

20.3 Finding square root of an unsigned integer

Square root of an unsigned integer n without using `sqrt` function
Returns unsigned integer which is floor of $\text{sqrt}(n)$

`sqrt(100) = 10`
`sqrt(11) = 3`
`sqrt(24) = 4`
`sqrt(25) = 5`

$T(n) = T(n/2) + 1$
 $T(1) = 1$
Time complexity = $O(\log_2 n)$
Space complexity = $\Theta(1)$

Figure 20.2: Finding square root of an unsigned integer