



PROTTLE

THE PROBLEMS BATTLE

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Orlando Math Circle

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MISSION TO DEVELOP LEADERS THROUGH MATHEMATICS

Programs:

- Math Circles
- Summer Program
- Leadership Training
- Math Festivals
- Competitions

A LITTLE BIT OF HISTORY

1976



the first
correspondence
competition in
Czechoslovakia



1998

the first Náboj
competition with
participants outside
Czechia & Slovakia



the first (math)
Náboj competition
in Slovakia

2014

2018/19

the first Náboj
competition with
participants outside
(continental) Europe

2025

the first
Prottle in
Orlando

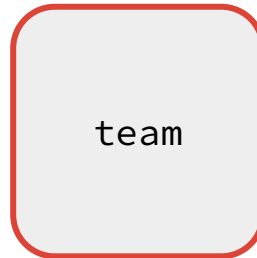
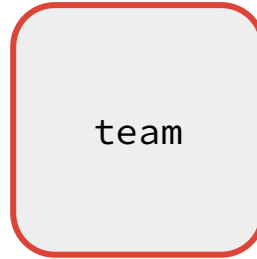
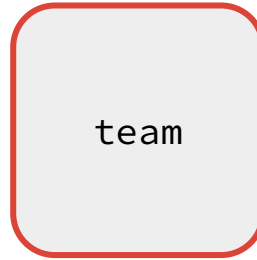
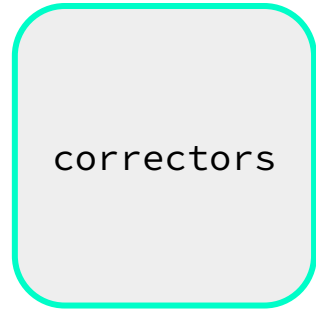


WHAT IS THE FORMAT OF THE ACTIVITY?

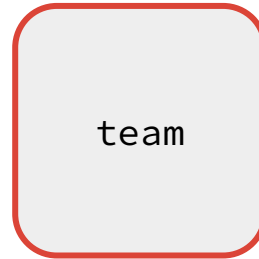
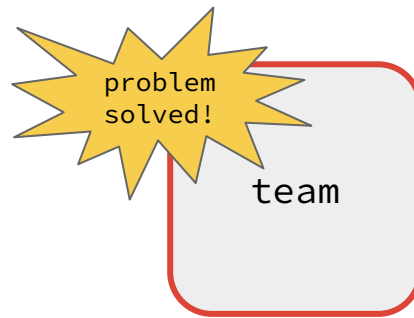
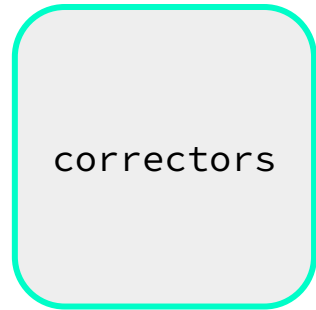
- ★ small number of problems
 - number of people on team +1
- ★ different locations
 - team table
 - correcting table
 - exchange of problems table
- ★ immediate feedback
 - problem solved = solution checked
 - visualisation of other teams progress



