Error Handling

# Semantic Errors

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| Error | Detection |
| Same name used to define multiple different devices. | Use query() in Names class to check name does not already have an ID (ie. ‘None’ should be returned). |
| Inconsistent name chosen in definition (eg. SW1 for a gate). | Check name matches device type. If not, warn user. |
| Number of inputs defined for gate not in range 1-16. | ‘INVALID\_QUALIFIER’ error returned by make\_device() in Devices class. |
| Defined clock period not interpretable. | Check period does not start with 0. |
| Multiple connections to same input. | ‘INPUT\_CONNECTED’ error returned by make\_connection() in Network class. If get\_connected\_output() returns the output specified by the user (ie. the user has specified the same connection twice), report to the user and move on. Otherwise report to user and stop. |
| Invalid port for device type (for connection or monitor). | ‘PORT\_ABSENT’ error returned by make\_connection() in Network class. |
| Non-existent device specified (for connection or monitor). | ‘DEVICE\_ABSENT’ error returned by make\_connection() in Network class. |
| Monitor already exists. | ‘MONITOR\_PRESENT’ error returned by make\_monitor() in Monitors class. Report to user and carry on. |
| Input unconnected. | Call check\_network() in Network class at end of parsing. Report error if False returned (ie. there are floating inputs). |
| No monitor given. | If monitors\_dictionary in Monitors class is empty at end of parsing, alert user and carry on. |

NB: devices must be defined before being connected or monitored.

Input-to-input and output-to-output errors are syntactically forbidden (and therefore do not need to be specified as a semantic error).