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2. Base case: $b|a,\ s = 0,\ t = 1,\ d = b \rightarrow |s| \leq b/d,\ |t| \leq a/d$ both hold.
   Inductive step: Assume that the condition holds for ExtEuclid(b, r), r = a mod b
   This means that gcd(b, r) implies → gcd(a, b). This is because gcd(b, r), gcd(a, b) = d, showing that d will be invariant.
   We can also see that $s = t',\ t = s' - qt'$
   By the inductive hypothesis, $|s'| \leq r/d,\ |t'| \leq b/d$. Because $s = t'$ and $t + qt' = s',\ |s| \leq b/d$ and $|s' - qt'| \leq r/d \rightarrow s' - qt' \leq r/d \rightarrow s' \leq r/d + qt' \rightarrow s' \leq r/d + qs \rightarrow$ s is at most b/d → $s' \leq r/d + q(b/d) \rightarrow s' \leq \frac{r+qb}{d}$ → The relation r = a mod b arises from a =qb + r. $\rightarrow s' \leq a/d \rightarrow t \leq a/d \rightarrow |t| \leq a/d$