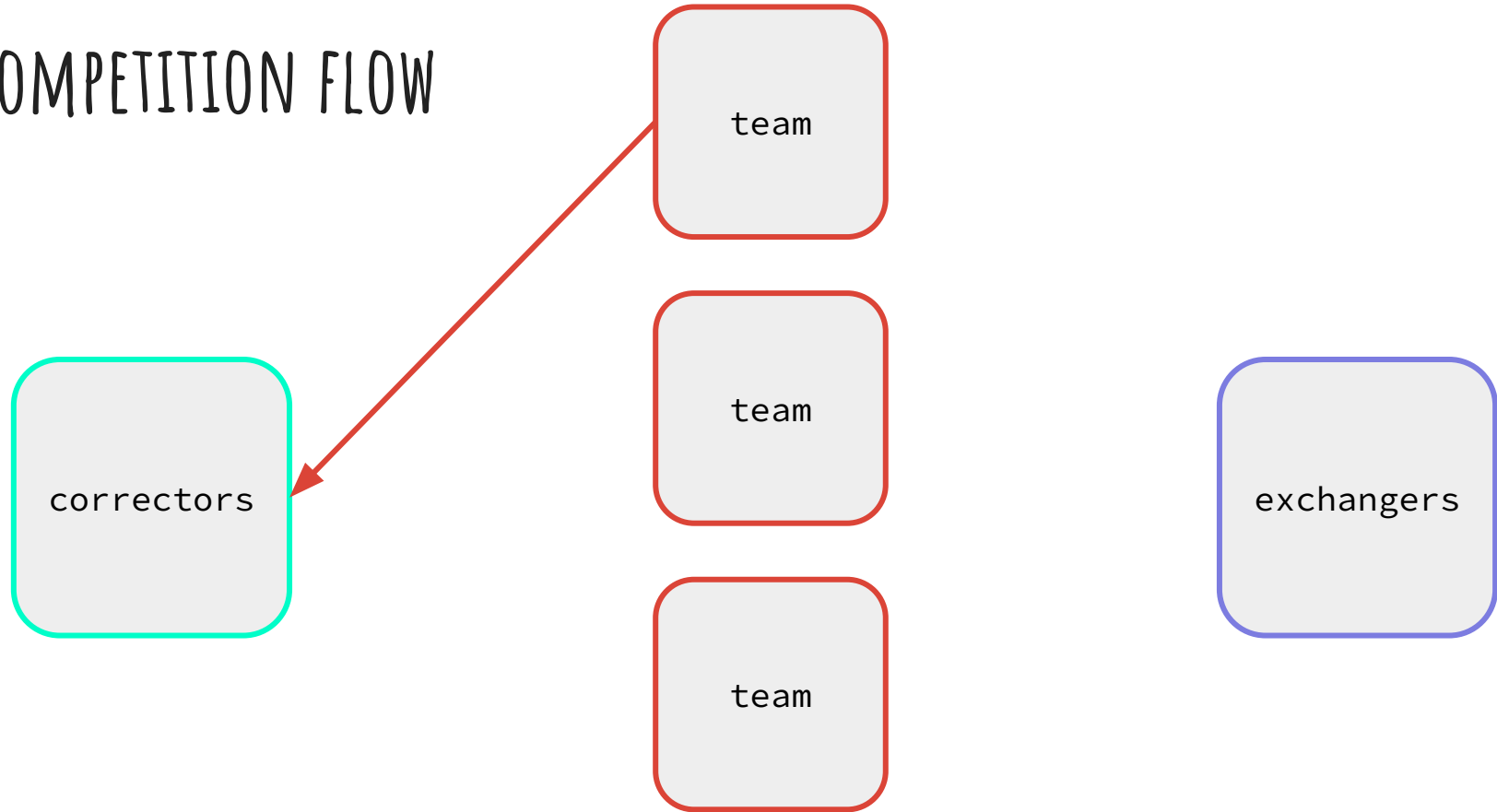
COMPETITION FLOW



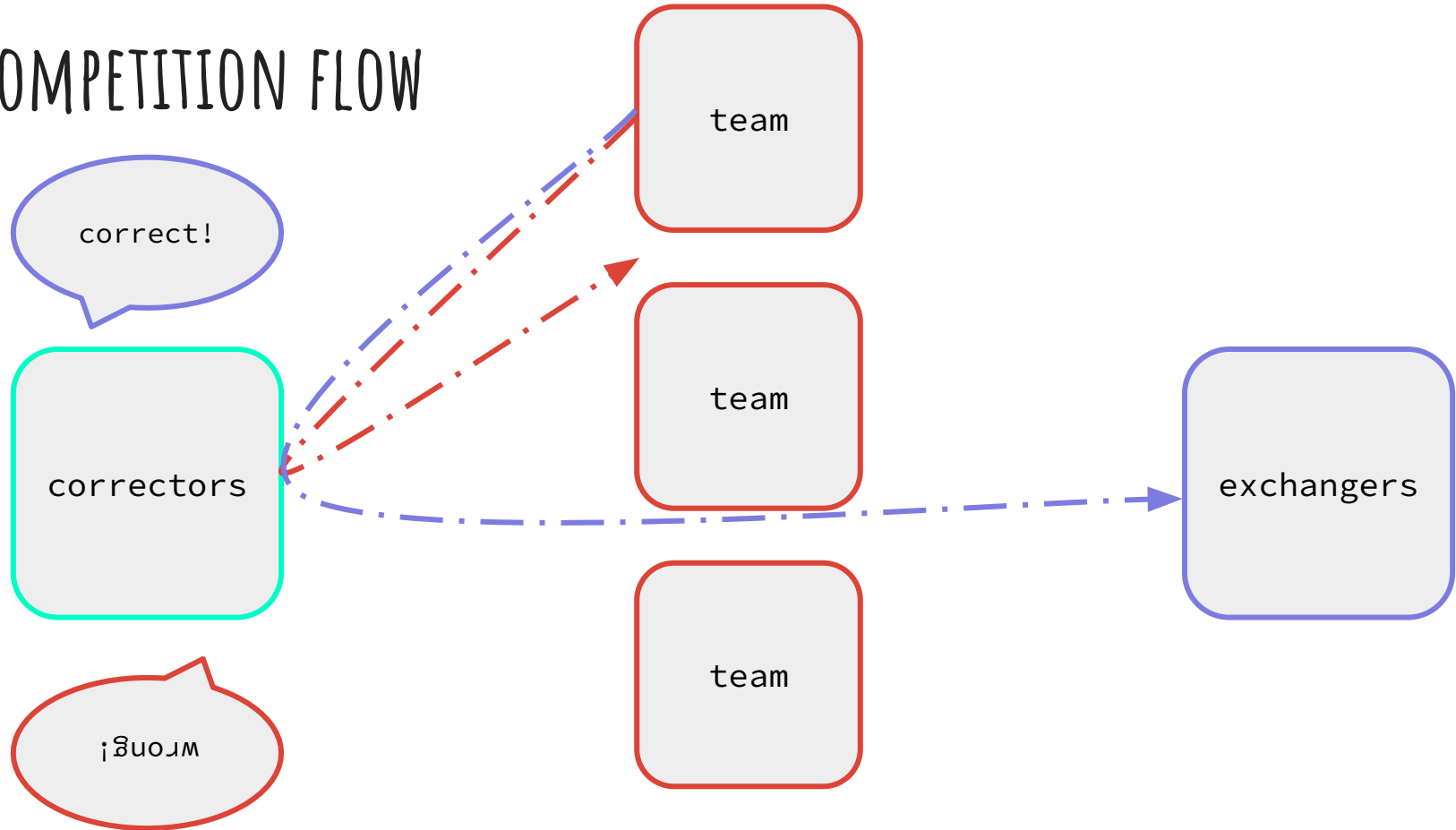
