Error Handling

# Semantic Errors

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| Error | Detection |
| Same name used multiple times for different devices. | Look up newly defined names to check they don’t already exist. |
| Inconsistent name chosen (eg. SW1 for a gate). | Check name matches device type. If not, warn user. |
| Number of inputs specified for gate not in range 1-16. | Check number of inputs in appropriate range, |
| Clock period not interpretable. | Check period does not start with 0. |
| Multiple connections to same input. | Look up connections list to check input not already connected. |
| ‘Q’ or ‘QBAR’ output specified for non-DTYPE device. | Look up name corresponds to DTYPE if Q or QBAR used. |
| Non-existent input specified for connection. | Look up name to find device type. Check not SWITCH or CLOCK (which have no input). For gates, check input number is in specified range. Check only DTYPE uses DATA, CLOCK, SET, CLEAR. |
| Non-existent output specified for connection. | If lookup name of output returns None, report to user. |
| Non-existent output specified for monitor. | If lookup name of output returns None, report to user. |
| Connection already exists. | Look up in connections list (this should be first check). Can skip to next connection in file if this is the case. |
| Monitor already exists. | Look up in monitors list. Can skip to next monitor if this is the case. |
| Input unconnected. | At end of file check all inputs have a connection. If not, report floating inputs to user. |
| Switch defined in 2 different states. | Check if switch state has been defined before. |
| No monitor given. | Check at least one monitor specified. If not, alert user. |

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

Read pre-written classes to check all this makes sense.