[ZF Theory + Scala + LLVM/JikesRVM → HOL + Kubernetes + IoT Informatics + HPC Systems R&D.Exploring HOL - Isabelle w.r.t LLVM & JikesRVM]

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[I] Introduction + Inspiration + Idea Derivation :

Zermelo–Fraenkel Set Theory →Process IoT Informatics Using Isabelle HOL Software/JikesRVM-Research Virtual Machine/KVM/Scala/Smart Devices/IoT/HPC R&D Heterogeneous Systems.

" Kubernetes is a portable, extensible, open-source platform for managing containerized workloads and services, that facilitates both declarative configuration and automation. It has a large, rapidly growing ecosystem. Kubernetes services, support, and tools are widely available."

[Source → https://kubernetes.io/docs/concepts/overview/_print/]

*"Isabelle is a generic proof assistant. It allows mathematical formulas to be expressed in a formal language and provides tools for proving those formulas in a logical calculus. The main application is the formalization of mathematical proofs and in particular formal verification, which includes proving the correctness of computer hardware or software and proving properties of computer languages and protocols.*The most widespread instance of Isabelle nowadays is *Isabelle/HOL*, which provides a higher-order logic theorem proving environment that is ready to use for big applications.*Isabelle/HOL* includes powerful specification tools, e.g.for (co)datatypes, (co)inductive definitions and recursive functions with complex pattern matching.Proofs are conducted in the structured proof language *Isar*, allowing for proof text naturally understandable for both humans *and* computers".

Ref/s:

[1] http://isabelle.in.tum.de/overview.html

[2] http://www.cl.cam.ac.uk/research/hvg/Isabelle/index.html

[3] http://mirror.cse.unsw.edu.au/pub/isabelle/overview.html

Our Short Technical Notes on Vixra.org :

[4] An Insight into HOL-Isabelle/Coq Theorem Provers based Design of Algorithms Using [Minsky Machines+Scala NLP/Scala/Akka/JikesRVM-Research Virtual Machine/JVM/LLVM] in the Context of Electronic Health Record [EHR] Software R&D – A Simple Suggestion. **[Source – [a] https://vixra.org/abs/1909.0490]/ [b] https://github.com/tejdnk-2019-ShortNotes**

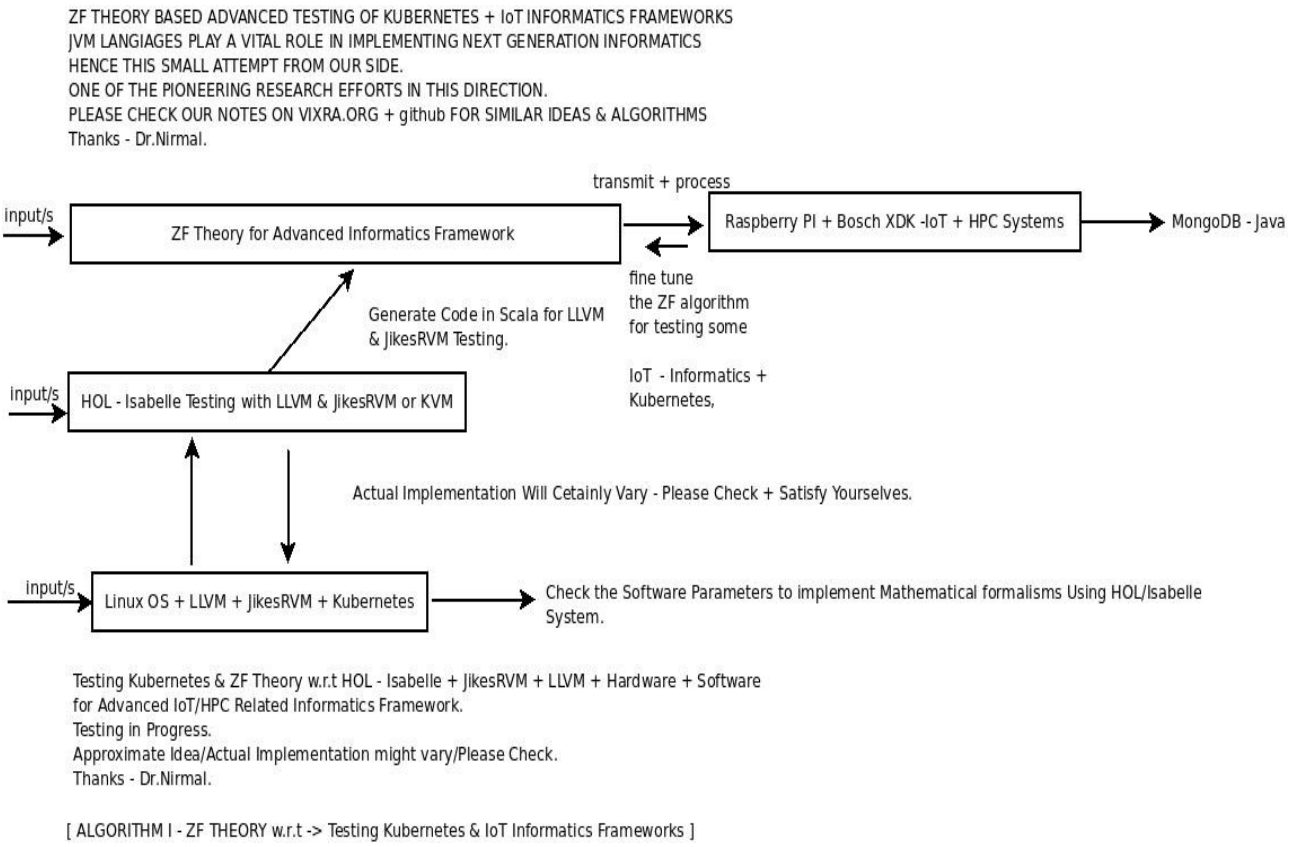
[5] **The algebraic structure of interfaces** → Science of Computer Programming 49 (2003) 47 – 88 → [doi:10.1016/j.scico.2003.04.001]

