```
src/heavy_ball.py
                      Thu Mar 21 11:49:10 2024
 1: import lib
 2:
  3:
 4: def iterate(self):
 5:
        self._x_value = self._start
 6: self. old x value = None
 7:
        self._iteration = 0
 8:
        self._converged_val = False
  9:
        self. grad value = self. gradient(self. x value)
10:
        self. z = 0
11:
        yield self.state_dict() # yield initial values
12:
13:
        while not self._converged_val:
14:
            self. iteration += 1
15:
            if self._max_iter > 0 and self._iteration > self._max_iter:
16:
                break
17:
            self._grad_value = self._gradient(self._x_value)
            self. old x value = self. x value
18:
            self._z = self._beta * self._z + self._step_size * self._grad_value
19:
20:
            self._x_value = self._x_value - self._z
21:
             self._converged_val = self._converged(self._x_value, self._old_x_value)
 22:
             vield self.state dict()
```