

# **Milestone 1: Project Proposal**

CSCI 3308

Due Feb. 18, 2018

**Team/Product Name:** Cost Quest

## **Team Members:**

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**Description:**

Cost Quest is a web-based game where players are given a picture and brief description of a product, and then they are challenged to estimate a price for it. As consumers, we often run into situations where we want to buy an item but we aren't sure if the price is fair or not. With this game, you can practice guessing the price of items in order to avoid paying more than you should... in a fun and competitive way!!

Since all games are made more fun by competition, Cost Quest has a global ranking where you can compare your skills to other people based on how far off your guess was from the original price (percentage up or down). The web-game will visually display these results so you can track your progress and see what other people guessed.

We all know the feeling of satisfaction that comes with buying something and knowing that you are not wasting your money. With Cost Quest, you can build your skills and never have to pay too much for an item ever again. Create an account now and show the world who is the price master!

**Vision Statement:**

"For consumers who enjoy testing their cost estimating skills, Cost Quest is a compelling web-game that challenges players to correctly identify the price of an object being sold. Unlike *The Price is Right*, Cost Quest visually displays player progress and ranks players based on how closely they guessed the correct price."

**Motivation:**

We came up with the idea for Cost Quest because our society is largely consumer driven, meaning that people are always conscious of how much a product costs. Additionally, people thrive on competition and intellectual guessing games. Both of these intrinsic human traits mean that television game shows such as *The Price is Right* are very popular. In *The Price is Right*, contestants are challenged to correctly guess the product price in order to win cash or a prize. Our team wanted to modernize this show by making it into a web-game that allows people who watch *The Price is Right* to play a similar game themselves in the comfort of their own homes. We believe that Cost Quest will appeal to many people because it draws in two very basic human traits - competition and consumerism.

**Risks:**

1. Most our team members are only familiar with programming languages such as C++ and Python. However, a large component of our project is related to HTML and JavaScript. This may cause some difficulty for on-time completion and mean there will be a steep learning curve.
2. Based on our research, JavaScript does not directly connect up with a backend database. This implies that we will need to use PHP-MySQL, which is another whole skill set that this group is not strong in.
3. It is crucial to the success of our project that the database functionality works, so the database element could hold up progress on the rest of the project.
4. We also run the risk of having too many features. If we get carried away with all the cool data visualization we want to do with the scores of the players, we may ultimately lose hope of creating a functional project.

**Risk Mitigation Plan:**

1. Since we have started to learn HTML in class, this project is a great chance for us to improve our HTML language skill. We will use the TAs and other project teams as resources for us to ask questions and learn how to build a good web-app. Additionally, we will each do research individually on both HTML and JavaScript in order to build a stronger understanding of software development.
2. We need to do an early sprint on setting up a server side database with MySQL and PHP.
3. We need to create the simplest database possible that can still meet our needs, and we should avoid complex features wherever possible. We should make sure to ask questions to people who have experience with databases.
4. We should stay focused on our scope. We already have many complex elements to master, so we should focus on basic functionality before adding on too many features.

**Version Control:**

We will be using a Github repository as our version control system. The URL is [https://github.com/Zasmussen/CSCI\\_3308\\_Project](https://github.com/Zasmussen/CSCI_3308_Project) . Currently, we have simple folders and readme's in the repo as a starting point. Milestone deliverables are also included in our repository so everybody can access them. Eventually, as the project progresses beyond design, we will build the structure of the repository further.

## **Development Method:**

### **1. Crystal Methods Methodology**

Our team has decided to use Crystal Methods as the tool to developing our project. Crystal Methods is a family of methodologies that developed by Alistair Cockburn in the 1990s. This methodology focuses on people, interactions, community, skills, talents, and communications. Since software development teams have people with many diverse skills and projects with a lot of variation, the focus should be on the people and their own initiatives rather than the process. We believe that this methodology will be especially relevant in this project because it is very flexible.

