In the lecture:

- Finite! Showing characters of irrep spanned $\mathbb{C}(G)$

- Character tables.
  e.g. for S_3

Completely encodes rep theory of S_3 ←

	e	(12)	(123)
	1	3	2
triv	1	1	1
sgn	1	−1	1
std	2	0	−1

Helpful tool for computing the irreps of a group.
- First orthogonality ~ orthogonality for rows
- Second orthogonality ~ orthogonality for the columns

Exercise: Compute the character table
of Q_8. ← Quaternion group.

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Exercise " — — " of S_5

Notes: triv, sgn, std, sgn ⊗ std
gives you 4 ~ you need 7 total
Stuck!

Next trick: If you have an irrep V,
can try decomposing $V \otimes V$, see if you get
something new.
$$\chi_{V \otimes V} = (\chi_V)^2 \rightsquigarrow \text{check the multiplicity}$$
of irreps you already have,
and see if there's something new

follow this through $+ \Sigma \Leftarrow \quad V \otimes V = \boxed{\Lambda^2 V} \oplus S^2 V$

This will be irreducible
for $V = std$