

# Bringing Modern Software Practices to Your Department and Your Classroom

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**How to teamwork  
when students  
have  
heterogeneous  
experience levels.**



# Agenda



Introduction  
• Experience



Theory  
• How group work  
is difficult



Ressources  
• Modern tools in  
pratice



Take actions



Questions

# Introduction

## Dominic Letarte

- GitHub Campus Advisor
- Work the industry for many years
- Assistant Professor of Instruction  
Dept. Computer and Information Science  
Temple University
  - Teaching Software Design: 2 instructors, 4 TA, 90 students/semester
  - Co-teaching capstone classes: 3 instructors, 3 Tas, 60 students/semester



# Introduction

## Experience with modern software practices in the classroom

- Github Classroom
- Github Classroom LTS integration with Canvas
- xx git repositories created,
- xx students teams formed in Canvas LTS/Github
- Project Board
- Issues Board
- Pull Requests
- Stats from last semester:



# Theory - Why teamwork is difficult

- Barriers to Communication [Walker2002]
- Diversity of Available Equipment [Walker2002]
- Disparity in Technical Background [Walker2002]



# Theory - Why group work is difficult





Bringing Modern Software Practices to Your Department and Your Classroom  
<https://github.com/domincl/sigcse2020/letarte.pdf>

# Ressources

**My experience with modern software practices in the classroom.**  
Numbers from last semester.

- Collaboration tools
  - Slack, Google drive, Dicord
- Git Code Repository
  - 206 github private repositories created
- Pull Requests
  - 1400 Pull Request created in Github
- Issue Board
  - Used to vote and comments on final projects
- Project Board
  - 50 boards created in Trello or Github



# Take Actions

## Use modern software practices in the classroom:

- 💡 Use **Issues Board** to track students proposals and engage conversation  
<https://guides.github.com/features/issues/>
- 💡 Use **Project Board** to track team progress (Github, Trello or Jira)
- 💡 Use Pull Request
- 💡 Use Emojis for feedback and grading  
😎 😁 😅 😔 💩 🤡 😈 .



# Take Actions

## Use modern software practices in the classroom with Github Education:

- 💡 Create a free Github Organization to host your students repositories  
<https://github.com/organizations/plan>.
- 💡 Register as teacher to get unlimited private Github repositories for your students assignments.  
<https://education.github.com/teachers>
- 💡 Create individual or team assignments in Github Classroom.  
<https://classroom.github.com/>



# Any Questions?

Get presentation at :

<https://github.com/domincl/sigcse2020>



# References

## Theory

- *In Stoddard, E., In Wobbe, K., & In Bass, R. (2019). Project-based learning in the first year: Beyond all expectations.*
- *Ellen L. Walker and Oberta A. Slotterbeck. 2002. Incorporating realistic teamwork into a small college software engineering curriculum. J. Comput. Sci. Coll. 17, 6 (May 2002), 115–123.*

## Ressources

- <https://community.canvaslms.com/groups/gamification/blog/2016/03/23/grade-with-emoji>
- <https://opensource.com/article/19/2/emoji-log-git-commit-messages>