The Crystal Methods uses a “weight” system to determine the importance of a project (i.e. Crystal Clear is for a small project and Crystal Diamond is for a critical project). However, each of these “weights” have seven common properties: frequent delivery, reflective improvement, close communication, personal safety, focus, easy access to users, and frequent integration and tests. For our project, we will implement frequent delivery by doing rapid iteration and prototyping. We will implement reflective improvement and close communication by holding team meetings at critical intervals throughout the project. As for personal safety and focus, we will listen to what each team member has to say and we will stay at task with the project at hand. We will implement easy access to users and testing by asking friends and prospective clients to try out the product even during the developmental phases.

Our team aims to improve the effectiveness of our project process by following the Crystal Methods methodology, which means high productivity and high tolerance.

### **2. Extreme Programming (XP) Methodology**

Our team has also chosen to use XP methodology in our software creation process. XP is a specific methodology within the family of Crystal Methods. This process aims to control cost, time, quality and scope in order to have efficient production. The main goal of XP is to lower the cost of change in software requirements. Communication, simplicity, feedback, and courage are all important qualities of the XP method.

We hope that by employing the Extreme Programming Methodology, we will increase the flexibility of our project and embrace change. We also believe that this method can offer a better environment for the user because of the freedom to iterate and improve.

## **Collaboration Tool:**

We have chosen to use Slack as our collaboration tool because this communication workspace is easy accessible and well structured. Slack allows the user to set reminders, organize different conversations into channels (such as #general and #random), and maintain direct communication to many different people. Additionally, we will use Doodle Poll to identify individual availability and schedule team meetings. Doodle Poll is an online scheduling tool that allows members to select their preferred dates and times.

## **Proposed Architecture:**

We will be building a web-app that challenges users to guess the prices of an array of products stored in a database. The app will be built with a front end of HTML with CSS and JavaScript. We will connect our front end to a database on the backend server running PHP to create a MySQL database. We will personally build the database of products, their respective prices, and their relevant specifications by hand.

Our web page will present the user with a user interface where they first must enter their “player name” so that their scores can be saved. Then the user will press play and be able to see the game window where static images are displayed. We will generate a queue of items in the database by 1) using pseudo random number generation in JavaScript to select random indices in the database to present to the player. 2) We will request these items from the database. All items in the database will share a common reference ID with their images which will either be stored in the database or on the server and referenced with HTML. 3) We will build a queue of these entries to subsequently show to the user (array of structs that contain text information and html links to images on the server). The app will allow the user to guess the price (only once) for each item in this queue, and sum up the net error they made on each item in the queue.

After the queue is complete, our web page will display the true costs of the items. It will also show a ranking of the top players scores (retrieved with a query or series of queries to a database) with your score compared to the scores of other players. Finally, we will store the score of the current user in the backend database.

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### Milestone 1 Proposal – Due Sunday, February 18, 11:59 p.m.

The project proposal is the first document required from the team. All the information listed below must be included and tools should be in place by the due date.

Team Name	Moniker to be used in all presentations and documentation.
Members	List of team members, first & last name.
Description	A short (2-3 paragraphs) description of the project. Provide enough information to explain what value your product will provide to users of your product.
Vision Statement	A simple, one-sentence statement describing the clear and inspirational desired state resulting from your team's efforts to create your product.
Motivation	Describe the background and reasons for developing this product.
Risks	What are the known risks that may prevent your team from completing this project on time. Risks could include: the working environment, lack of experience of the team in the area of focus, lack of access to a specific resource, etc.
Risk Mitigation Plan	A detailed plan showing how the team will mitigate each stated risk. Describe how you will succeed given the stated risks.
Version Control	Describe the version control method and repository you will be using for the deliverables created for the project. Github is strongly recommended. Once a repository is determined, you must share access to the repository with your instructor, your TA, and all your project team members.
Development Method	Which software development methodology will your team follow? Describe the methodology and the features/steps you will follow. Common methodologies include waterfall, agile/scrum, iterative, spiral, etc.
Collaboration Tool	Select a collaboration tool for team members to utilize for coordination of their work and communication among team members. Popular tools are Slack and HipChat.
Proposed Architecture	Propose an architecture for your app. What technologies will you be using on the backend? What technologies on the front end? How will they communicate with each other? Which technologies will be responsible for which functionalities?

**Submission format:** This project milestone 1 submission should be a PDF document named ProjectMilestone1\_<TeamName> (One person on the team needs to submit the document via the submission link in Moodle by the due date.)