Formal methods of web-development

It is said that many of the bugs in an application are seen due lack of proper understanding of its requirements. Meeting the requirements is a tough task as there is a need to understand them and their relations. Also there may be new requirements to be added from every meeting with the client. Seeing that the newly added requirements do not break the constraints imposed by the previous requirements can be a tricky job. Moreover these new requirements can form an exceptional scenario which could be missed by the developer. But modelling our app in a specification language like Alloy helps us to check the above constraints before writing the real code. This is helps in writing the real code without any doubts or making changes whenever we find an error.

An application should be flexible, it should not restrict us to do only one operation at a time. In order to achieve pipelining in our application, the code written should be used for various operations. Here comes Modular Programming. Modular programming is a technique where the code is written in different modules where each module is independent and works on its own. To perform an operation, these modules should be called in a particular order which forms a workflow. The figure shows the workflow of an application which consists of 2 components, the guard, which checks the correctness of the instruction that is to be performed and the engine which does the actual operation.

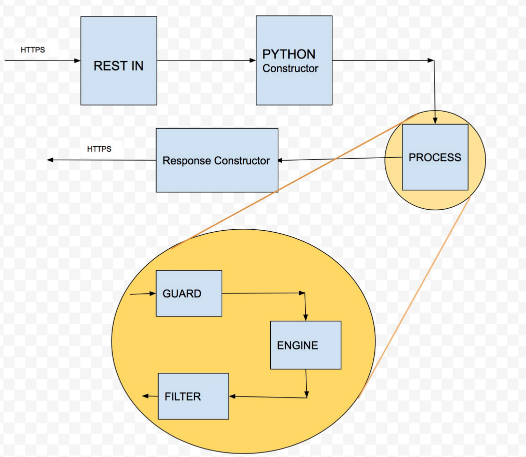

Figure 1

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