

System and Software Architecture Description (SSAD)

Cash Doctor 3.0 Mobile APP Team 12

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Version History

Date	Author	Version	Changes made	Rationale
10/13/14	Kshama Shreya	1.0	Using the SSAD template, determined the purpose and the status of the current architecture of the project and system analysis using use cases, artifacts and system context diagrams	<ul style="list-style-type: none">• To depict different non-technical architectural overview of the project

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1. Introduction

1.1 Purpose of the SSAD

This document provides a comprehensive architectural overview of the system, using a number of different architectural views to depict different aspects of the Cash Doctor Mobile Application 3.0. It is intended to capture and convey the significant architectural decisions which have been made on the system.

1.2 Status of the SSAD

This current status of the document provides the non-technical comprehensive architectural overview of the system, not using the different technical details as of now of Cash Doctor Mobile Application 3.0.

2. System Analysis

2.1 System Analysis Overview

The primary purpose of the Cash Doctor Mobile Application 3.0 is empowering consumers with the cost and quality of care by sharing pricing and review information of healthcare costs. Through the development of a free mobile app, we will allow consumers, globally, to share the cost of care, thus driving down the cost of medical services while improving the health of consumers. This project constitutes of three sections; section 1 will allow the consumer to capture a picture of a health care receipt via the smart phone's camera, define the charges on the bill while attaching to a provider in a geo location (resembles the current bank mobile deposit app) Section 2 will allow the consumer to lock on to providers creating a private user network with updates and comparison features and section 3 will allow users to search data posted by other users - geolocation, provider, other users, specialty, lifestyle.

2.1.1 System Context

Cash Doctor 3.0 Mobile APP System Context Diagram

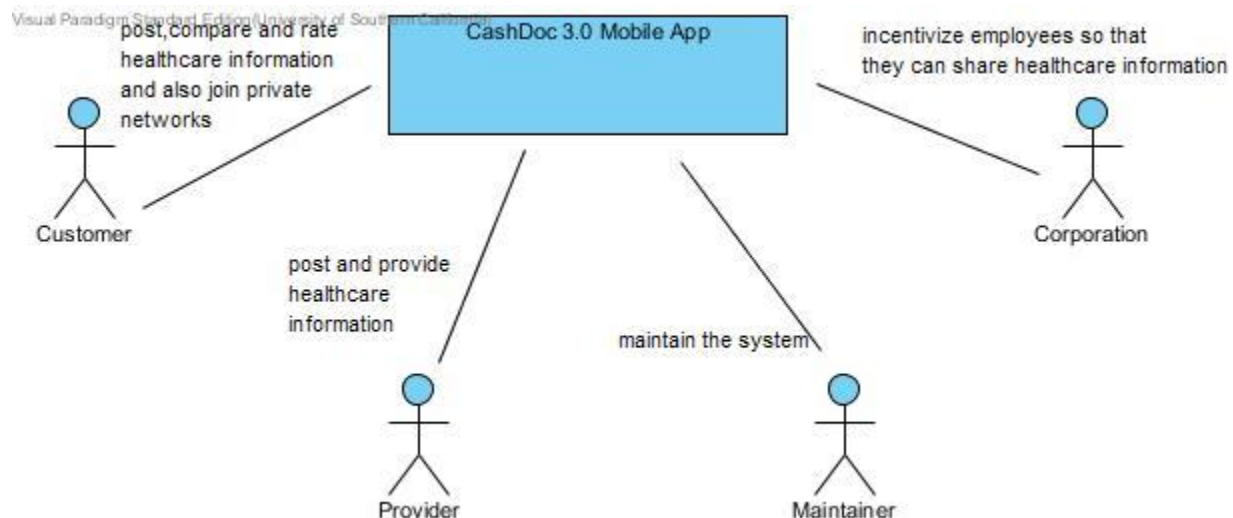


Table 1:Actor diagram

Actor	Description	Responsibilities
Customer	A customer can post, compare, rate the healthcare services.He can also join a private network.	1.Can create an account 2.Can create and edit profile 3.Can share the prices by uploading his medical bills. 4.Can search healthcare services based on location,price,services offered etc. 5.Can form a network and become part of an existing network 6.Can rate and review providers.
Provider	Provide healthcare information like price posted, videos, photos and blogs.	1.Can share prices based on the service offered. 2.Can upload pictures, videos, and blogs.
Corporation	Incentivize employees so that employees can share healthcare information	1.Encourage employees to share more healthcare information on Cashdoc so that employees gain incentives from corporations.
Maintainer	Maintain the website by approving newly registered users.	1.Approve newly registered users. 2.Filter invalid or bad content.

