2020

TicketQ

SYSTEM REQUIREMENTS DOCUMENT

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Glossary of Terms

Ticket – Item that is measurable in the system.

Workqueue – List of tickets assigned to a group of people.

Track – The process of following a ticket through from creating to completion.

Ticket Number – Unique number assigned to a ticket.

Database – Digital space where completed tickets are stored.

Live Tickets – Tickets that are currently live in a workqueue and being managed.

Part I

Section 1 Customer Problem Statement

1.1 Problem Statement

Our customer is looking for a system that will allow them to track something, in this case we will focus on customer complaints. They want to track these to make their day to day workflow more efficient. The customer has an issue with losing track of important information. Our solution is TicketQ.

TicketQ will allow employees to create a ticket and assign that ticket value. From there they can follow the ticket through the system until it has reached a conclusion. At its conclusion the ticket will be marked as finished and stored in a database. We will store the completed tickets to be able to call on them in the future for training purposes or as proof of completion.

An example of using our system to track a customer complaint would start with an employee receiving a phone call from a customer to issue a complaint or even receiving a complaint from a customer in front of them at a store. If the complaint is not something that can be resolved by the employee immediately management would like to log these complaints and keep track of them.

The employee would receive the complaint and create a new ticket. Then the body of the complaint will be entered and assigned to a department. From there the ticket will drop into that department's workqueue and the assigned employee will retrieve the ticket following processes put in place.

At this time the department will resolve the complaint according to process put in place by management. If the ticket is able to be resolved the employee will complete the ticket removing it from all workqueues. If the ticket cannot be resolved at this point, then employee will have the option to escalate it to another workqueue where the process will continue.

Keeping closed tickets stored on a database will be essential. This will ensure that there is proof of complaints and how they were resolved. This will allow us to take further disciplinary action if needed or even use past examples as training materials for new employees.

Section 2 System Requirements

2.1.1 Functional Requirements

Number	Priority Weight	Description
REQ-1 Creation	10	Employee MUST be able to create a ticket
REQ-2 Ticket Number	6	System gives each ticket a unique number
REQ-3 Workqueue	8	Manageable list to ensure tickets get to people who need them
REQ-4 Search	1	Ability to search the system for specific tickets
REQ-5 Database	9	Storage of ticket
REQ-6 Escalate Ticket	5	Employee needs to be able to escalate a ticket to a different department or to a manager

2.1.2 Nonfunctional Requirements

Requirement	Priority Weight	Description
Functionality	4	Must be able to store data in be able to present information

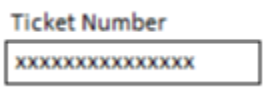
Usability	10	Accessible by every employee
Reliability	8	Data gathered must be reliable
Performance	6	Must be able to quantify data in a usable fashion
Supportability	2	Must be testable through quality assurance

2.1.3 User Interface Requirements

Number	Priority Weight	Description
REQ–7 Create Ticket Button	10	Create ticket button is one of the most important functions of the system
REQ–8 Ticket Number	7	The ticket number must be prominently displayed
REQ-9 Workqueue	8	The workqueue will be a list of open tickets in the specific department
REQ-10 Search	3	The search field will allow the search and display of open and closed tickets
REQ-11 Department Listing	5	The department the ticket belongs to should be prominently displayed

REQ-7 Create Ticket Button

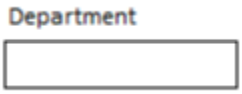
REQ-8 Ticket number



REQ-9 Workqueue

REQ-10 Search

REQ-11 Department Listing



Part II

Section 3 Functional Requirement Specification

3.1 Stakeholders, Actors, and Goals

3.1.1 Stakeholders

The stakeholders of this project are the managers and employees of the customer company. They will be the one using it and they will be the most invested in TicketQ's success. Secondly, we are stakeholders in TicketQ because we wish for our product to deliver on what we say it will.

3.1.2 Actors

The actors of the system will be people interacting with it daily: employees, managers and Human Resources.

3.1.3 Goals

The goals of the employees and managers is to create and maintain tickets. They will also want to be able to track trends and get ahead of any personnel or stock issues that arise. The goals of Human Resources will be to track trends and take any disciplinary action that is necessary if a complaint is due to a break in policy. Human Resources will be able to generate reports based on this data to predict when issues will arise and with what frequency.

3.2 Use Cases

Use Case 1 (REQ-1 Creation)

The employee or manager will receive a complaint and create a ticket in TicketQ.

