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

Office Mix

Office Mix
Customer Preview

Gallery | My Mixes | Alfred Thompson

form.

Details | Analytics | Presentation | Video | Delete

If Statements and Boolean Expressions

By Alfred Thompson

Created 16 weeks ago | Duration 0:07:50 | 87

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.

Details | Analytics | Presentation | Video | Delete

Simple Arithmetical Operations

By Alfred Thompson

Created 16 weeks ago | Duration 0:04:16 | 15

A fast review of operators in C# followed by a number of simple Code Hunt Code Duels for practice.

Details | Analytics | Presentation | Video | Delete

CODE HUNT

Office Mix Use

- Catching up after an absence
- Previews
- Review

Custom Sector

CODE HUNT

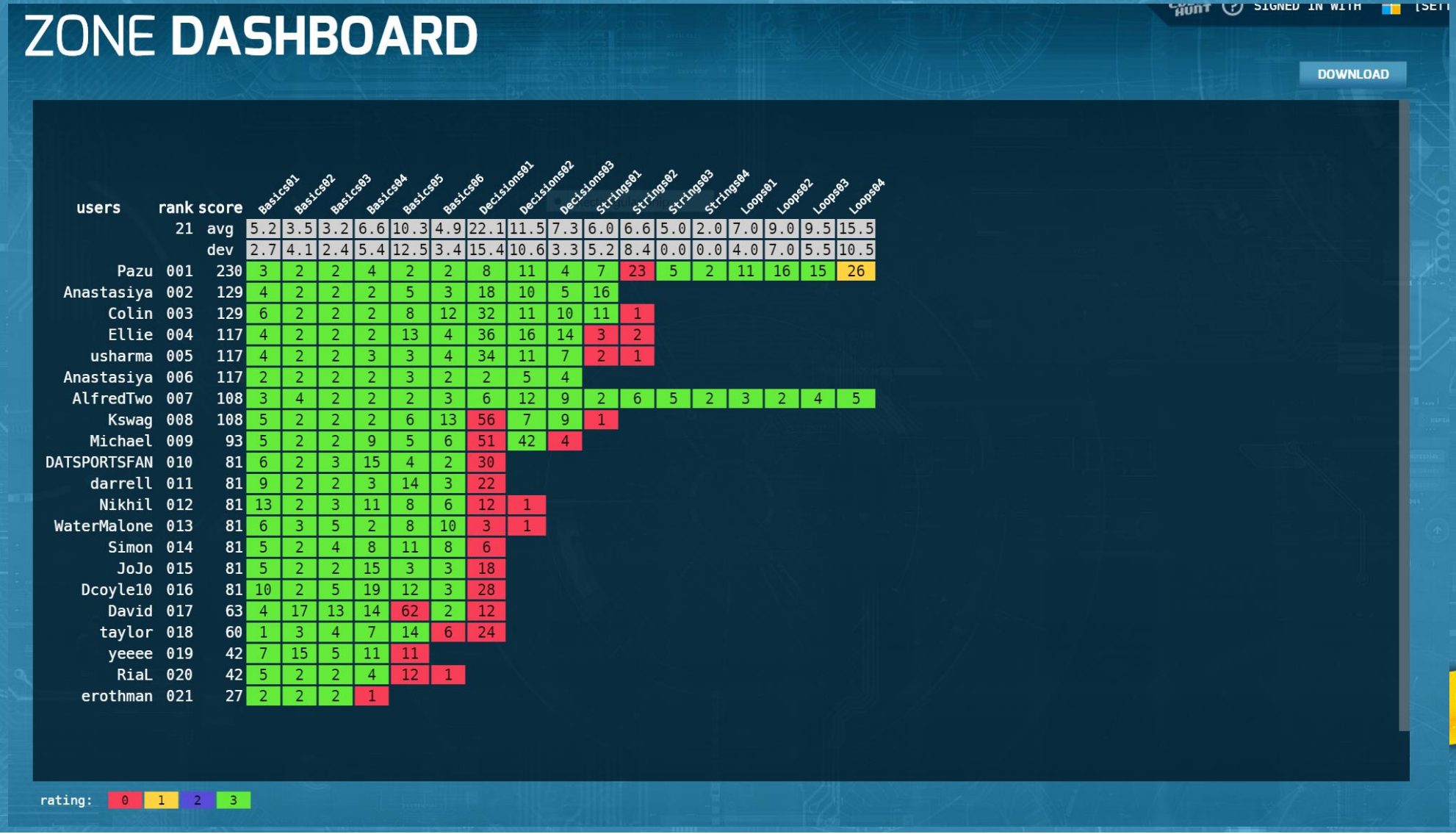
Custom Sector

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

Sample Puzzle

CODE HUNT

Class Dashboard



users	rank	score	Basics01	Basics02	Basics03	Basics04	Basics05	Basics06	Decisions01	Decisions02	Decisions03	Strings01	Strings02	Strings03	Strings04	Loops01	Loops02	Loops03	Loops04
21	avg		5.2	3.5	3.2	6.6	10.3	4.9	22.1	11.5	7.3	6.0	6.6	5.0	2.0	7.0	9.0	9.5	15.5
	dev		2.7	4.1	2.4	5.4	12.5	3.4	15.4	10.6	3.3	5.2	8.4	0.0	0.0	4.0	7.0	5.5	10.5
Pazu	001	230	3	2	2	4	2	2	8	11	4	7	23	5	2	11	16	15	26
Anastasiya	002	129	4	2	2	2	5	3	18	10	5	16							
Colin	003	129	6	2	2	2	8	12	32	11	10	11	1						
Ellie	004	117	4	2	2	2	13	4	36	16	14	3	2						
usharma	005	117	4	2	2	3	3	4	34	11	7	2	1						
Anastasiya	006	117	2	2	2	2	3	2	2	5	4								
AlfredTwo	007	108	3	4	2	2	2	3	6	12	9	2	6	5	2	3	2	4	5
Kswag	008	108	5	2	2	2	6	13	56	7	9	1							
Michael	009	93	5	2	2	9	5	6	51	42	4								
DATSPORTSFAN	010	81	6	2	3	15	4	2	30										
darrell	011	81	9	2	2	3	14	3	22										
Nikhil	012	81	13	2	3	11	8	6	12	1									
WaterMalone	013	81	6	3	5	2	8	10	3	1									
Simon	014	81	5	2	4	8	11	8	6										
JoJo	015	81	5	2	2	15	3	3	18										
Dcoyle10	016	81	10	2	5	19	12	3	28										
David	017	63	4	17	13	14	62	2	12										
taylor	018	60	1	3	4	7	14	6	24										
yeeee	019	42	7	15	5	11	11												
RiaL	020	42	5	2	2	4	12	1											
erothman	021	27	2	2	2	1													

rating: 0 1 2 3

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?