Experience with Code Hunt in K-12

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Introduction

• 10 years teaching high school computer science
  • 8 years before working at Microsoft
  • 2 years since leaving Microsoft
  • Author of several HS level CS textbooks
• 18 years a software developer
• 9 years Academic Relations at Microsoft
My Environment

- Private Catholic College Preparatory High School
- Honors Programming
  - Elective course
  - Very little (often no) previous programming
  - Sophomores and Juniors (ages 14 – 16)
  - C# - in large part to allow interesting GUI apps
- Starting to be used in AP CS (Java)
  - Different teacher – just starting with it
Why Code Hunt?

• PROBLEMS
  • Poor problem solving skills
  • Students are poor at selecting test data
What I wanted

• Self-grading/Self-testing exercises
• Something that students could use from home
• Environment that appeals to students
  • Students will work for points!
  • Students love to compete – with themselves and peers
  • Students don’t mind it as much when the computer says they are wrong
How do I use Code Hunt?

- Public Code Hunt open zone
- Included in Office Mixes
- Custom sector
Code Hunt Open Zone

• Positives
  • Very challenging
  • Scores are motivators
  • Wide competition

• Negatives
  • Very challenging – sometimes painfully so for beginners
  • Solutions can be found on the Internet
If Statements and Boolean Expressions
By Alfred Thompson
Created 16 weeks ago | Duration 0:07:50
A short (7 minutes or so) review of if statements and Boolean expressions followed by three Code Hunt code duels to try out how well you know the material.

Simple Arithmetical Operations
By Alfred Thompson
Created 16 weeks ago | Duration 0:04:16
A fast review of operators in C# followed by a number of simple Code Hunt Code Duels for practice.
Office Mix Use

- Catching up after an absence
- Previews
- Review
Custom Sector

HONORS PROGRAMMING

SELECT SECTOR

00 | 00/06 | 01 | 00/03 | 02 | 02/04 | 03 | COMPLETE

04/04 | SECTORS UNLOCKED | 01/04 | SECTORS COMPLETED

Microsoft Research
Custom Sector

• Easily adapted to the curriculum topics
• Leveled according to student ability and experience
• Can build on lecture examples and demos
Sample Puzzle

```java
using System;
public class Program {
    public static double Puzzle(double x) {
        return 0;
    }
}
```
# Class Dashboard

## ZONE DASHBOARD

<table>
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<th>users</th>
<th>rank score</th>
<th>Pazu 001</th>
<th>Anastasiya 002</th>
<th>Colin 003</th>
<th>Ellie 004</th>
<th>usharma 005</th>
<th>Anastasiya 004</th>
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<th>Kwag 008</th>
<th>Michael 009</th>
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### CODE HUNT
Observations

• Useful (along with Mixes) for students who want to move faster than the class
• Students ask to be taught material to move forward in Code Hunt
• Students working in teams seem to learn more and faster
• Girls seem to enjoy Code Hunt as much as boys
Student Reactions

- Students like doing Code Hunt
  - “Can we have the final on Code Hunt?”
  - “Are we doing more Code Hunt today?”

- One student asked the other CS teacher to teach her loops just so she could progress further sooner in the open sector.

- Students start “playing” when they get to class if no other task assigned
Questions?