```
lookup(x)
              hit
                                       miss
    read(ds, x)
                                         read(ds, -1)
   read(ds_h, x)
                                        self.set_flags
   self.set_flags
                                     handle_cache_miss()
   delete(ds, x)
  delete(ds_h, x)
   prepend(ds, x)
                                  full
                                                           non-full
prepend(ds_h, x, +1)
                                                        delete(ds, -1)
                                                       delete(ds_h, -1)
                  find_smallest_ds_value(ds_h)
                          delete(ds, y)
                         delete(ds_h, y)
                                           prepend(ds, x)
                                        prepend(ds_h, x, 0)
```