COMPETITION FLOW



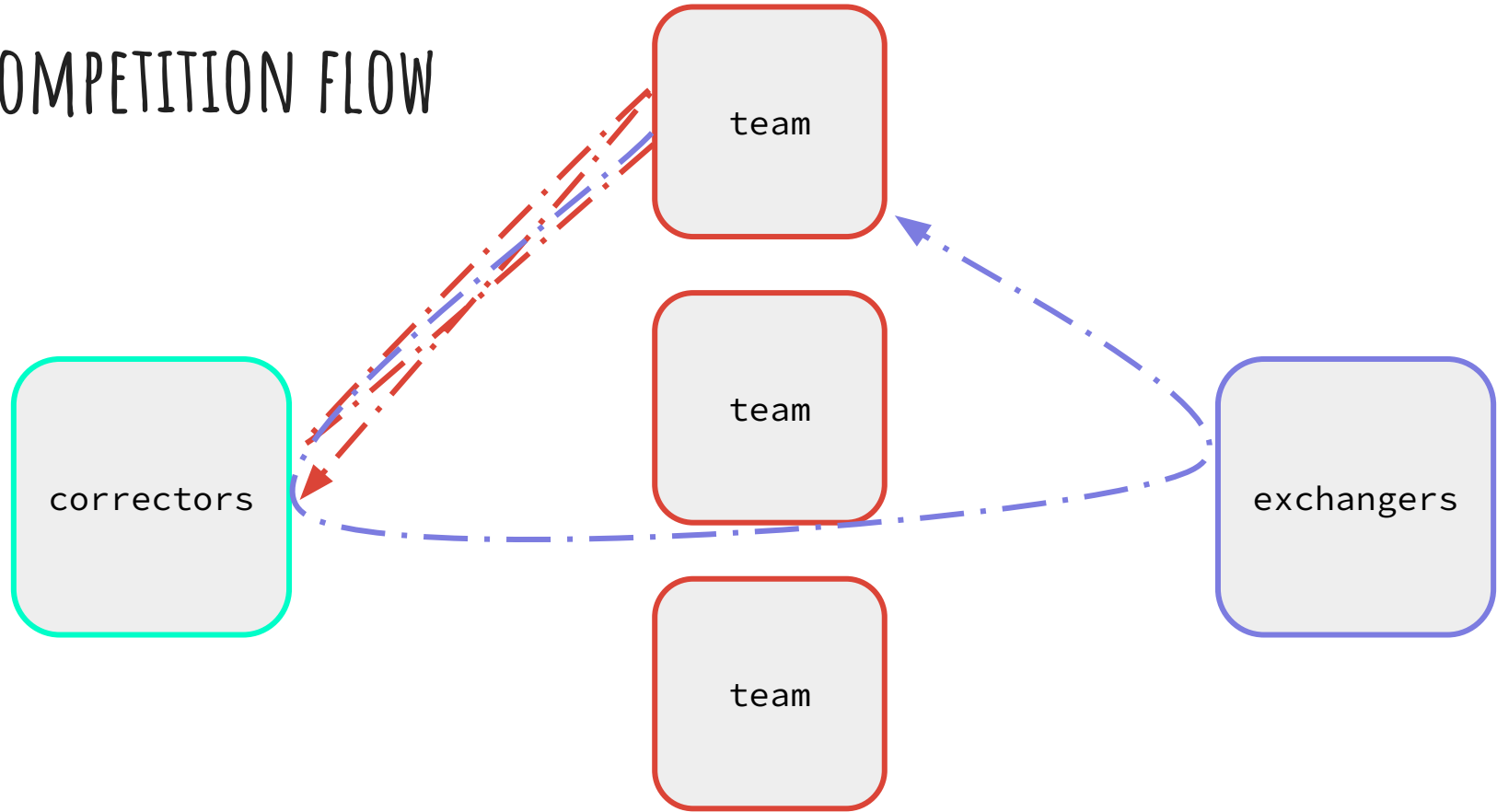
COMPETITION FLOW



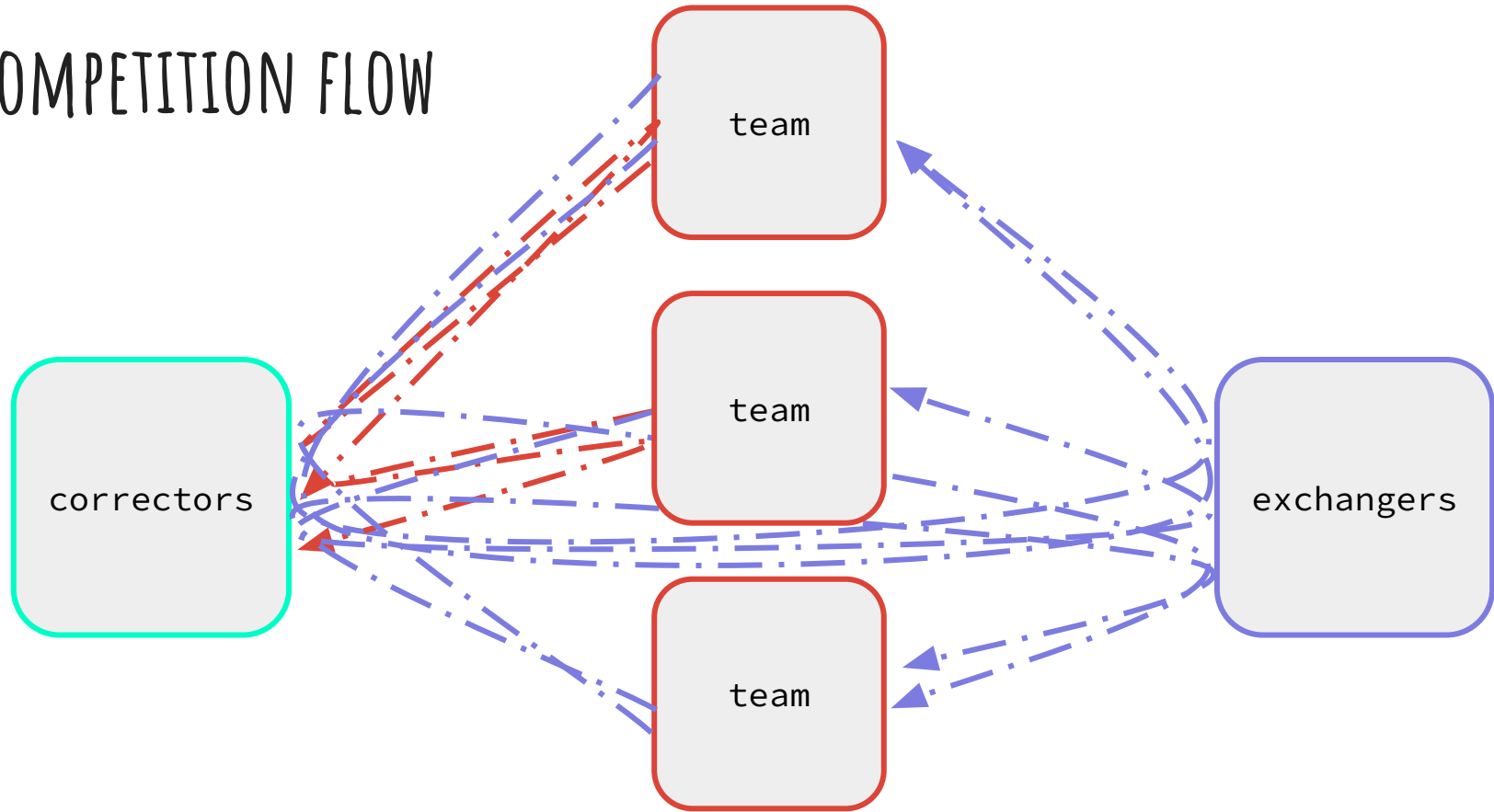
COMPETITION FLOW



COMPETITION FLOW



COMPETITION FLOW



ADAPTATION TO PROTTLE

From pure math to a game.

- ★ for each problems the team gets a token
- ★ tokens are used for actions in a board game

