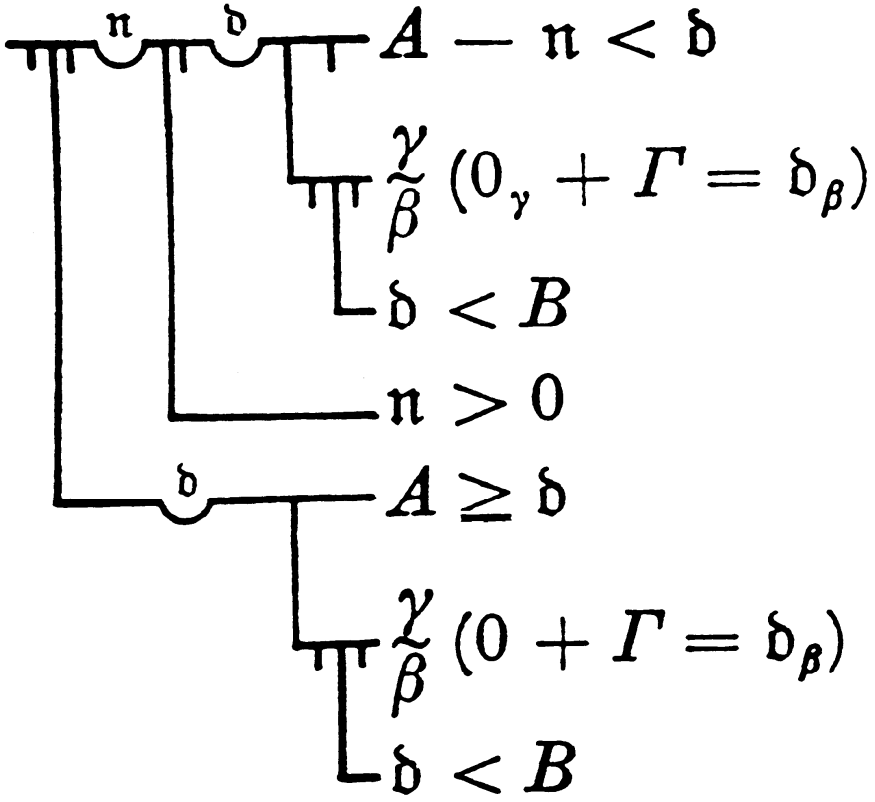
logical operations





Gottlob Frege (1848-1925)

Concept writing: First rigorous rules of formal representation (predicate logic)



Incompleteness theory

Kurt Gödel (1906-1978)

Any formal system is either weak (can not represent all sensible statements) or non-decidable (there must be statements that can not be either proven or falsify)

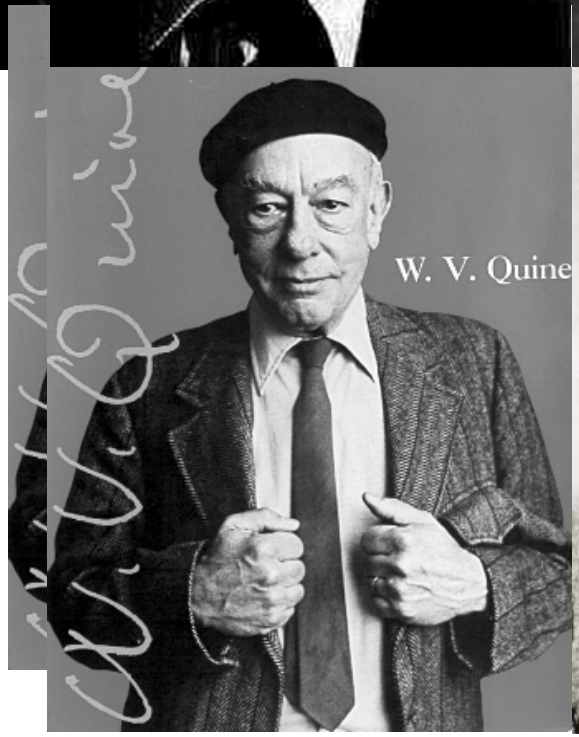
Stored digital programming

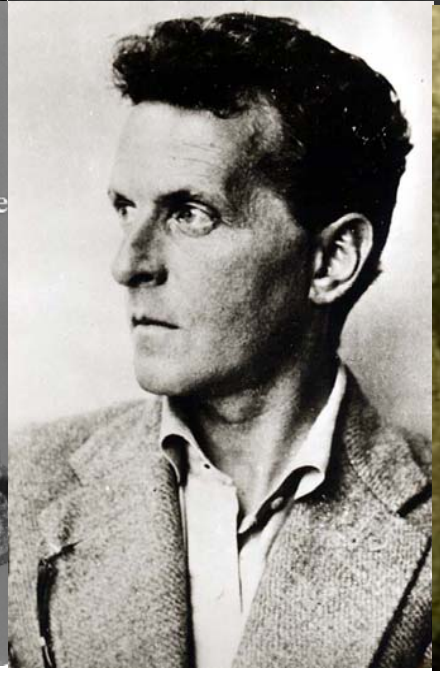
Was born in Budapest, V.

