

RTX Gamification Classroom



GAMING ED.

CAPSTONE 2022

The Team



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Sponsor



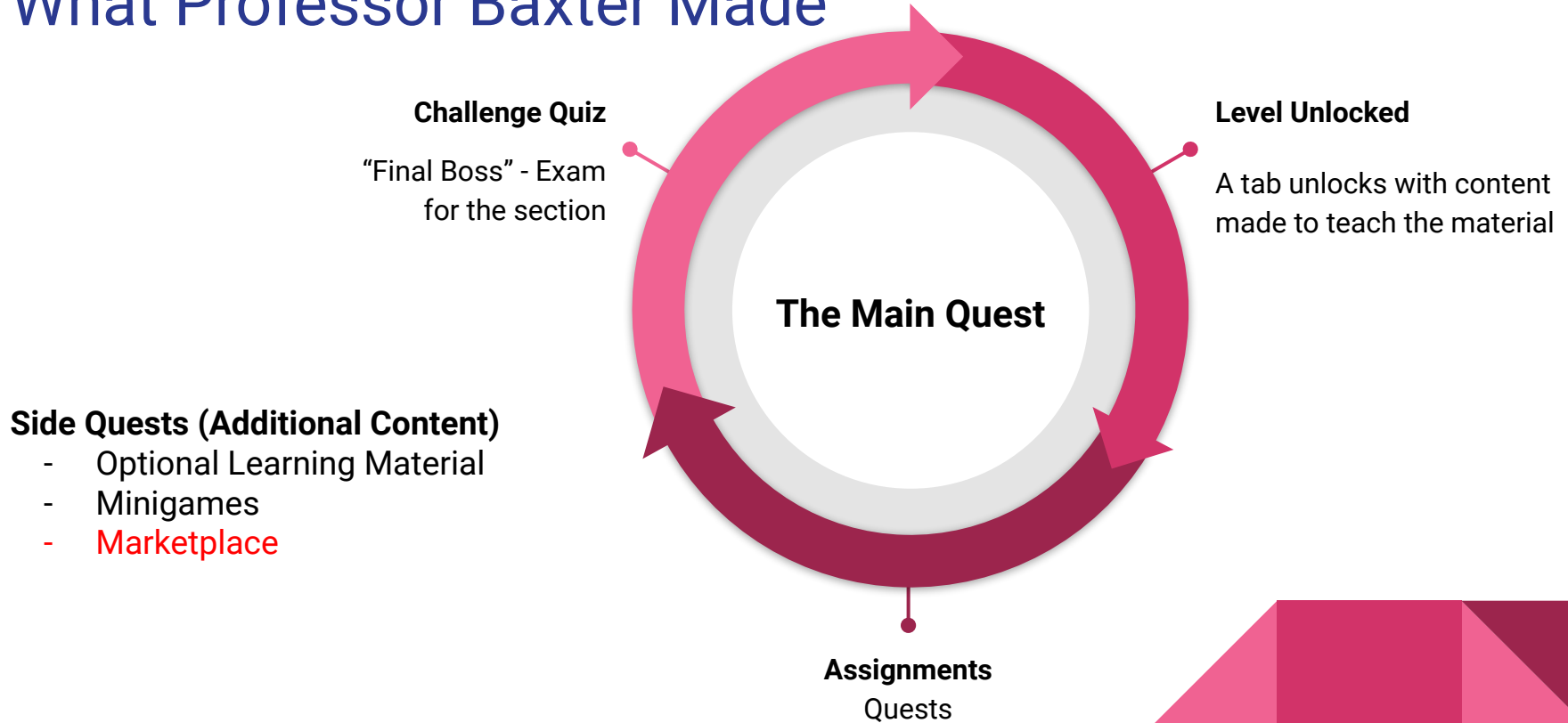
Professor Terry E Baxter

- Civil and Environmental Engineering
- Northern Arizona University

- Creator of the RTX Gamification Classroom Project

The Problem

What Professor Baxter Made



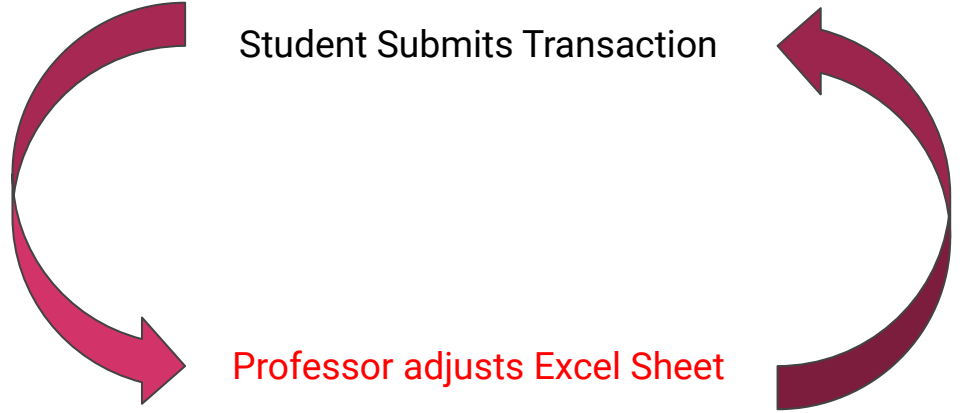
The Unsustainable Workflow

Currency

- Incentivises Success
- Obtained after successful assignments and quizzes

Marketplace Transactions

- Buy more attempts on challenge quizzes
- Extra Information
- Formula Sheets
- Gifting Coins
- ...Much more



Our Solution

A New Learning Management System

The Core

- A gamified way to create and take classes
- Ability to automate marketplace actions

Professors -> **Administrators**

Students -> **Players**



Key Requirements and Project Components

Main Components

Desktop Application

- Used by the administrators to create course

Website Application

- Used by players to take course

Functional Requirements

Non-Functional/Performance Requirements

Environmental Requirements

