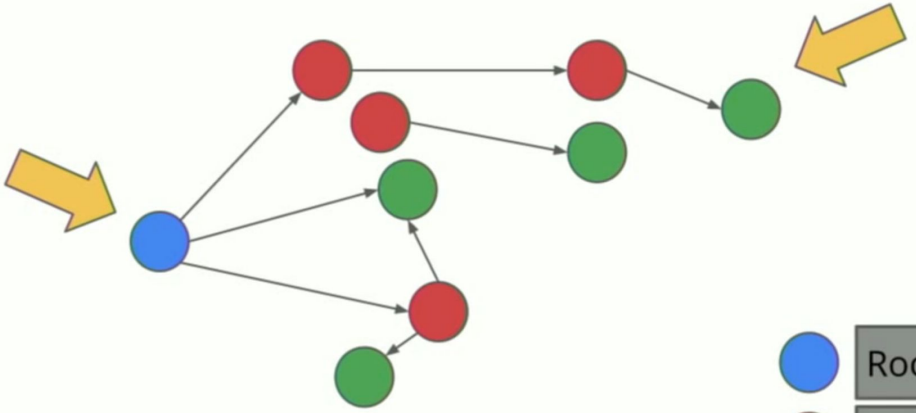
The object graph

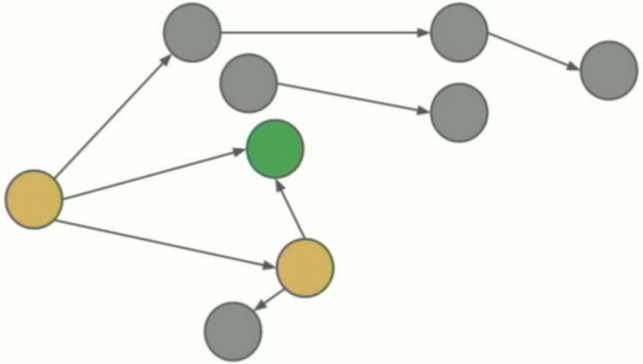


Root

Object variable

Scalar variable

An object's retaining tree

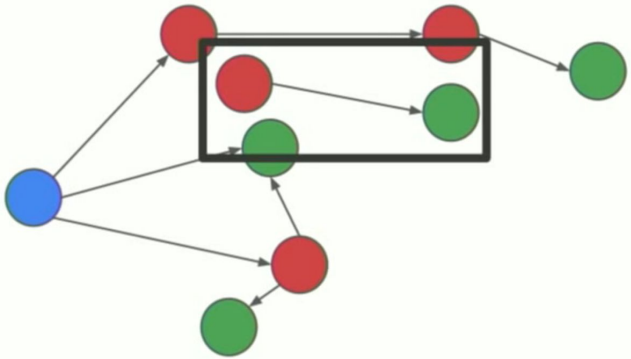


An object's size

- Two sizes
  - Shallow
    - Just the object
    - Usually a small constant value
  - Retained
    - Sum of shallow size of all descendents
  - Shallow == Retained
    - boolean, number, string variables

What is garbage?

- Garbage: All variables which cannot be reached from the root node.



Understanding Memory

- All variables are part of the object graph
  - Object variables can reference other variables
- Objects have two sizes
  - *Shallow* (**self**)
  - *Retained* (**self**+**descendents**)
- All variables that cannot be reached from the root are garbage
- Allocations are cheap until the "young" memory pool runs out of memory
  - Garbage collection