What is a Think-Pair-Share?

A group exercise in lecture, not unlike discussion sections in ECE120.

The process:

1. I give you a problem.
2. You form groups of 3-4 people.
3. Talk about ways to solve the problem.
4. Once enough of the groups have finished, one group volunteers to share their answer.
5. We go over the group's answer together.

The Task: a Factorial Subroutine

Write subroutine FACTORIAL
- to compute output R0
- as the factorial of input R0.
- In other words, R0 ← 1 × 2 × … × R0.

Assumptions and rules…
- Assume that input R0 is at least 1.
- Assume that R6 points to a valid stack.
- Write your subroutine in LC-3 assembly language.
- Use the STACKMULT subroutine to calculate the answer.
- Clearly define the calling interface.

A Task on Your Own: 16-bit Palindrome Check

What's a palindrome?
- Same spelling backwards as forwards.
- Examples include "Otto" and "Hannah."

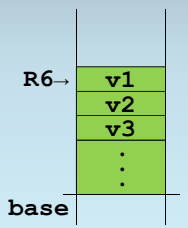
Your task:
- Check whether R0 is a palindrome.
- Example: 0111 1011 1101 1110.
- Return R0=1 if yes, R0=0 if no.

See sample solution on the web page.

Assumptions and rules…
- Assume that R6 points to a valid stack (use it).
- Write your code in LC-3 assembly language.

We Can Use Known Values on the Stack Directly

In practice, **we need not strictly obey the rules** of the stack abstraction.



Consider the following task:
- sum three non-negative values from top of the stack,
- pop all three values, and
- return the sum in R0.

Let's assume that only R0 should change.

