Control-flow analysis

Booleans

Extending the value lattice with booleans would allow us to do better flow-specific optimization. With that support, we could then only follow one branch of a conditional instead of always flowing values across both.

Datatype tracking

Similarly, track the possible constructed values passed along for a datatype.

Eliminate unreachable blocks

We already eliminated unused functions. But, we do not remove unreachable arms of a conditional/case statement. This work will need to be done in conjunction with either of the above; there are later optimizations that assume that all kept code has at least trivial CFA information.

Implementation of reflow and associated optimizations

See Olin’s thesis. Note that this requires some trickery to implement efficiently – see Lars.