

Content Independent Classroom Gamification

Team Name: The Missing Semicolons

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Mentor: Chris Cain

Instructor: Behrooz Shirazi

Shirazi: Somehow I think the meeting discussions do not match what is in the project description. For example, I was under the impression that you will be developing some entirely new games, but there is no mention of such a thing in this project description. I think you need to re-write the project description in consultation with Chris. Also, there is no mention of the "mother-game" or the incremental, where you will initiate a game, keep track of users activities, keep track of users accumulated points, criteria for advancing to incremental levels in the games, etc, etc.

A. Project Description

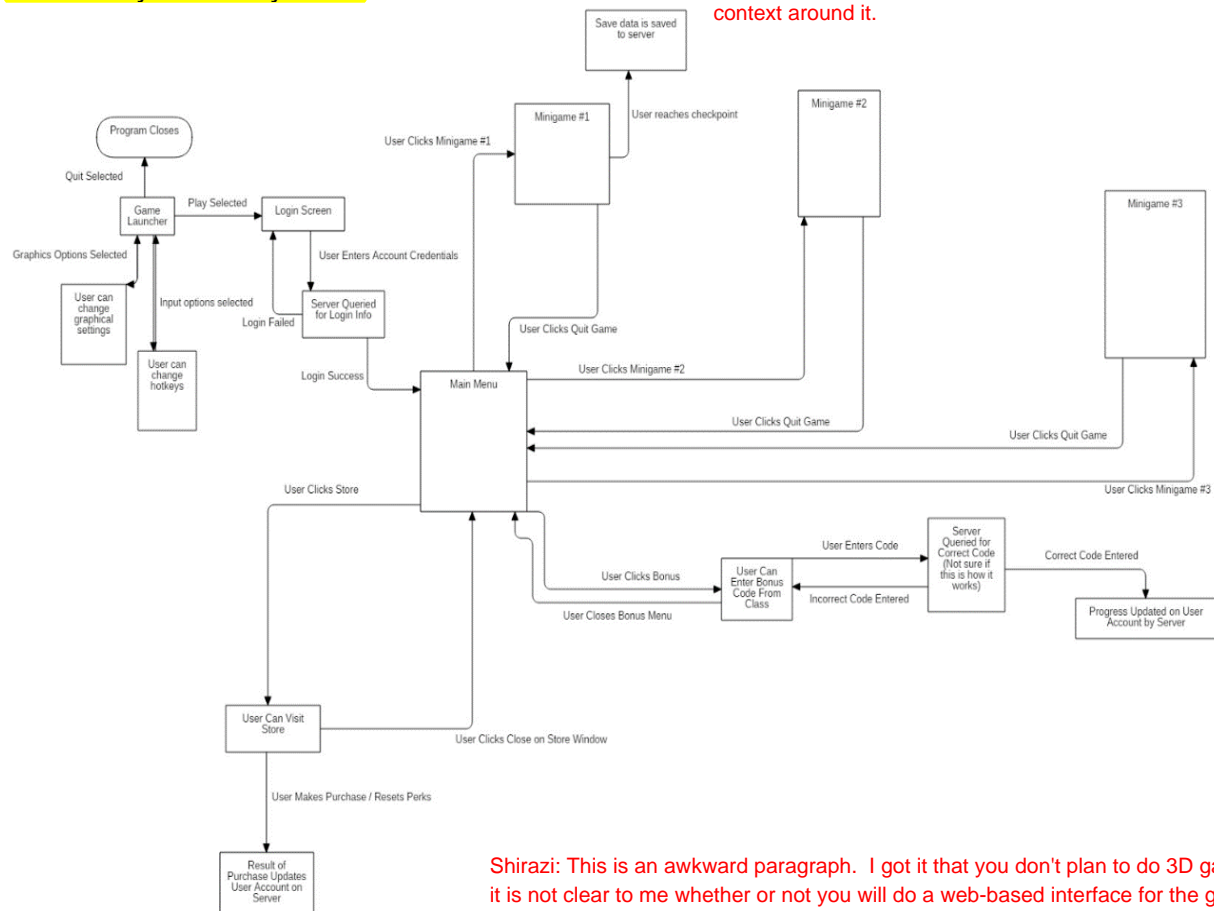
Content-Independent Classroom Gamification will be used to show many students that it is possible to learn and engage in a lecture hall setting and having fun while doing so. Gamification is a technique used to motivate and influence students to pay attention in class, engage with peers, and learn along the way. A senior design team last semester began to develop a gamification environment using Unity and MongoDB, and this year our team will be building on and fixing what teams in previous years have come up with. This project is a good fit for students who have an interest in game development and want to further their knowledge in the process. Since many of us in the group are unfamiliar with the Unity this will be a big opportunity for us to learn more about creating a game using the engine.

