

A \mathcal{Adv} B

$$a \xleftarrow{\$} \mathbb{Z}_q$$
$$\alpha \leftarrow g^a$$

$$\xrightarrow{\alpha}$$

$$b \xleftarrow{\$} \mathbb{Z}_q$$
$$\beta \leftarrow g^b$$

$$\xleftarrow{\beta}$$

$$x \xleftarrow{\$} \mathbb{Z}_q$$
$$X \leftarrow g^x$$

$$\xleftarrow{X}$$

$$\xrightarrow{X}$$

$$k_1 \leftarrow X^a$$

$$k_1 \leftarrow \alpha^x$$
$$k_2 \leftarrow \beta^x$$

$$k_2 \leftarrow X^b$$