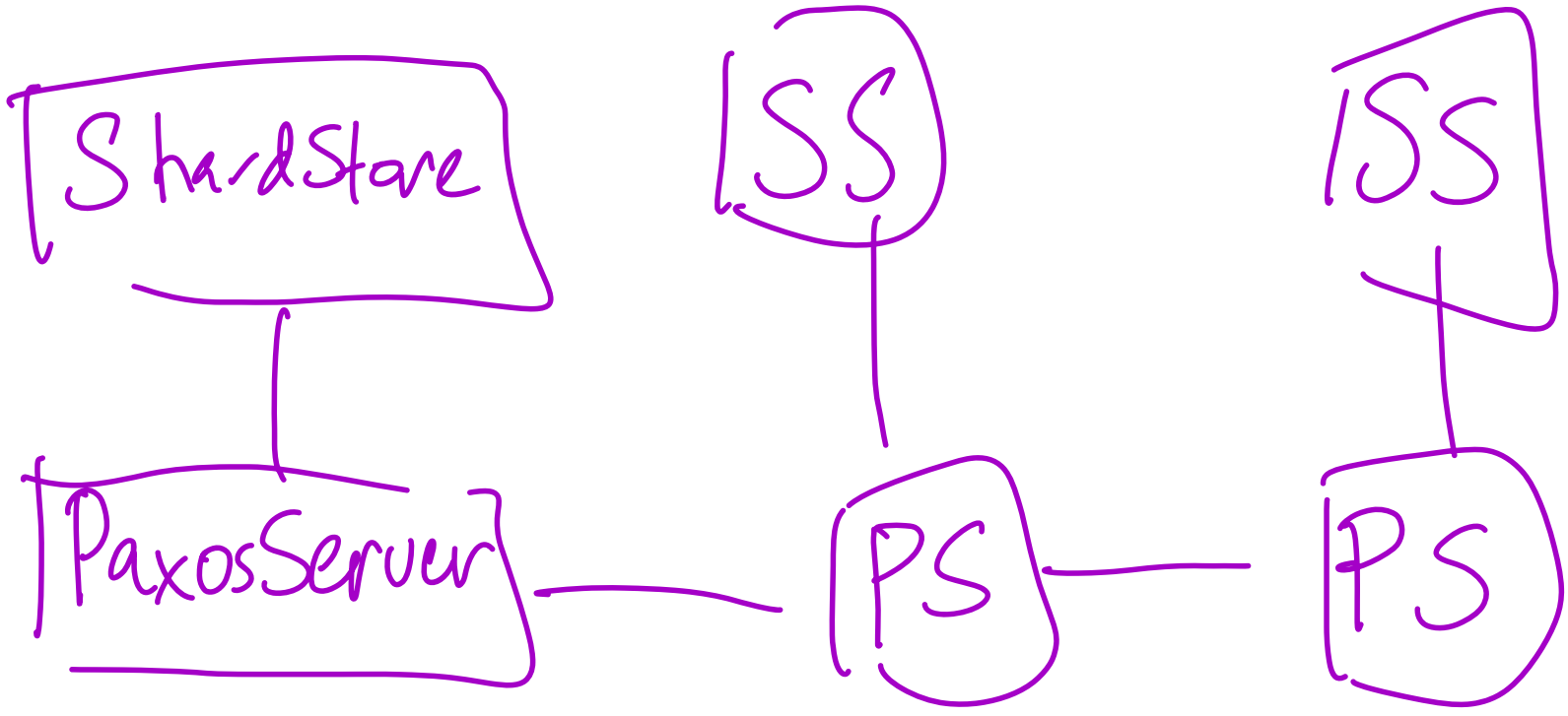
CSE 452

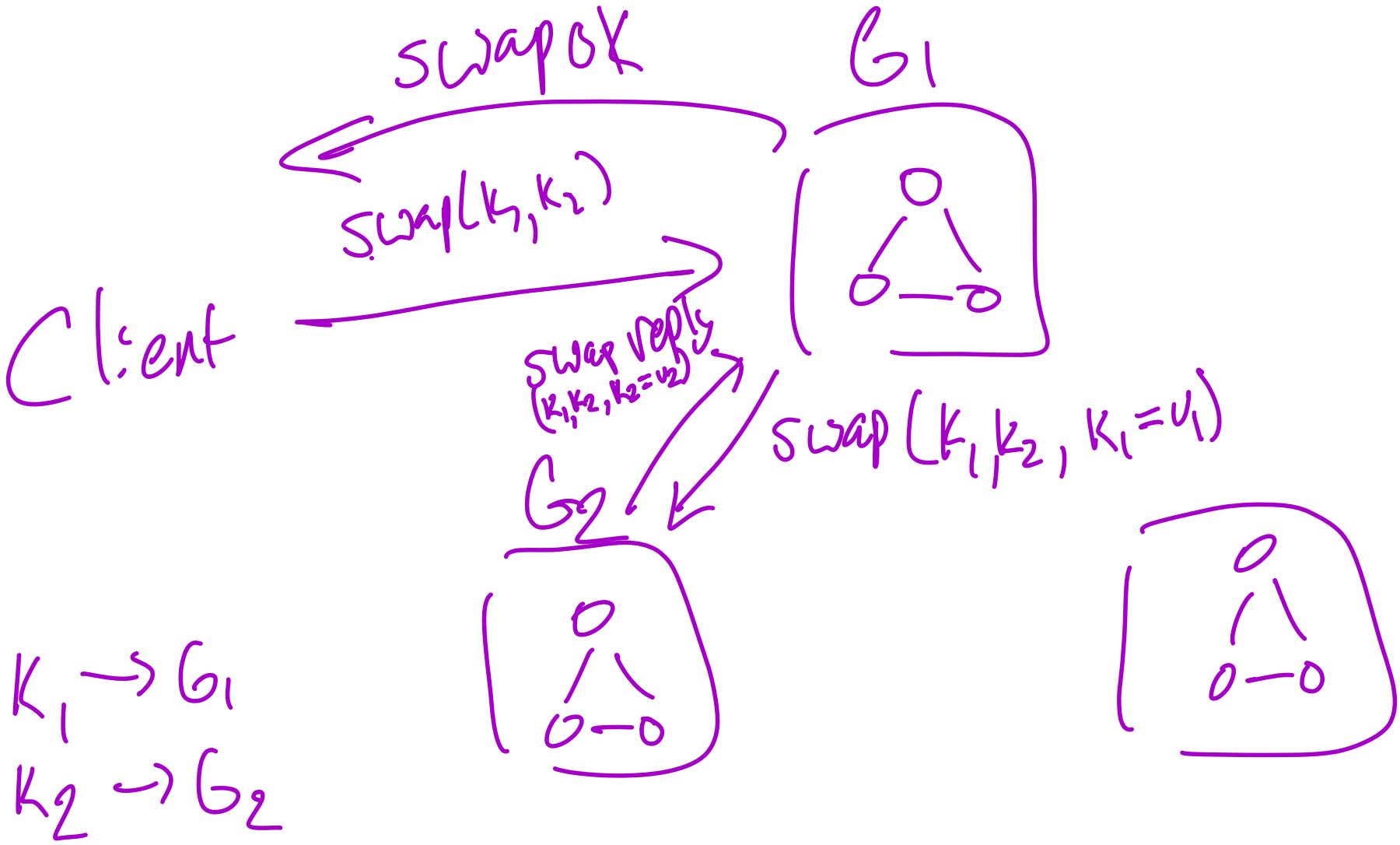
Distributed Systems

Two-Phase Commit



any operation done by a ShardStoreServer:

1) gets consensus
2) when executed, does the thing



swap(K_1, K_2) swap the values stored at K_1 & K_2

C_1 swap(k_1, k_2)

