Code

Frames

Trace

```
while j < 100:

j += 1

if a is None:

break

a = a.f()
```

```
\mathbf{a} = a_1 \mathbf{j} = j_2
```

 $[j_1, a_1]$ $j_2 = \text{int_add}(j_1, 1)$ $\text{guard_nonnull}(a_1)$ $\text{guard_class}(a_1, \text{Even})$ $i_1 = \text{getfield_gc}(a_1, \text{descr='value'})$ $i_2 = \text{int_rshift}(i_1, 2)$ $b_1 = \text{int_eq}(i_2, 1)$ $\text{guard_false}(b_1)$ $i_2 = \text{int_and}(i_2, 1)$

```
n = self.value >> 2
if n == 1:
    return None
return self.build(n)
```

$$\begin{array}{l} {\rm n} = i_2 \\ {\rm self} = a_1 \end{array}$$

$$i_3 = \text{int_and}(i_2, 1)$$

 $i_4 = \text{int_is_zero}(i_3)$
 $guard_true(i_4)$
 $a_2 = \text{new(Even)}$

```
if n & 1 == 0:
return Even(n)
else:
return Odd(n)
```

$$n = i_2$$