2.1.2 Artifacts & Information

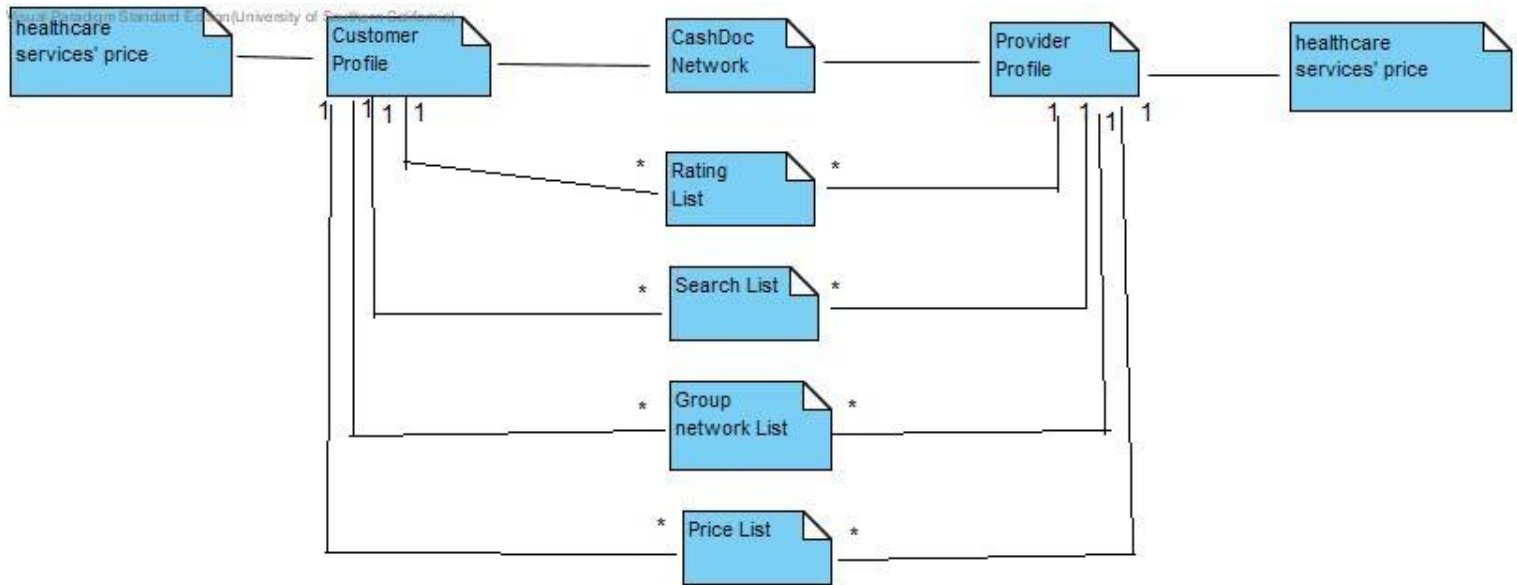


Figure 2: Artifacts and Information Diagram

Table 2: Artifacts and Information Summary

Artifact	Purpose
ATF-1:Customer Profile	Contains information about the prices the customer has shared, the networks he is part of and the providers that he has rated.
ATF-2:Provider Profile	Contains prices for each of the services they provide.They also contain blogs, videos and photos related to the healthcare services which are being offered.
ATF-3:Price List	Contains information about the price of the medical bills.
ATF-4:Rating List	Contains the rating and the reviews written by the customers about the healthcare providers
ATF-5:Search List	Contains information about the search made by the customer based on location, price, services etc.
ATF-6:Group List	Contains information about the customer or provider who is part of the network.

2.1.3 Behavior

Visual Paradigm Standard Edition (University of Southern California)