- the main goal shifts towards winning the board game

PROTTLE FLOW

correctors

team

team

team

board
game

exchangers

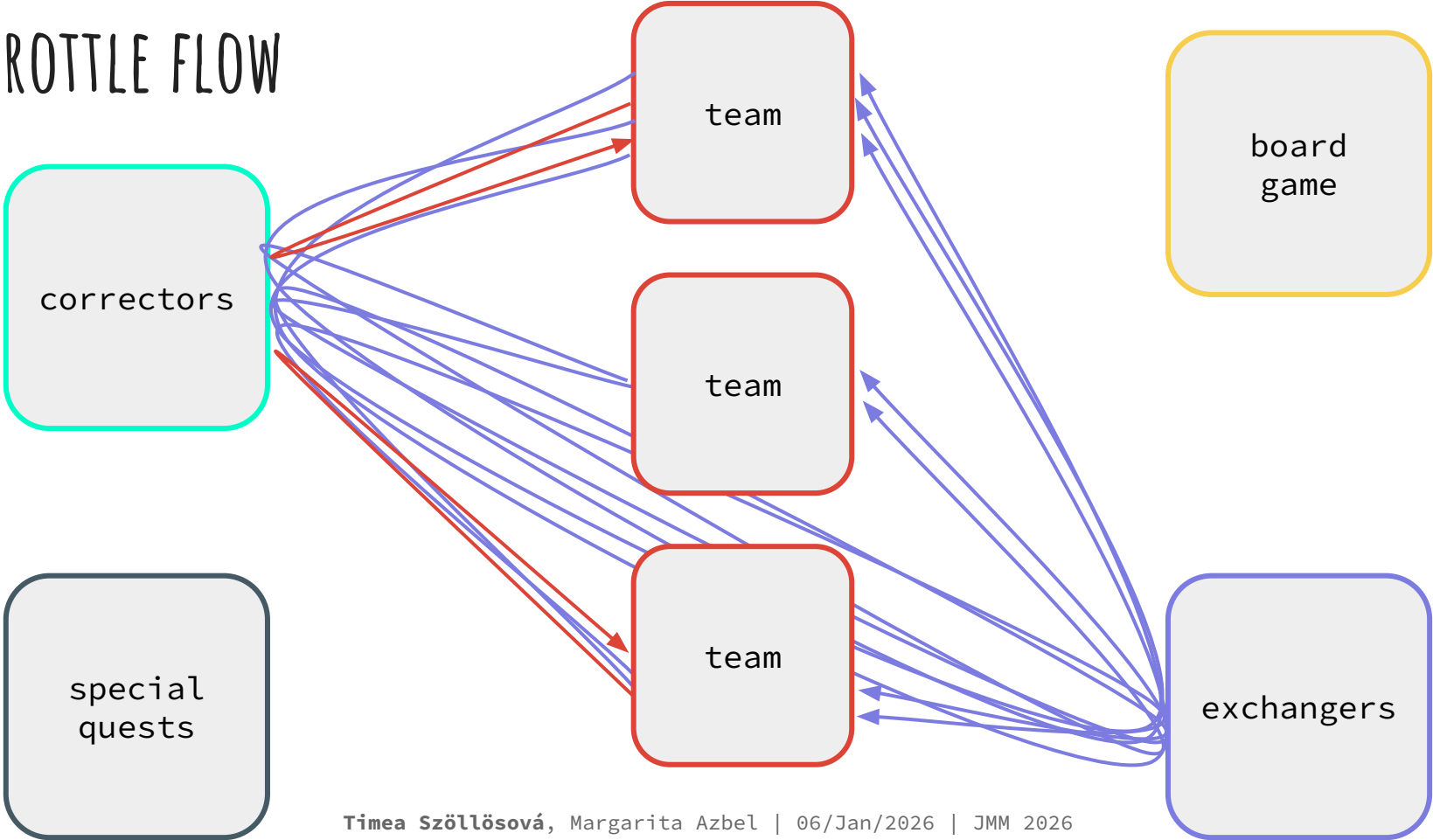
SPECIAL QUESTS

★ different actions in the board game may be possible through different kinds of tokens

