Problems and Users
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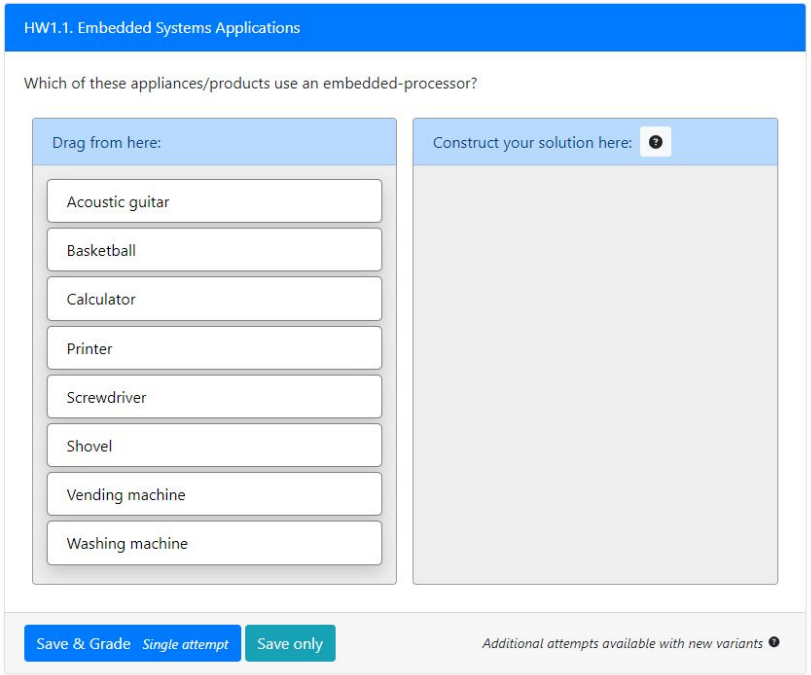
Project Overview

- Create an interactive application for CPRE 2880 students to better understand the concepts
  - HWs and quizzes
  - Randomized questions and autograding
  - Use emulator tools to simulate microcontrollers
  - Potentially have an emulated Cybot robot interface
- PrairieLearn framework to host the application
- Utilize Python, JavaScript, C and other programming languages
- Hope to inspire other professors to build similar interactive tools for their students



Problem Statement

- Students don’t get enough practice of concepts
    - Little feedback on Canvas HW submissions
- Not always availability to practice programming on the microcontroller in the lab
- Limited time to meet with Professor and TAs
    - Lab, class, office hours
- Limited capabilities with Canvas platform

Users/Personas

- CPRE 2880 students
  - Probably a sophomore
  - Never done embedded coding before
  - Maybe frustrated or overwhelmed
  - (Hopefully) wanting to learn
  - Wanting to do well in the course

Users/Personas

- CPRE 2880 professors
  - Busy
  - Attention is split: multiple classes, research, managing TAs, personal life
  - Want class to be successful
  - Want to improve their teaching skills

Users/Personas

- CPRE 2880 teaching assistants
  - Busy
  - Undergrad or grad students
  - Familiar to some degree with the material
  - Want less extra work

User Needs

- Students
  - Engaging/interactive
  - Randomization for unlimited practice
  - Questions specific to Lab and Exam content
- Course TAs
  - Auto-grading
  - Help students explore the subject instead of answering introductory questions
- Instructors
  - Auto-grading to save time
  - Randomization for less time designing questions
  - Student performance

Conclusion

Through our implementation of our PrairieLearn solution, we aim to keep the user experience in mind and develop a product that will satisfy our user's needs.

Any Questions or Suggestions?