

Note that $\gcd(a, b) = \gcd(a-b, b)$.

Refer to the n^{th} fibonacci number as F_n .

$$\begin{aligned}\gcd(F_n, F_{n+1}) &= \gcd(F_n, F_{n+1} - F_n) \\ &= \gcd(F_n, F_{n-1}). \quad (1)\end{aligned}$$

(Note that this is because $F_{n-1} + F_n = F_{n+1}$)

Relation (1) tells us that the gcd of any two consecutive fibonacci numbers is the same since

$$\begin{aligned}\gcd(F_n, F_{n+1}) &= \gcd(F_n, F_{n-1}) \\ &= \gcd(F_{n-2}, F_{n-1}) \\ &= \dots \\ &= \gcd(F_1, F_2) = \gcd(1, 1) = \boxed{1}\end{aligned}$$