Use Case 2 (REQ-2 Ticket Number)

When an employee or manager creates a ticket, TicketQ will create a unique ticket number.

Use Case 3 (REQ-3 Workqueue)

While creating the ticket the user will assign it to a department. The ticket will then fall into that departments active workqueue where tickets can be resolved.

Use Case 4 (REQ-4 Search)

Humana Resources will search for open or closed tickets to gather data for tracking purposes.

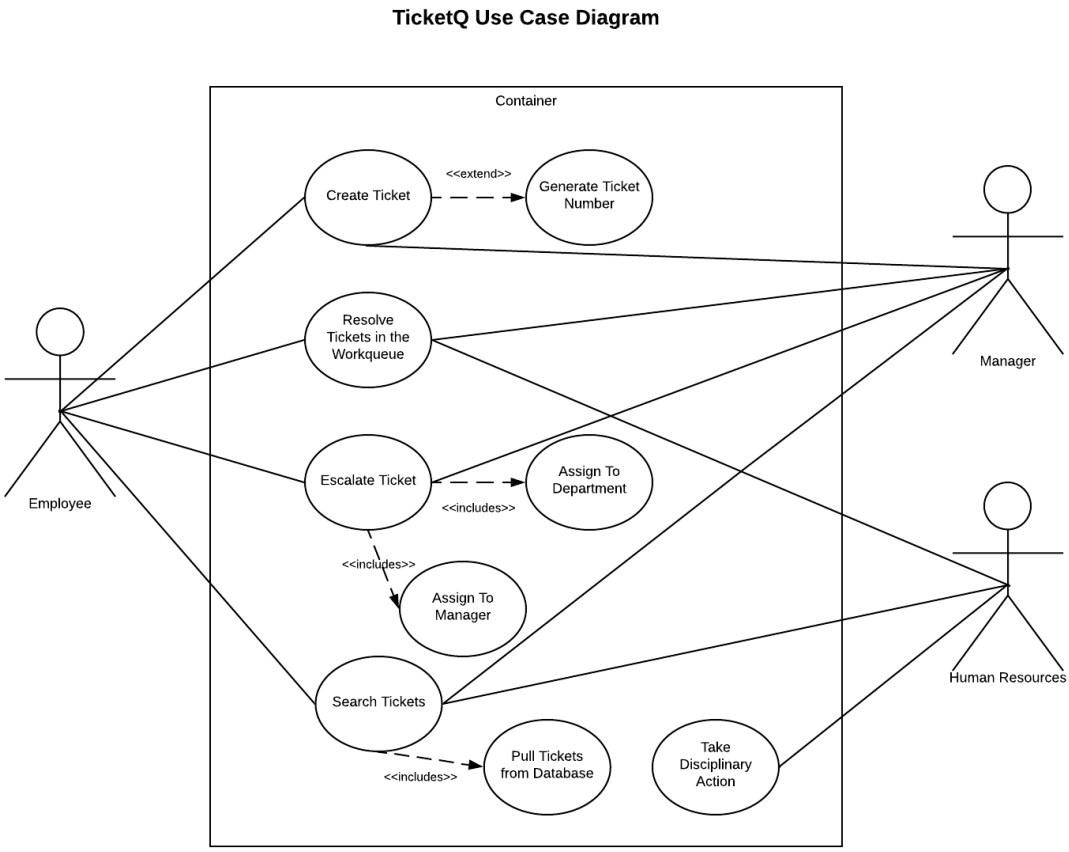
Use Case 5 (REQ-5 Database)

All users will be able to search for active or closed tickets which will be held on a database.

Use Case 6 (REQ-6 Escalate Ticket)

If there is an issue that an employee can’t resolve they will escalate the ticket either to the correct department or to a manager of the current department.

