Exploring [Spring Tools 4 for Eclipse/JamVM/[Prolog Development Tool - PDT](#)] in the Context of Prolog/Palladio Studio/IoT/HPC Heterogeneous Systems & Environments – A Simple Understanding of JamVM [Java Virtual Machine] interaction With Spring Boot Framework.

Nirmal Tej Kumar

Senior Researcher   Informatics/Imaging/Photonics/AI/HPC R&D.
 R&D Collaborator   USA/UK/Israel/BRICS Group of Nations.
 Current Member   ante Inst,UTD,Dallas,TX,USA.
     Contact_info   hmfg2014@gmail.com

[I] Inspiration + Introduction :

[A]   "Spring Boot is a rapid application development platform built on top of the popular Spring Framework."
      [Source – https://www.vogella.com/tutorials/SpringBoot/article.html]

"**Spring Tools 4** is the next generation of Spring tooling for your favorite coding environment. Largely rebuilt from scratch, it provides world-class support for developing Spring-based enterprise applications, whether you prefer Eclipse, Visual Studio Code, or Theia IDE. " [Source – https://spring.io/tools]

"Should I use a 32- or a 64-bit JVM ? "– Let us explore different JVMs – it useful in Java based Software R&D.
      [Source – https://dzone.com/articles/should-i-use-32-or-64-bit-jvm]

https://javainterviewpoint.com/spring-boot-hello-world-example-eclipse/

[B] *** " **Jikes RVM (Research Virtual Machine)** – provides a flexible open testbed to prototype virtual machine technologies and experiment with a large variety of design alternatives. The system is licensed under the EPL, an OSI approved license. Jikes RVM runs on IA32 32 bit (64 bit support is work in progress) and PowerPC (big endian only). "
[Source – https://github.com/JikesRVM/JikesRVM]

[C] *** "**JamVM** – is an open-source Java Virtual Machine (JVM) developed to be extremely small compared with other virtual machines (VMs) while conforming to the Java virtual machine specification version 2 (blue book). JamVM can be configured to use the GNU Classpath or the OpenJDK Java class library and recent versions support object finalization, Soft/Weak/Phantom References, the Java Native Interface (JNI) and the Reflection API.

The compacting garbage collector can run either synchronously or asynchronously within its own thread."

***   "JamVM currently supports the CPUs: AMD64, ARM, x86, MIPS, PowerPC and SPARC."
***   **https://web.archive.org/web/20080830021413/http://bugblogger.com/java-vms-compared-160/**
***   http://jamvm.sourceforge.net/

[D] Some of Our Technical Notes (((via))) Vixra.org :

    [a] http://www.vixra.org/author/nirmal_tej_kumar && [b] http://www.vixra.org/author/d_n_t_kumar

    [c] http://www.vixra.org/author/n_t_kumar   && [d] http://www.vixra.org/author/nirmal

[E] Some Information on Prolog/PDT –

  [a] [Prolog Development Tool – PDT](#) – **&&** **[b]** [Prolog Development Tools – ProDT](#) –

      [Source – https://www.swi-prolog.org/IDE.html]

  [b] *www.**jiprolog**.com* – **Java based Prolog**

[F] Information on Palladio Simulator – Software Architecture R&D –

https://www.palladio-simulator.com/tools/ – "Palladio is a software architecture simulation approach which analyses your software at the model level for performance bottlenecks, scalability issues, reliability threats, and allows for a subsequent optimisation. Palladio requires neither buying expensive executions environments (servers, networks, or storage) nor fully implementing a software product. Construction rules are automatically checked by Palladio and thus allow optimal software architectures without costly trial-and-error-cycles. Like in other engineering disciplines, Palladio enables software engineers to construct software straight and in the right way. "