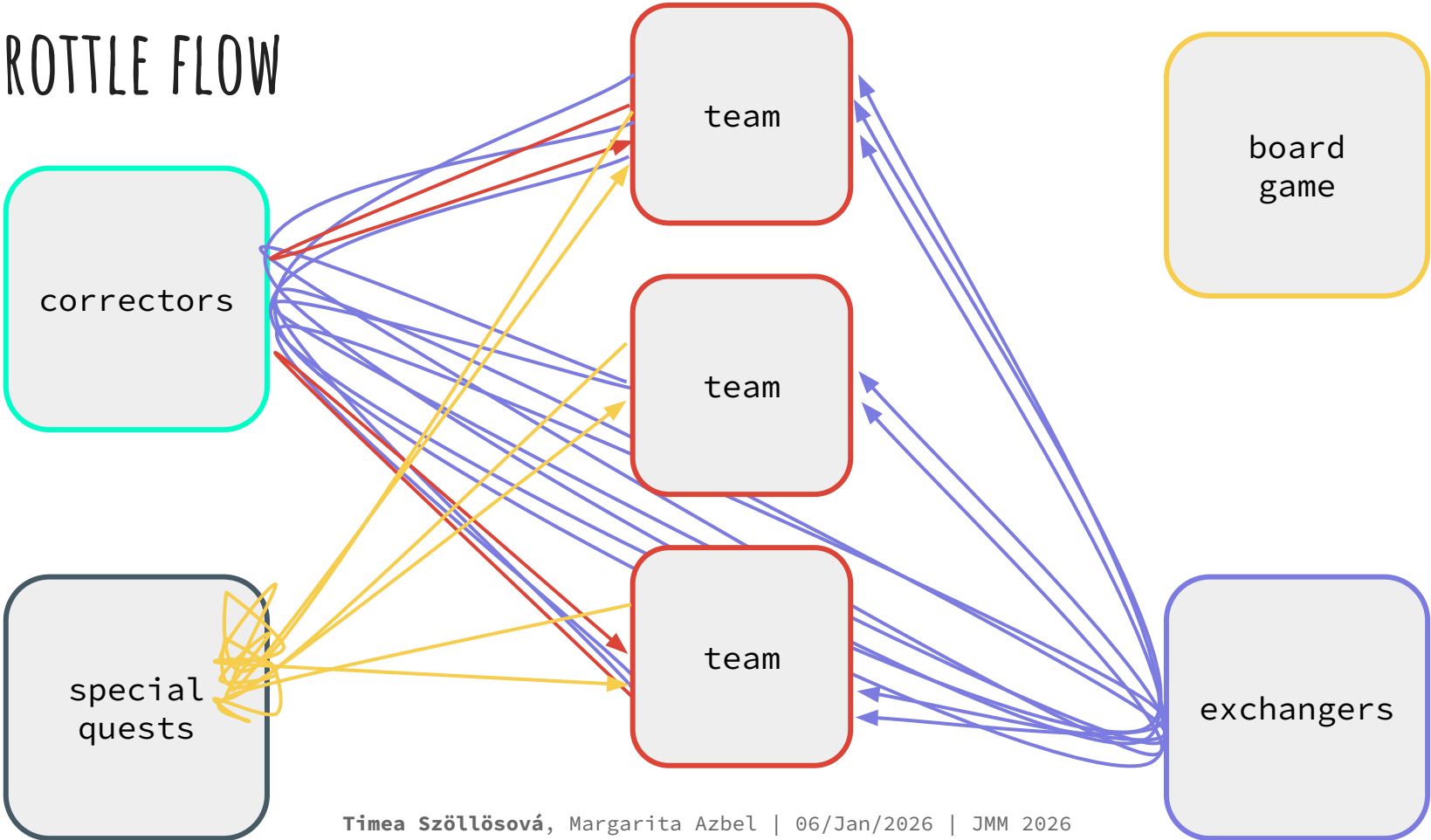
➤ trivia, logic puzzles, jumping jacks, coloring, ...



