

# CS160 - SiQuoia Cost Estimates

Version 2

Team Q06

November 20, 2013

## Project Team

Names	Roles
Joe Lee	Business Manager
Swapna Vemparala	Project Manager
Shivalik Narad	Development Manager 1
Nam Phan	Development Manager 2
Amber Wong	Risk Manager
Ryan Alcoran	Test Manager

## Project Team

Date	Reasons for change	Version
09/14/2013	Initial creation	v1
11/20/2013	Update cost estimates.	v2

# 1. Introduction

## 1.1. Purpose

The cost estimation document contains detailed estimates of the costs incurred for implementing SiQuoia based on the requirements specified by the client. It is intended for all stakeholders of the SiQuoia system.

## 1.2. Scope

This document provides a projected cost analysis of the SiQuoia quiz system. It includes the assumptions made by the project team, with regard to the costs, as well as a breakdown of the costs for various components of the system.

# 2. Assumptions

- Members of the project team will use their own computers (laptops or desktops) to develop and access SiQuoia.
- All project team members are responsible for their own access to the Internet throughout the duration of the SiQuoia project.
- The project team will be using the following tools, all of which are free software: OpenProj for project management, Eclipse and Emacs as IDEs and editors, Git for software configuration management, GitHub as a Git host, and codeBeamer as a bug tracker.
- Preparation for the project (requirements gathering) began in September 2013.
- The estimated period for the contract is October 2013 to December 2013.
- The duration of the project begins during preparation and culminates when the contract period expires.
- The cost of labor is estimated on a \$10.00 per hour basis, the minimum wage for the city of San José, California.
- All team members will be involved with the design and development of SiQuoia.
- Testing and refactoring will account for at least 70% of the development process.
- The Implementation and Testing phases will occur simultaneously.

### 3. Cost Estimations

#### 3.1. Direct Costs

Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase I: Planning			
D01	Select software tools	\$50.00	Chose tools to be used in developing SiQuoia
D02	Select programming language	\$50.00	Java language, chosen according to the technical skill set of team members
D03	Team training	\$50.00	Time spent in learning to use unfamiliar tools
D04	Tools presentation	\$50.00	Presenting the selected tools to the client for input
D05	Initial cost estimation	\$50.00	Draft estimated cost of project for the client
D06	Management	\$100.00	This includes the cost incurred for SeQuoia management
D07	Team meetings	\$30.00	Includes the costs for team meetings
D08	Client meetings	\$20.00	Meetings between client and project team between 8/22-9/20
Planning Total:		\$400.00	

Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase II: Requirements Analysis			
D09	Analyze RFP	\$30.00	Gathering requirements
D10	Client interviews	\$30.00	Gathering requirements
D11	Draft initial SRS	\$300.00	Document requirements and development plan in SRS using IEEE 830-1998 guideline
D12	Finalize SRS	\$150.00	Final version of SRS
D13	Design database	\$50.00	Design database based on requirements as listed in the SRS
D14	Mockup homepage	\$50.00	Create mockup of SiQuoia splash-screen/homepage
D15	Determine quiz topics	\$40.00	Choose subjects, topics, and subtopics for quiz question
D16	Create questions	\$100.00	Gather at least 125 questions per subtopic for quiz packets
D17	Re-analyze requirements	\$80.00	Analyze new requirements, as voted on by the class
D18	Management	\$200.00	This includes the cost incurred for SeQuoia management
D19	Team meetings	\$50.00	Includes the costs for team meetings. Based on each employee's average value of \$10/hr, which met for one hour.
D20	Client meetings	\$40.00	Meetings between client and project team between 9/20-9/30
Requirements Analysis Total:		\$1,120.00	

Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase III: Design			
D21	Write quiz code	\$150.00	Write code to select quiz packet and display a sample set of 10 questions
D22	Context model	\$60.00	Create context model between SiQuoia system and environment
D23	MVC architecture	\$60.00	Create MVC architecture of SiQuoia
D24	Process model	\$80.00	Create diagram for processes of SiQuoia
D25	Use cases	\$100.00	Create use cases for user interactions with SiQuoia
D26	Class diagram	\$100.00	Create diagram for classes of SiQuoia
D27	Architectural view of deployment	\$70.00	Create architectural view of deployment for SiQuoia
D28	Traceability matrix	\$100.00	Traceability matrix of requirements as listed in the RFP and SRS
D29	Draft detailed design document	\$50.00	Combine all diagrams in a document, with context for each diagram
D30	Integrate quiz into website	\$100.00	Automatically load quiz upon user login to SiQuoia website
D31	Test quiz code	\$80.00	Implement tests to determine if it passes the requirements
D32	New traceability matrix	\$70.00	Refactor traceability matrix to include requirements as voted on by the class
D33	Write code for homepage	\$100.00	Add functionality to homepage (user login)
D34	Test homepage code	\$70.00	Test various inputs for logging in and ensure database is updated appropriately
D35	Redesign database	\$40.00	Refactor database based on new traceability matrix
D36	Management	\$400.00	This includes the cost incurred for SiQuoia management
D37	Team meetings	\$100.00	Includes the costs for team meetings. Based on each employee's average value of \$10/hr, with weekly meetings of at least one hour each, for two weeks.
D38	Client meetings	\$50.00	Meetings between client and project team between 9/29-11/03
<b>Design Total:</b>		<b>\$1,780.00</b>	

Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase IV: Implementation			
D39	Develop code	\$4,000.00	Write the code necessary to implement essential SiQuoia requirements (each requirement is a milestone)
D40	Systems administration	\$512.00	G/LAMP server stack (GNU/Linux, Apache2, MariaDB, PHP) setup, configuration, and maintenance.
D41	Code review	\$512.00	Code review by team members after each milestone is met
D42	Management	\$512.00	This includes the cost incurred for SiQuoia management
D43	Team meetings	\$200.00	Includes the costs for team meetings. Based on each employee's average value of \$10/hr, with weekly meetings of at least one hour each, for four weeks.
D44	Client meetings	\$40.00	Meetings between client and project team between 10/23-11/28.
<b>Implementation Total:</b>		<b>\$5,776.00</b>	
Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase V: Testing			
D45	Test plan	\$500.00	Create a test plan
D46	Test development	\$750.00	Create test cases
D47	Test execution	\$750.00	Run tests
D48	Test result analysis	\$500.00	Determine which defects should be fixed, rejected, or deferred
D49	Bug fixes	\$1,000.00	Development team fixes defects found from testing
D50	Defect retesting	\$1,000.00	Once a defect has been dealt with, it is retested
D51	Management	\$300.00	This includes the cost incurred for SiQuoia management
D52	Team meetings	\$30.00	Includes the costs for a one-hour team meeting between two development managers and test manager.
D53	Client meetings	\$20.00	Meetings between client and project team between 11/20-11/28
<b>Testing Total:</b>		<b>\$4,850.00</b>	
Direct Costs			
Number	Item Type	Cost Estimation	Explanation
Phase VI: Deployment			
D54	Deploy SiQuoia	\$500.00	Present the SiQuoia game to client and launch it live
D55	Management	\$100.00	This includes the cost incurred for SiQuoia management
D56	Team meetings	\$50.00	Includes the cost for a meeting of all five team members for one hour.
D57	Client meetings	\$10.00	Meetings between client and project team between 12/01-12/03
<b>Deployment Total:</b>		<b>\$660.00</b>	
<b>Total Direct Cost:</b>		<b>\$14,586.00</b>	

Indirect Costs			
Number	Item Type	Cost Estimation	Explanation
I01	General and administrative	\$600.00	This includes the salaries for the management, HR, finance, and legal departments
I02	Software	\$256.00	This includes the costs of software that must be installed in order to carry out the project
I03	Equipment	\$40.00	Used computer purchased for use as server.
I04	Rent	\$156.25	This includes the rent the team members need to pay for the workplace. For this project, the team members will work online at home or in classrooms on San José State University campus. Time at home spent on project is approximately 30 minutes per day, or 1/48th of the total time spent living there. Average rent for SiQuoia's five employees is \$500/month, which three months spent on the project. $5 \times (1/48) \times (500) \times 3$
I05	Insurance	\$1,000.00	This includes the total Insurance cost for SiQuoia
I06	Taxes	\$1,800.00	This includes the taxes incurred for SiQuoia
<b>Total Indirect Cost:</b>		\$3,852.25	
<b>Overall Total Cost:</b>		\$18,438.25	