Revitalizing Cyber-Security Education Through Competitions
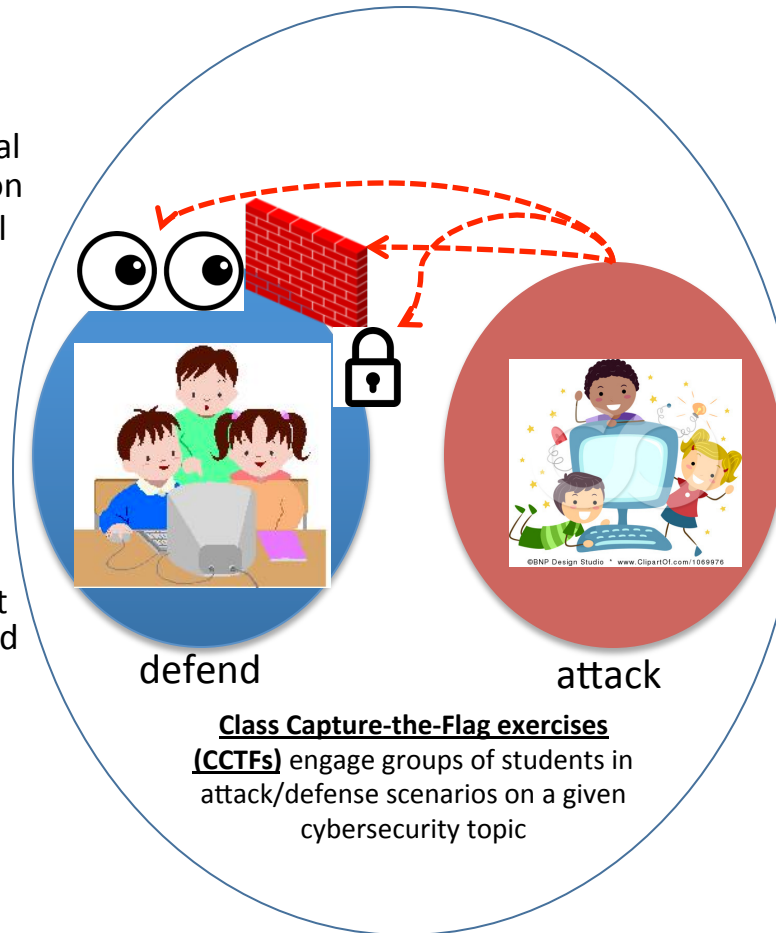
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Challenge:

- Cybersecurity is adversarial field, but current education does not teach adversarial thinking
- Students learn practical skills but do not develop critical thinking

Solution:

- Develop competitons that are short and focused, and can be incorporated into cybersecurity classes
- Structure of these competitions minimizes teacher effort for preparation

defend   attack

Class Capture-the-Flag exercises (CCTFs) engage groups of students in attack/defense scenarios on a given cybersecurity topic

Scientific Impact:

- Novel competition design where students play both the offense and the defense
- Enrichment of current cybersecurity education

Broader Impact:

- Improve cybersecurity education
- Better prepared workforce
- Recruit, improve diversity and retention of cybersecurity students