[G] Mongo DB With Java – "The **MongoDB Java** reactive streams driver. Why **Java** and **MongoDB**? **Java** is the most popular language in the IT industry at the date of this blog post, and developers voted **MongoDB** as their most wanted database four years in a row."
[Source – *https://www.**mongodb**.com/blog/post/quick-start-**java**-and-**mongodb**--starting-and-setup*]
[Source – https://www.baeldung.com/java-mongodb]
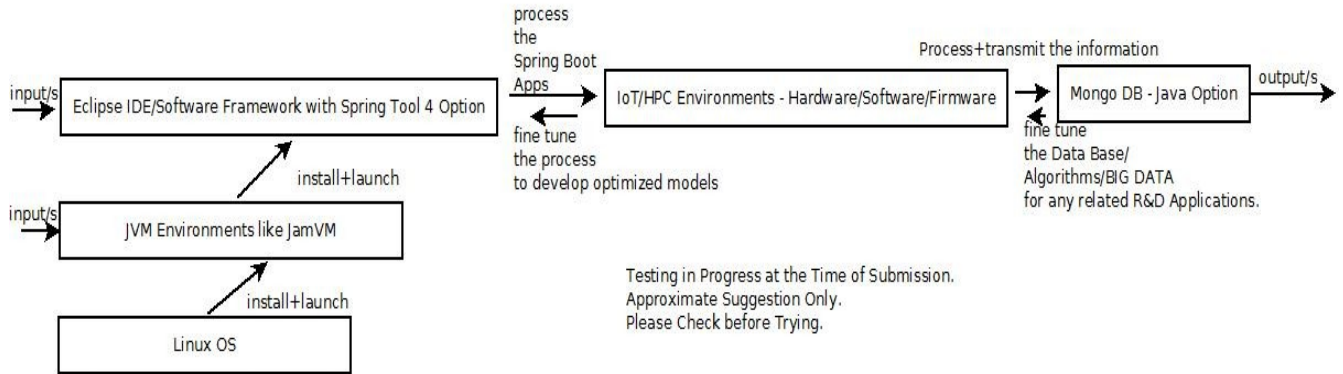[Source –https://www.mongodb.com/blog/post/getting-started-with-mongodb-and-java-part-i]

[H] BaseX –XML Data Base System – "BaseX is a robust, high-performance XML database engine and a highly compliant XQuery 3.1 processor with full support of the W3C Update and Full Text extensions. It serves as excellent framework for building complex data-intensive web applications. It comes with interactive user interfaces (desktop, web-based) that give you great insight into your data ". [Source – http://www.basex.org/]

Please Make a Note – **Here, we are experimenting only with MongoDB. Readers are requested to try BaseX DB for further R&D.**

[II] Java based Informatics Framework for our R&D Spring Tools 4 for Eclipse/JamVM :

ALGORITHM I - ADVANCED INFORMATICS FRAMEWORK FOR NEXT GENERATION SOFTWARE R&D

process
the
Spring Boot
Apps

input/s → **Eclipse IDE/Software Framework with Spring Tool 4 Option**

fine tune
the process
to develop optimized models

Process+transmit the information

IoT/HPC Environments - Hardware/Software/Firmware

Mongo DB - Java Option → output/s

fine tune
the Data Base/
Algorithms/BIG DATA
for any related R&D Applications.