[6] LLVM → https://llvm.org/

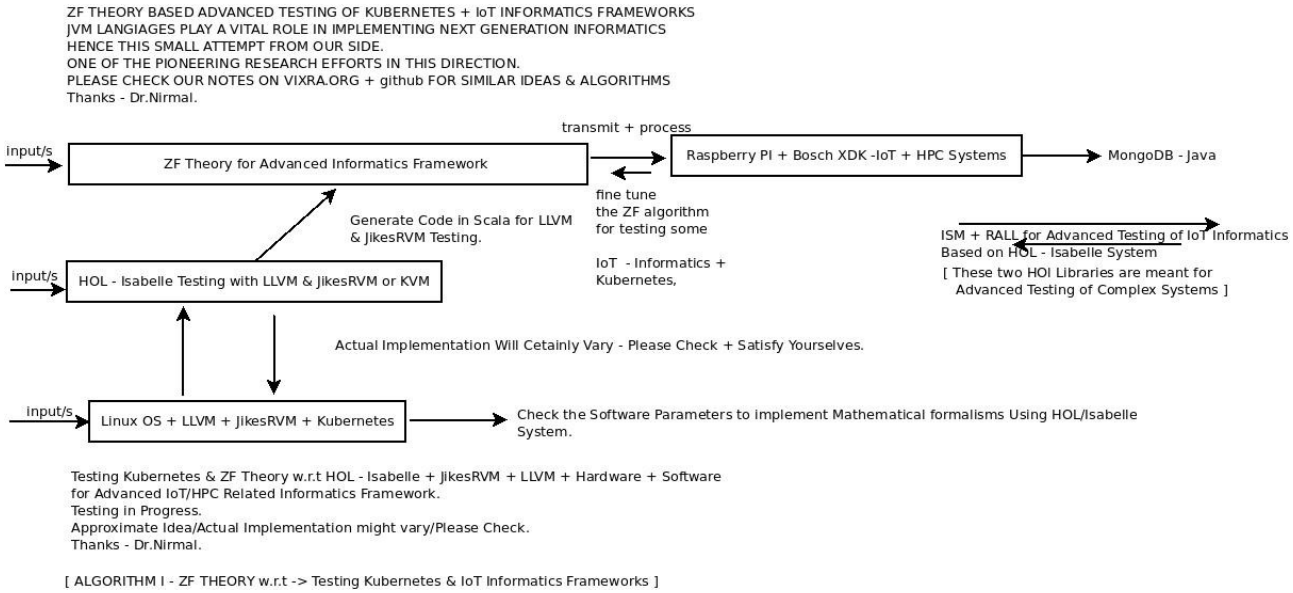
[7] JikesRVM → https://www.jikesrvm.org/

[8] https://en.wikipedia.org/w/index.php?title=Zermelo%E2%80%93Fraenkel_set_theory&oldid=1005389352

[II] HOL Informatics Framework Using Specified Tools w.r.t LLVM + RVM :



[Figure I – Algorithm I – Simple Informatics Testing Framework]



[Figure II – Algorithm II – Simple Informatics Testing Framework]

** Formalising Ruby in Isabelle ZF by Ole Rasmussen August 1995 → Highly Useful.

[III] Acknowledgments: Sincere Thanks to all WHO made this happen in my LIFE.
Non-Profit R&D. Inspire Others Always.

[THE END]