Functional Requirements

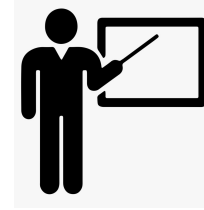
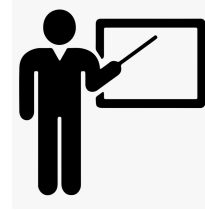
Administrative Controls

Desktop Application



Super Admin Roles:

- Creation/Deletion of Admin
- Deletion of Courses
- Admin Temporary Username/Password



Admin role:

- Set New Username/Password
- Creation/Deletion of Courses
- Customizing Admin Profile



Creating Course Content

Desktop Application

Creating Levels:

- Given option for marketplace and discussion board
- Drag and drop icons located on screen (lessons, tests, assignments, level #)
- Inside icons teachers input data and criteria for unlocking next level

Creating Marketplace:

- Link marketplace items to tests and quizzes
- Input advantages that can be bought

Diagram of Course Creation

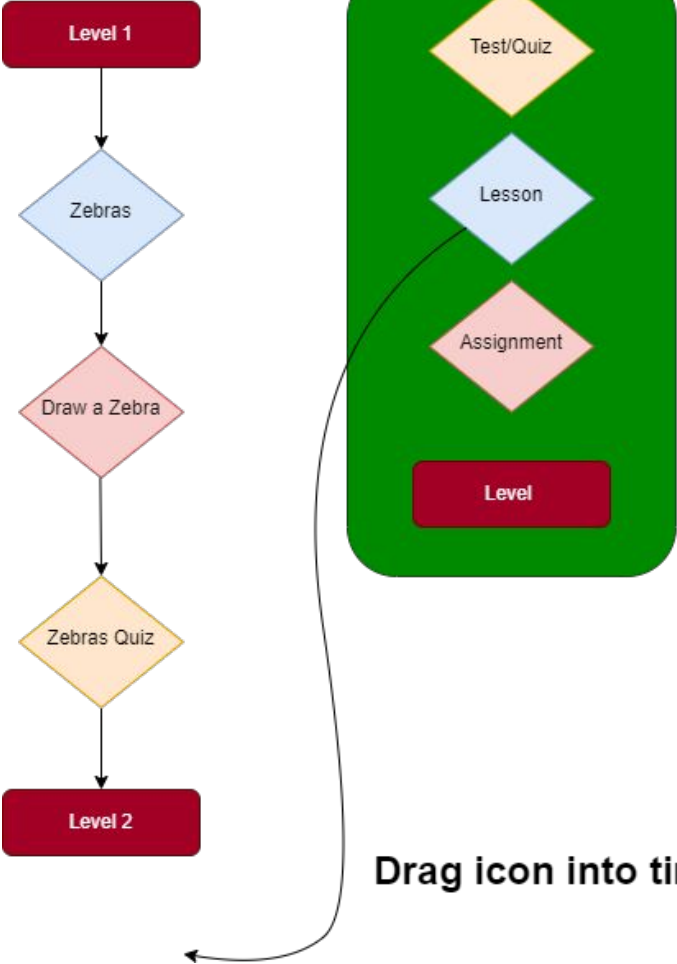




Diagram of Icon Input

Enter name: _____

Time to Take (in minutes): (enter N/A if no time)

Due Date: Start Date  End Date 

Weight in %: _____

Attempts to Take (enter number): _____

Unlock Criteria (enter name of assignment that has to be completed to unlock) : _____

Name of question: What color are zebras?