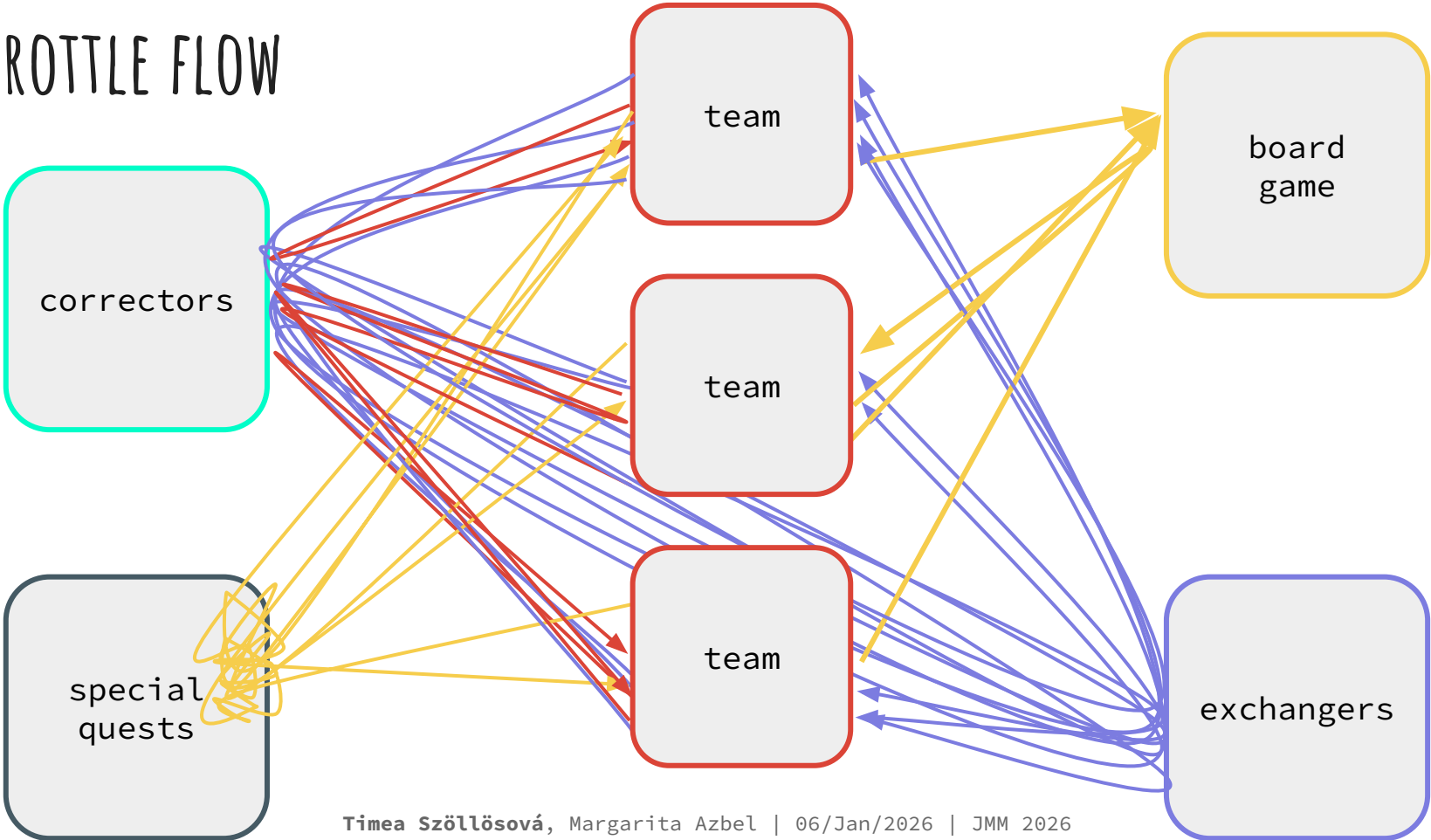
PROTTLE FLOW



PROTTLE FLOW



PROTTLE FLOW



BOARD GAME

- ★ turn for each player
- ★ possibility of different actions in a turn
- Tyle, Sorry (Ludo), Santorini, your version of a board game, ...



PROTTLE RECIPE

How to make your own Prottle
at home :)

Ingredients:

- 1.5 to 3 hours
- 12+ students (N)
- $\sim N/5$ facilitators
- tables for teams, game and problem exchange
- board game
- tokens, special quests equipment
- problems*

ON PROBLEMS

- ★ different categories of problems
 - adjustment to different levels of students' experience
 - possible advantage in a game for more homogeneous groups
- ★ difficulty in each category is increasing
 - eventually leading to collaboration
- ★ problems at the beginning of each category should be easier than is the students level
 - students gain confidence
 - the whole activity is dynamic
- ★ the most difficult problems, we can reach far above
 - We can. We don't have to :)



TIPS AND OBSERVATIONS

- ★ pre-cut problems
 - ★ different colors of paper
 - ★ facilitators can give hints to students
-
- teamwork and communication increases as the board game starts
 - students can literally run!



THANK YOU!

TIME FOR QUESTIONS :)