S	ak_1	ak_2	k_1 x
	arx		k_2 y

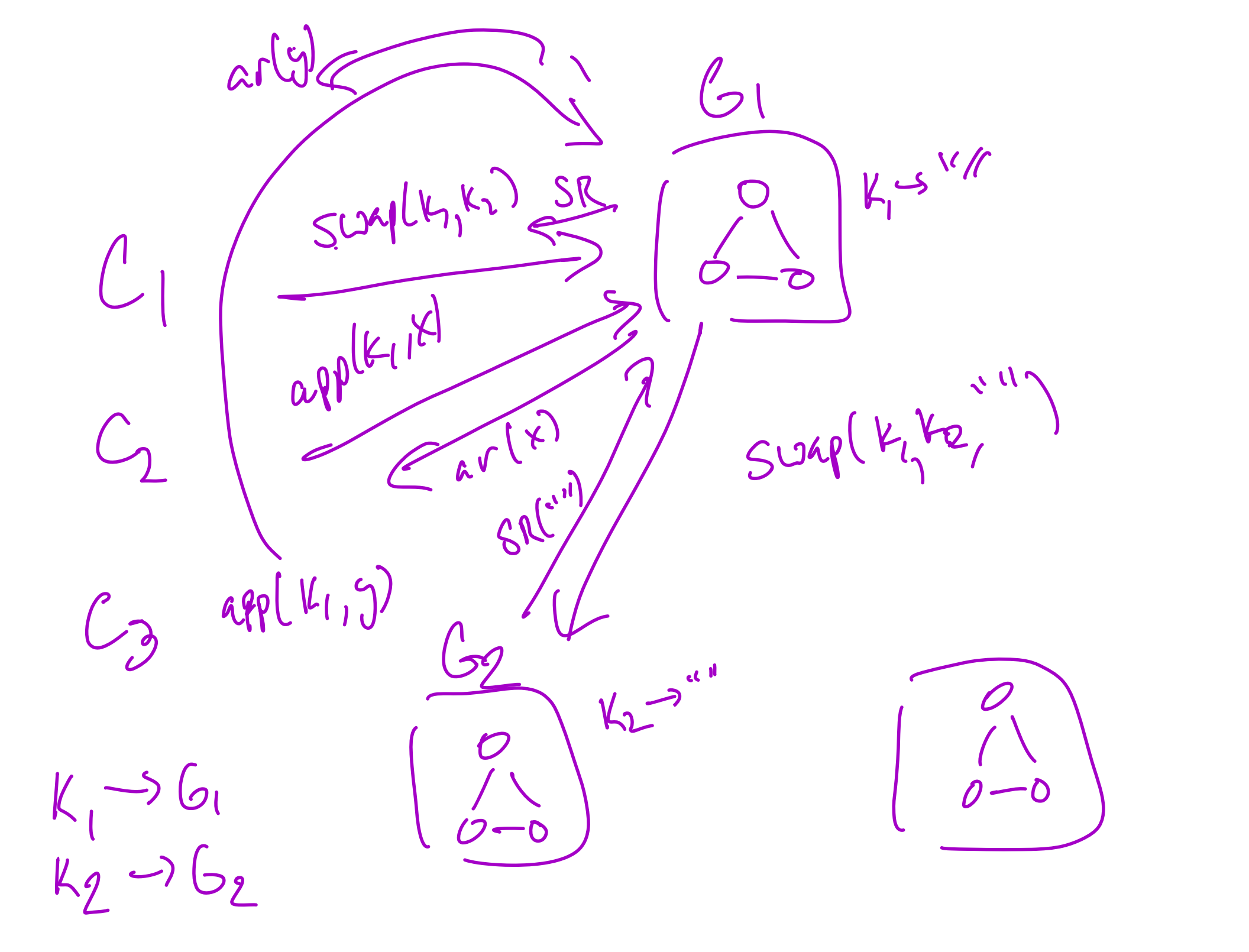
ak_1	qk_2	S	k_1 y
arx			k_2 x

C_2 app(k_1, x)

ak_1	S	ak_2	k_1
arx		ary	k_2 xy

C_3 app(k_2, y)

ak_2	S	qk_1	k_1 yx
ary		aryx	k_2


ar(y)
G_1
swap(k_1,k_2)
SR
C_1
$k_1 \to$ "//"
app(k_1,x)
C_2
ar(x)
swap(k_1,k_2,"//")
SR("//")
C_3
app(k_1,y)
G_2
$k_2 \to$ ""
$k_1 \to G_1$
$k_2 \to G_2$

C_1 swap(k_1, k_2) swapOk()

C_2 app(k_1, x) ar(x)

C_3 app(k_2, y) ar(y)

Two Phase Commit

- prepare phase
  - gathers all participants' data and gets them to agree not to touch these keys until end of xaction
- execute phase
  - scatter all the data to participants and tell them to execute + release lock