Example where 4 babies are born in a hospital. S, the sample space, is \( \{(s_1, s_2, s_3, s_4) \mid s_j = b \text{ or } g \} \)

For instance if the sexes are (b, g, g, b) then this is the outcome.

Can we define, for instance, \( X((s_1, s_2, s_3, s_4)) = s_i \) ?

\( X((b, g, g, b)) = b \) ?

No, because random variable should assign real numbers to outcome.

Instead could write \( X((s_1, s_2, s_3, s_4)) = 1 \) if \( s_i = b \) or \( = 2 \) if \( s_i = g \)

E.g. \( X((b, g, g, b)) = 1 \) since \( s_1 = b \)

\( X((g, g, g, b)) = 2 \) since \( s_1 = g \).