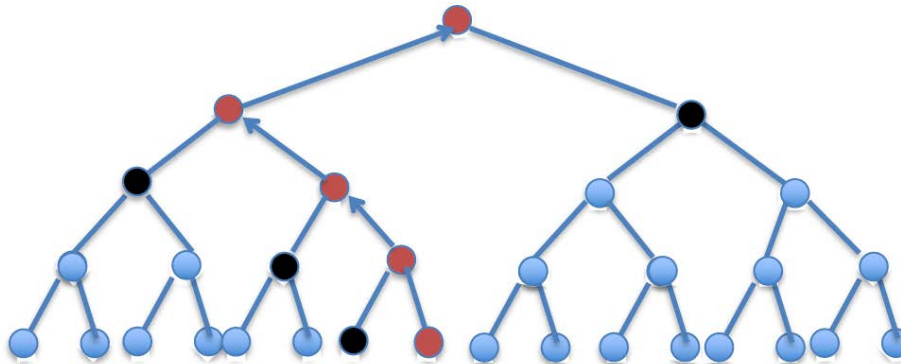


Homework 1 – Q3



The second heaviest apple must be among the black nodes which were compared with the heaviest apple along the way. All apples underneath black nodes cannot be heavier than the apples in black nodes. There is a black node at every level except the top level, which gives us overall 10 black nodes. Do $10 - 1 = 9$ weighings to find the heaviest apple among them by brute force.

In total this is $1023 + 9 = 1032$ weighings.