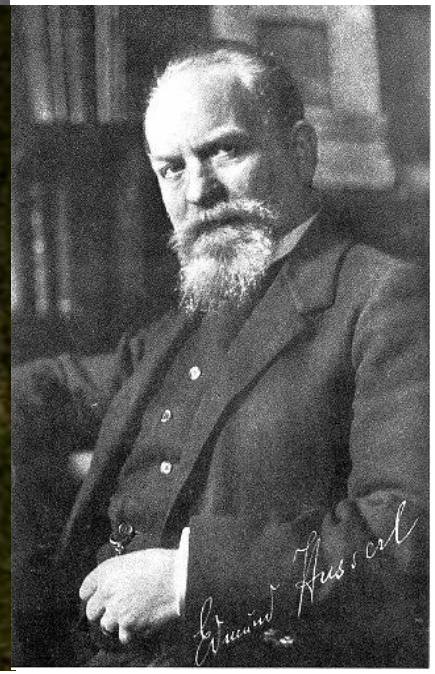
Bajcsy Zs. 62

"Stand on the shoulders of giants"

Charles Sanders Peirce.

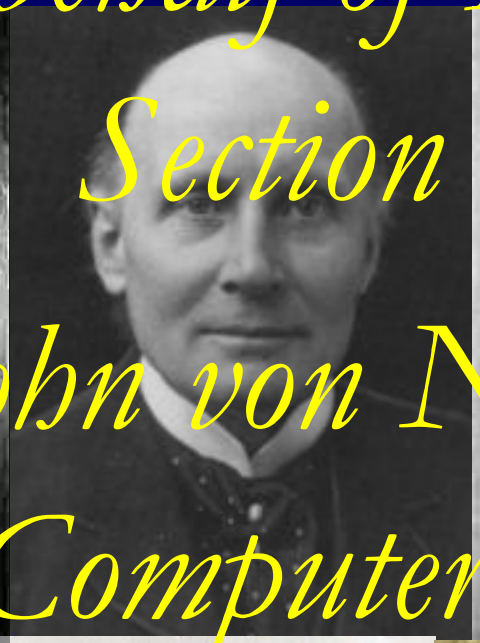


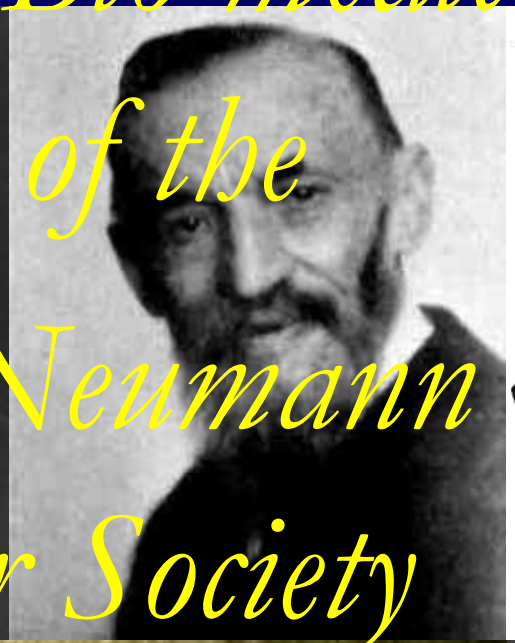


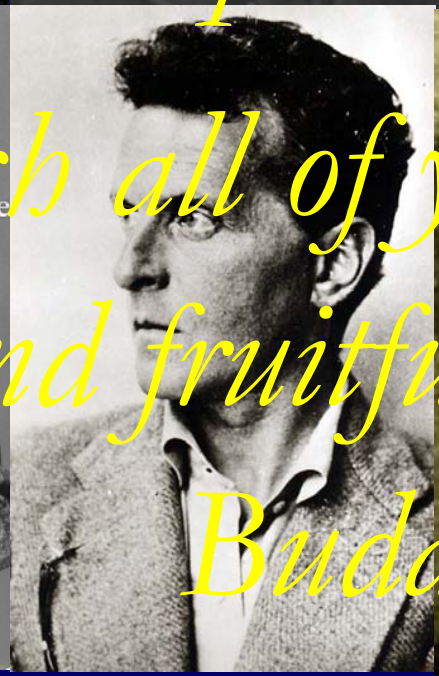


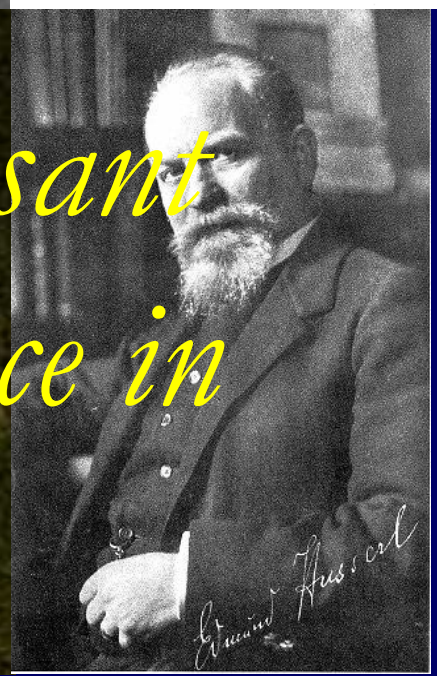
Quine Wittgenstein Saussure Husserl

On behalf of Bio-medical Section of the John von Neumann Computer Society









I whish all of you a pleasant stay and fruitful conference in Budapest