

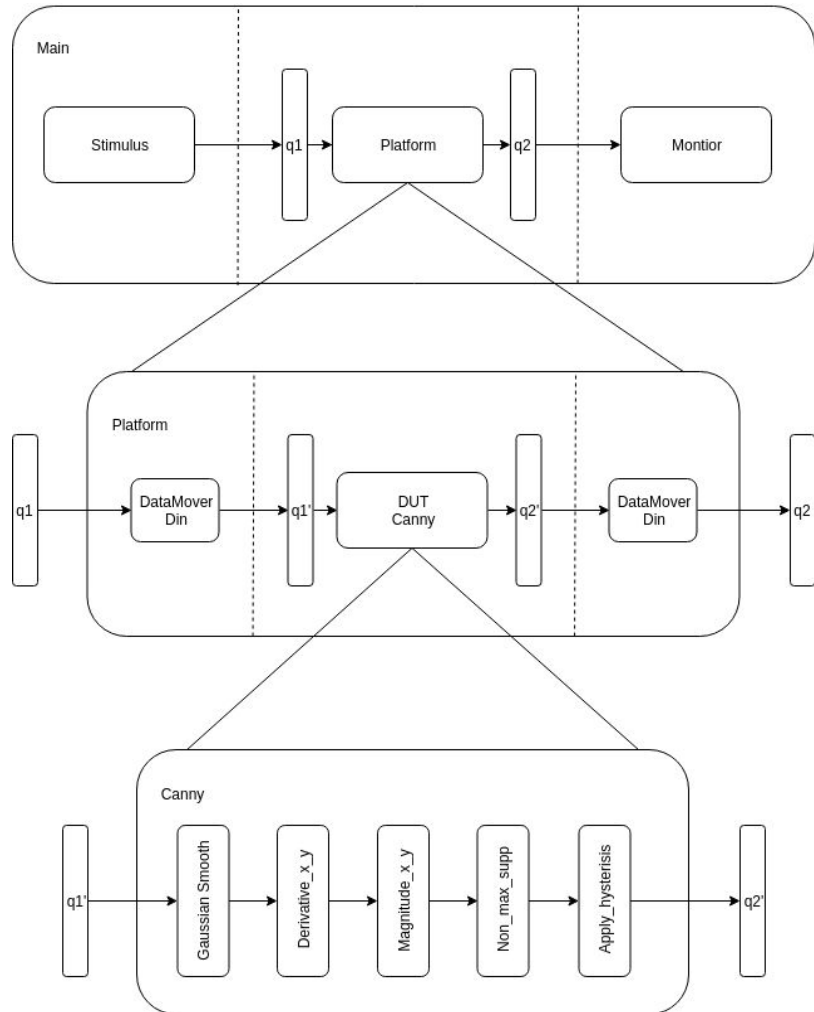
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Lab 3

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## Structural and Behavioral Hierarchy

The following structure was created. The dashed lines indicate parallel behaviors and the lack of dashed lines indicate purely sequential behavior. The Main behavior includes the test bench and the Platform which encompasses two datamovers and the dut. The data movers are used to decouple the feeding of data into the DUT from the test bench which will allow for future experimentation when modifying how data is fed into the DUT. All elements within the test bench communicate asynchronously via typed channels and they all run concurrently. Async comm. And concurrent behaviors are also present in the platform for the same reason. The monitor terminates the program when an image is received from the DUT. Within the DUT the sub behaviors listed pass data between them via variables and operate sequentially.



## Changes To Code

- Replaced all global functions with behaviors and combined functions specific to each stage of data processing in said behaviors (eg. Follow edges in Applied Hysteresis Behavior)
- All data flow between behaviors is done via in and out ports with no inout ports
- Added additional edgeTemp Image container to allow for ports with exclusive directionality in Apply\_hysteresis.
- Created test bench with multiple typed queue channels
- Added typed queue channels to code
- Modified Nms\_supp to prevent out violation for behavior output
- Left read and write pgm functions as globals since they were part of the test bench and were used multiple times across behaviors.
- Created on DataMover behavior since they just move data from one queue to another

## Comments

No difficulties were experienced when developing code for this lab. However, an additional container had to be created in order to allow for out port rules in Apply\_hysterisis behavior.