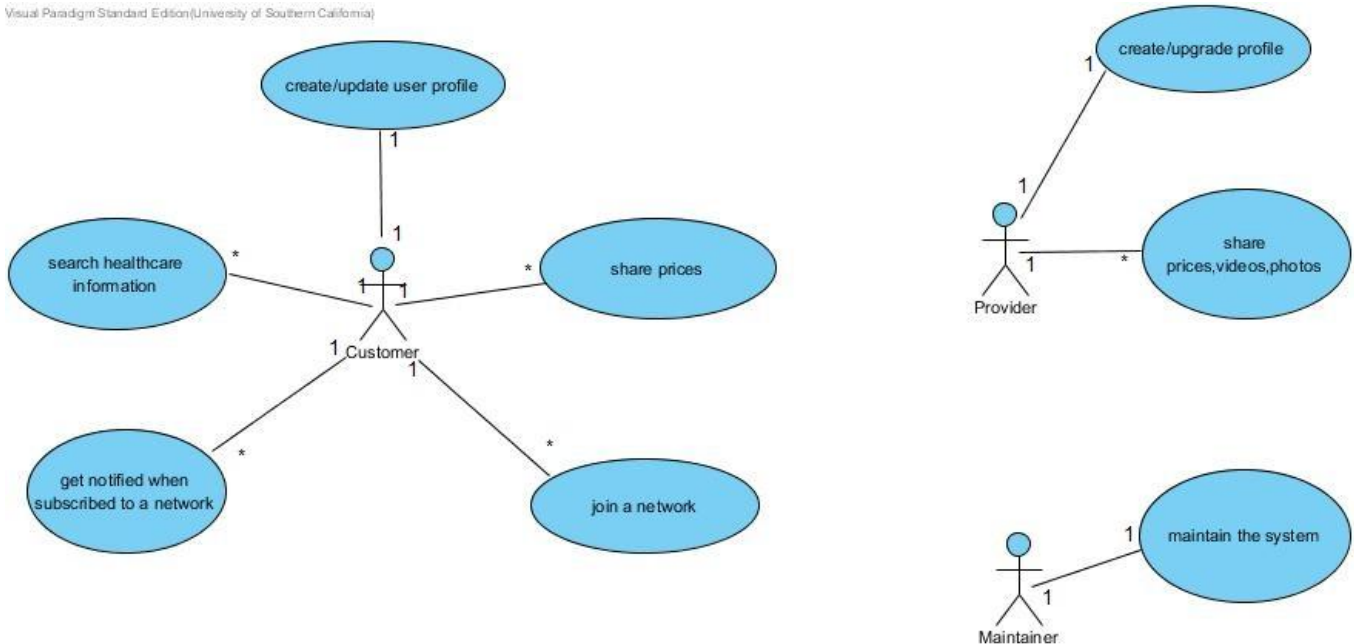


Figure 3: Process Diagram

USE-CASE GRID

ID	NAME	PRIMARY ACTORS
UC1	Create/Login customer profile	Customer
UC2	Update customer Profile	Customer
UC3	Prices shared by the customers	Customer
UC4	Search healthcare information	Customer
UC5	Create a network	Customer
UC6	Join an existing network	Customer
UC7	Get notified based on the network subscribed for	Customer
UC8	Create/Login Provider profile	Provider
UC9	Provider shares Healthcare Information	Provider
UC10	Maintain the system	Maintainer
UC11	Customer can rate/review a provider	Customer
UC12	Customer can compare medical price information	Customer

2.1.3.1 Capability

2.1.3.1.1 Create/Login customer profile, Create/Login Provider profile

Identifier	UC1,UC8:Login
Purpose	Determines if a person logging in to the system can be authenticated, and, if so, what the person's privileges are as a user of the system, i.e., what the person is authorized to do when using the system
Requirements	Authorization and Authentication
Development Risks	None
Pre-conditions	CMS database should be initialized
Post-conditions	If customer is authorized s/he is given access to “My accounts” page; otherwise, s/he is denied access to the system.

Typical Course of Action:Login-Successful

Seq#	Actor's Action	System's Response
1	[Customer] Enters a user name and password	
2	[Customer] Clicks Login button	
3		Sends username and password to the CMS server
4		[valid] Redirects the actor to “My Accounts” Page

Alternate Course of Action:Login-New Account

Seq#	Actor's Action	System's Response
1	User click “Register New Account” link	
2		Directs to the “New Account” Page
3	Customer inputs all the fields and clicks register	
4		[valid]Directs to the “My Account” Page

		[invalid]Displays error messages
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Alternate Course of Action:Login-Failure

Seq#	Actor's Action	System's Response
1-3	Refer to Typical Course of Action	
4		Displays An error message: “username or password is wrong” in a dialog box
5	Click OK button	
6		Redirects the user to the login page

Alternate Course of Action:Login:Forgotten Password

Seq#	Actor's Action	System's Response
1	User click “Forgotten username or password” link	
2		Sends An email message, providing the details of the customer's credentials to his email id.
3	User opens the email and inputs the username and password again	
4		Refer to Typical Course of Action

2.1.3.1.2 Create/Login Provider profile

Identifier	UC2
Purpose	To provide a homepage for the user wherein the user gets to know all the features available to him like price posting, viewing different networks where he can join,searching various healthcare services.
Requirements	None
Development Risks	None
Pre-conditions	The user should be logged in
Post-conditions	The user can explore all the features available to him in his

	account
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Typical Course of Action

Seq#	Actor's Action	System's Response
1	User clicks on any feature that he wants to explore	
2		System directs him to the required page
3	User modifies information in his dashboard	
4		[valid]Modified information is updated in the server [invalid]Error message is displayed.

