

Constructing a frequency table from 2-bit encoded genotypes

$AA \leftarrow 0$

$Aa \leftarrow 0$

$aa \leftarrow 0$

for $i = 0 \rightarrow N$ **do**

$x \leftarrow A[i]$

$y \leftarrow B[i]$

$aa \leftarrow aa + \text{popcount}(x \wedge y)$

$Aa \leftarrow Aa + \text{popcount}(y)$

$AA \leftarrow AA + \text{popcount}(x)$

end for

$AA \leftarrow AA - aa$

$Aa \leftarrow Aa - aa$

▷ N is the number of blocks per bit vector

▷ A is the (AA or aa) genotype bit vector

▷ B is the (Aa or aa) genotype bit vector