Answer: Black with white stripes Correct Answer:

Answer: White with black stripes Correct Answer:

Amount of points for question(enter number): _____

Manage Existing Course

Desktop Application

Editing Levels in Course

- Adding/Deleting Levels
- Moving Levels
- Editing Content in Icon
- Editing Marketplace Functionality

Other Functionalities

- Manually Opening/Closing Course Content
- Adding/Removing Players
- Emptying Player Information From Course

Completed Assignments

- Manual / Automatic Grading
- Modifying Existing Grades
- Exporting Player Grades

Player Interaction

Website

Profile Management

- Player login with username and password
- Personalizing player profile

Interacting with Course Material

- Player will go into level that needs to be completed
- Player purchases from marketplace



Non-Functional and Environmental Requirements

Other Requirements

Non-Functional Requirements

- Ease-of-Use
- Speed of submission (desktop application)

Environmental Requirements

- Windows PC only (desktop application)
- Internet connection required
- Sponsor very lenient

Security Risks

Most Plausible Risks

Leaked Account Information

- Project only accessible with accounts
- Team has minimal experience with cybersecurity

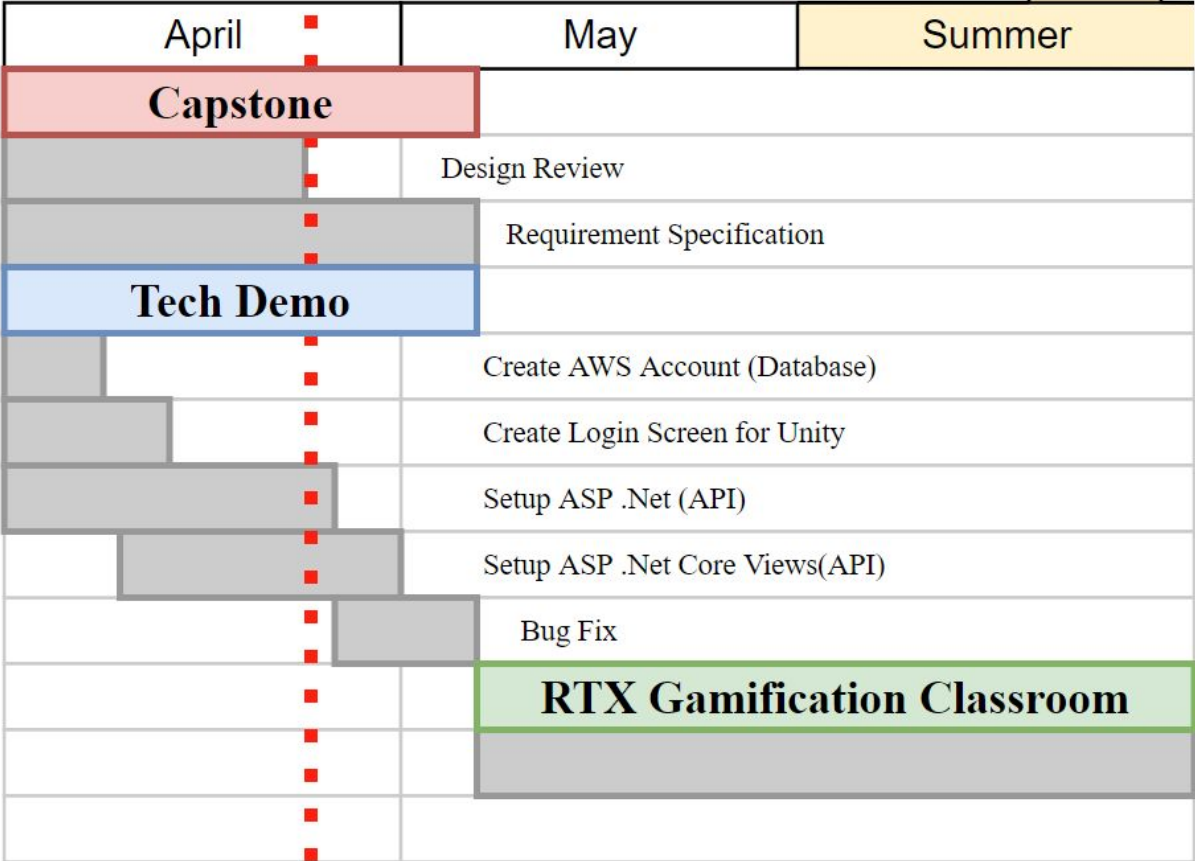
Compromised Data Integrity

- A lot of actions happen at the same time
- Careless programming errors can not be tolerated



Schedule

Today





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Thank You