install+launch

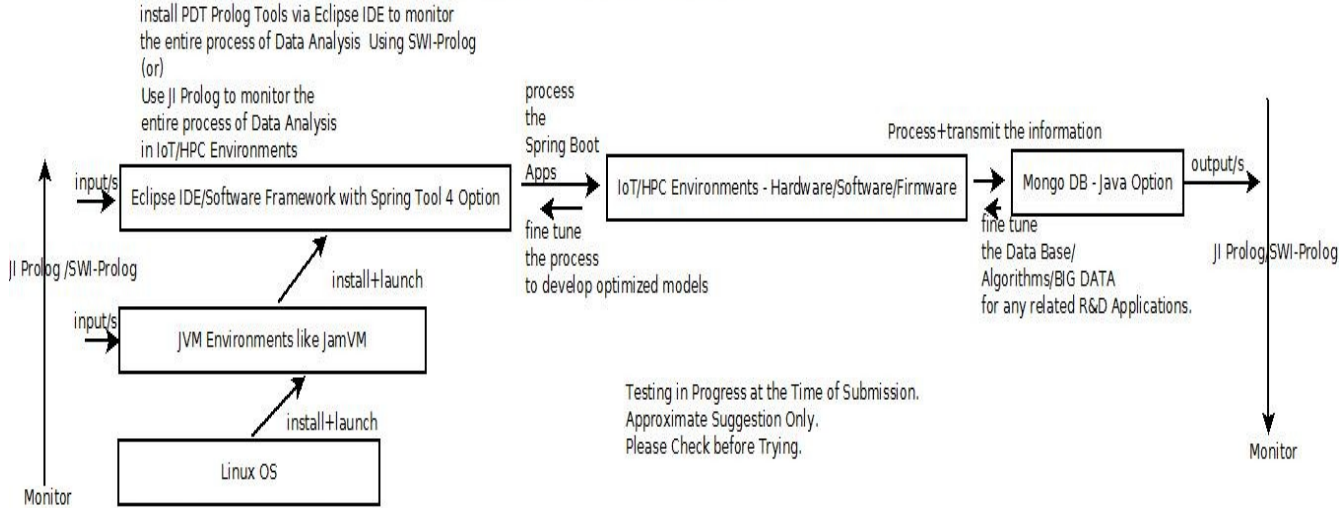input/s → **JVM Environments like JamVM**

install+launch

Linux OS

Testing in Progress at the Time of Submission.
Approximate Suggestion Only.
Please Check before Trying.

SIMPLE SUGGESTION IN THE CONTEXT OF SPRING TOOL 4ECLIPSE/JVM/JAM VM/IoT/HPC -HETEROGENEOUS ENVIRONMENTS.
PLEASE CHECK & SATISFY YOURSELVES.
EXPLORING JVMs IS AN EXCELLENT IT RELATED TOPIC Involving IoT/HPC Systems.
Rapid Application Development (RAD) is of high importance these days.
Spring Boot is a Spring module which provides RAD (Rapid Application Development) feature to Spring framework.
Thanks - Dr.Nirmal

[Figure I – Algorithm I – Next Generation RAD Software R&D Framework involving Java/JVMs   ]
Already we have presented lot of Java based Informatics Frameworks–Please Check.
We did Software Architecture Modeling with Eclipse Palladio Studio.

ALGORITHM I - ADVANCED INFORMATICS FRAMEWORK FOR NEXT GENERATION SOFTWARE R&D

install PDT Prolog Tools via Eclipse IDE to monitor
the entire process of Data Analysis Using SWI-Prolog
(or)
Use JI Prolog to monitor the
entire process of Data Analysis
in IoT/HPC Environments

process
the
Spring Boot
Apps

Process+transmit the information

input/s → **Eclipse IDE/Software Framework with Spring Tool 4 Option**

JI Prolog /SWI-Prolog

fine tune
the process
to develop optimized models

IoT/HPC Environments - Hardware/Software/Firmware

Mongo DB - Java Option → output/s

fine tune
the Data Base/
Algorithms/BIG DATA
for any related R&D Applications.

JI Prolog,SWI-Prolog

install+launch

input/s → **JVM Environments like JamVM**

install+launch

Linux OS

Monitor

Testing in Progress at the Time of Submission.
Approximate Suggestion Only.
Please Check before Trying.

Monitor

SIMPLE SUGGESTION IN THE CONTEXT OF SPRING TOOL 4ECLIPSE/JVM/JAM VM/IoT/HPC -HETEROGENEOUS ENVIRONMENTS.
PLEASE CHECK & SATISFY YOURSELVES.
EXPLORING JVMs IS AN EXCELLENT IT RELATED TOPIC Involving IoT/HPC Systems.
Rapid Application Development (RAD) is of high importance these days.
Spring Boot is a Spring module which provides RAD (Rapid Application Development) feature to Spring framework.
Thanks - Dr.Nirmal

[Figure II – Algorithm II – Next Generation RAD Software R&D Framework involving Java/JVMs/PDT   ]
Already we have presented lot of Java based Informatics Frameworks–Please Check.
** Modified Algorithm I.

[III] Acknowledgment/s :

[THE END]