Presently, web applications are a really important part of life. On a day to day basis, from managing our health care choices to banking, to connecting to a friend, almost everything is done through a web application. Development of these applications is also a very trend driven domain. Numerous web frameworks are made available to us today, but almost none has been created taking reliability into consideration. With the combination of application construction recipes and static analysis, the Verily framework was created to build more reliable web applications. On the other hand, the goal of Java Modeling Language (JML) has to be conveyed to the masses.

JML is a modeling language which can go hand in hand with existing code, having a wide range of tools that help build practical and effective designs. There are many tools available for the same, jmldoc for web pages, jmlunit for unit tests, jmlc for class files etc. I will be using these tools for Runtime Assertion Checking (RAC) and Extended Static Checking (ESC). These checks warn about the likely runtime/static exceptions and violations. The benefits of JML assert statements over Java Assert Statements is it supports all JML features. The question that I was concerned with, in my thesis, was how the Verily Framework could contribute to the domain of web application development. Keeping this question in mind, my objectives were to create a tutorial which will aid in learning about JML, by letting them read and write JML specifications and use JML tools, explain basic JML semantics and let them know where to go for help if they needed more details.

Major: Computer Science

Educational Career:
Bachelor's of Computer Science, BS, 2012, Visveswaraya Technological University - India

Committee in Charge:
Gary Leavens, Chair, Computer Science
Damla Turgut, Computer Science
Damian Dechev, Computer Science

Approved for distribution by Gary Leavens, Committee Chair, on June 7, 2016.

The public is welcome to attend.