2.1.3.1.3 Prices shared by the customers

Identifier	UC3
Purpose	Uploading medical bills so that the cost of that particular healthcare service is known.The uploading can be done manually or through an OCR capture
Requirements	None
Development Risks	OCR is not accurate and will not recognize handwritten medical bills
Pre-conditions	UC1,UC2
Post-conditions	If the price and other fields are valid, the information is updated in the database.

Typical Course of Action: Share Price manually

Seq#	Actor's Action	System's Response
1	Clicks share price manually	
2		The doctor's name,the service offered and the price field is displayed on screen
3	The user input all the fields	
4		[valid]stores information into the database [invalid]Displays error message

Alternate Course of Action:Share Price through OCR capture

Seq#	Actor's Action	System's Response
1	Clicks share price through photo capture	
2		The photo option is enabled
3	User clicks the photo and uploads to server	
4		If OCR reads the medical service and corresponding medical price correctly,updates in database Else,makes the user to try again.

2.1.3.1.4 Search healthcare information

Identifier	UC4
Purpose	Users can search doctors based on multiple conditions like locality,price,service etc
Requirements	None
Development Risks	None
Pre-conditions	UC1,UC2
Post-conditions	The user will be able to view a list of all the doctors and their price based on multiple conditions specified.

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Inputs the fields-locality,service and price and click search	
2		[valid]retrieves all the records matching the condition [invalid]Displays an error message

Alternate Course of Action

Seq#	Actor's Action	System's Response
1-1	Refer to typical course of action	
2		If no records found, then displays "No records found"

2.1.3.1.5 Create a network

Identifier	UC5
Purpose	The user can create his own network which basically contains all the doctors he would want to subscribe to.the user can also join an existing network where he would want to receive updates from.
Requirements	None
Development Risks	None
Pre-conditions	UC1,UC2
Post-conditions	The user creates a new network

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Clicks "Create new network"	
2		The name of the network is displayed
3	The user inputs a name and other information such as healthcare speciality	
4		A new network is created by creating a new entry in the database.

2.1.3.1.6 Join an existing network

Identifier	UC6
Purpose	The user can join any network that he would want to get notifications from
Requirements	None
Development Risks	None
Pre-conditions	UC1,UC2
Post-conditions	The user is part of the network which he selected.

Typical Course of Action

Seq#	Actor's Action	System's Response
1	User searches the network which he want to be part of	
2		Displays all information based on his search criteria
3	Based on the user's preference, he selects the network that he would want to be a part of	
4		The information about the network that the user wants too join is updated in the database

2.1.3.1.7 Get notified based on the network subscribed for

Identifier	UC7
Purpose	The
Requirements	None
Development Risks	None
Pre-conditions	UC4,UC6
Post-conditions	The user will be able to get up to date information about all the notification posted by their providers

Typical Course of Action

Seq#	Actor's Action	System's Response
1	User searches for the providers	
2		Retrieves list of doctors based on the conditions supplied
3	The user selected a doctor and click "notify me"	
4		The user will be notified about the doctor henceforth.

Alternate Course of Action

Seq#	Actor's Action	System's Response
1-2		
4	The user click unnotify me	
5		The user will be innotifies about the provider henceforth

2.1.3.1.8 Provider shares Healthcare Information

Identifier	UC9
Purpose	The provider will be able to share all the healthcare services that he offers in the form of blogs,videos,pictures etc.
Requirements	None
Development Risks	None
Pre-conditions	UC8
Post-conditions	The updated information is sent out to every customer who has subscribed to this provider.

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Provider uploads content in his homepage	
2		[successful]the data is stored in the database [unsuccessful]error message indicating uploading was unsuccessful

2.1.3.1.9 Maintain the system

Identifier	UC10
Purpose	The maintainer is responsible for approving the new creation requests
Requirements	None
Development Risks	None
Pre-conditions	UC1
Post-conditions	The new users are approved by the maintainer

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Checks for new requests	
2		List of new requests are retrieved
3	Maintainer approves the requests that are valid and unapproves the invalid ones	
4		The information is updated into the database

2.1.3.1.10 Customer can rate/review a provider

Identifier	UC11
Purpose	The user has the ability to rate or review a provider
Requirements	None
Development Risks	None
Pre-conditions	UC4
Post-conditions	None

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Searches for the provider to whom the review/rating needs to be written	
2		Retrieves the provider details
3	Writes the rating/review	
4		The information is updated in the database.

2.1.3.1.11 Customer can compare medical price information

Identifier	UC12
Purpose	The user has the ability to compare medical price information
Requirements	None
Development Risks	None
Pre-conditions	UC4
Post-conditions	None

Typical Course of Action

Seq#	Actor's Action	System's Response
1	Searches for the provider based on his search criteria like location,price	
2		Retrieves the provider details
3	Compares the result	