Summary : All elements of G depend
on $\bar{\sigma}_u^2$ $\Rightarrow$ $G = \underbrace{A}_{} \cdot \bar{\sigma}_u^2$

$\Leftarrow$ Numerator Relationship
Matrix

$\Rightarrow$ Definition of A:

- Diagonal elements : $(A)_{ii} = 1 + F_i$

- Off diagonal : $\underbrace{(A)_{ij}}_{} = \dfrac{cor(u_i, u_j)}{\bar{\sigma}_u^2}$

element in row i and column j

$$A = \begin{bmatrix} & 1 & 2 & \cdots & j & & \\ 1 & & & & & & \\ 2 & & & & & & \\ \vdots & & & & & & \\ i & - & \rightarrow & (A)_{ij} & & \end{bmatrix}$$

$\hookrightarrow$ relationship coefficient between
animals i and j