The gamification as of now includes three incremental minigames that may appeal to the various users. The first game has somewhat of a Pokémon style of play feel to it, you start off as a boy lost in a town and you interact with objects when you walk into them or click them with your mouse. Our second game is the well-known logic-based puzzle game called sudoku, we provide the user with three options of difficulty and the higher difficulty you choose will earn you a greater amount of coins. Lastly, for our final game we have a space shooter game where you are looking to shoot and destroy enemies in voyage throughout space. The space game is currently very buggy and will require some tweaking and additions throughout the later developments of our project.

These mini-games have been taken into account different player types and preferences so that the game is not centered around one general audience. Students make incremental progress by playing any of the three games. They earn active playing time by showing up to class and participating. During class time, if the student is paying close attention and following along with the lecture or discussion they will see a keyword that will be used to earn them some stamina or prize for the day. In order for this to happen the professor will have to put in the special keyword in the class lecture slides or notes.

The game and classes are intertwined. Progress in class will tie into progress in the game in new and exciting ways. As of now the game is being deployed only in Computer Science 111 this spring. Students are required to create an account and begin playing the game.

Game Play Hierarchy Chart



Shirazi: First, this chart is more of a solution approach instead of part of project description. Second, you can't just plug in a chart in the middle of a document without explaining it as well as the context around it.

Shirazi: This is an awkward paragraph. I got it that you don't plan to do 3D games, but it is not clear to me whether or not you will do a web-based interface for the games. It seems from the meeting discussions you WILL do a web interface (this needs to be clarified).

One key limitation of the final product is that there is no web based application for the game play. As of now every user has to start the game by using the sent out package of executables. Another key limitation right now is that if there's ever a bug fix everyone playing the game has to redownload the newest and latest version of the game. We currently don't have the knowledge or tools to build a web based application that will automatically update the game if there is ever a bug fix. These are a few items that we will not be able to include in our product as of now, but maybe in the coming semester. One last limitation for our final product will be 3D game design. Even though Unity allows for 3D game design we have agreed as a group that we will stick to only implementing the game in 2D.

The game is made using Unity and MongoDB. These are valuable software packages that will help a lot as we begin to develop and fix the game. As a team we will stick to using these packages and try not to implement the product using another software or framework. Unity being a great cross-platform game engine will be very beneficial to our group as we move ahead with our vision for this product. As for the backend and database design we believe that the previous teams idea of using MongoDB will be interesting. Currently not many in our team are familiar with MongoDB but we are eager to learn more about it and its usage in our game. MongoDB is an excellent open source cross-platform database program. MongoDB uses JSON-like documents with schemas.

During our design process our team will be highly involved in testing our product as we move forward with our beta release. As of now our team has noticed several bugs and we plan on fixing all of them. Before our beta is released we would like to spend some time doing some internal testing to minimize the need for bug fixing once we deploy the game. Our team will go

through a phase of unit testing to make sure every aspect of the game is working well. As we deploy the game our team will continue to conduct tests to find and patch any bugs that we may encounter. When the game is deployed we will also have a test group of students from Computer Science 111 that will be able to inform us of any uncaught bugs.

Stakeholders of our product are all team members, our mentor Chris Cain, and most importantly the students and professor of Computer Science 111. The potential users and consumers of our product would be all team members, all students and professor of Computer Science 111, and our mentor. All members of our team would use the product on a daily basis to search for bugs, implement new mini games, and lastly update the current three mini games. The students in Computer Science 111 would log onto the product in order to show they went to and participated in class. The professor for Computer Science 111 will write down certain clues for their class so they may use what they learned or saw in class that day in their gameplay. Lastly, our mentor would also use the product in order to track our teams progress in order to see how far along we have come. Our team doesn't see any special considerations of the stakeholders now.