3.3 Use Case Diagram



3.4 Traceability Matrix

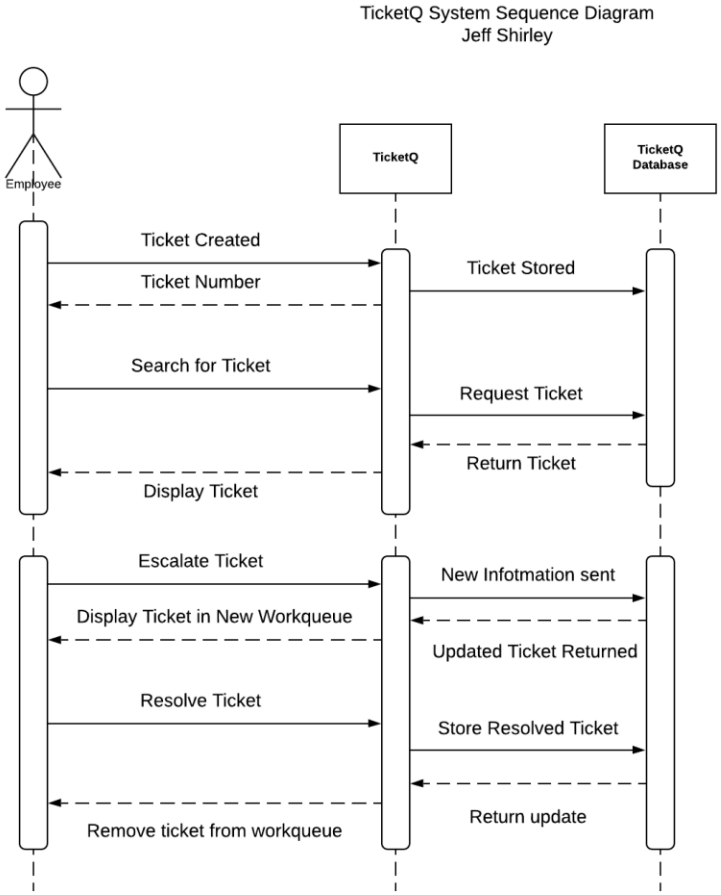
	REQ-1	REQ-2	REQ-3	REQ-4	REQ-5	REQ-6	REQ-7	REQ-8	REQ-9	REQ-10	REQ-11
UC 1	X	X					X	X			
UC 2		X						X			
UC 3			X		X				X		X
UC 4				X	X					X	
UC 5				X	X					X	
UC 6			X			X			X		X

3.5 Fully dressed Description

When an employee creates a ticket, they will start with the complaint. They will receive the complaint and enter the information into they system. This information will include complaint and department. Information like ticket number, date created, and who created the ticket will be auto populated by the system.

Once the ticket is created and a department is assigned it will drop straight into that departments workqueue. In the workqueue an employee will be able to open the ticket and add notes, resolve the ticket, or escalate to a manager or new department.

3.6 System Sequence Diagram



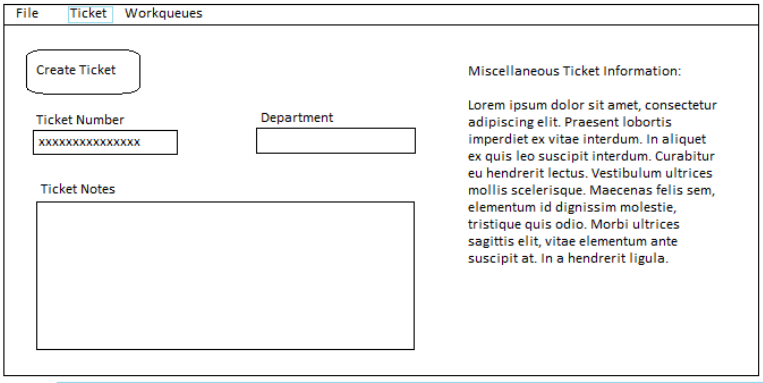
Section 4 User Interface

4.1 User Interface Specification

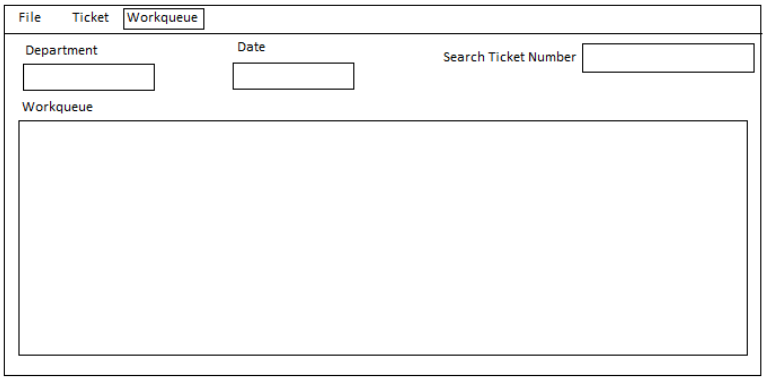
The user interface for the Ticket window will allow users to view tickets and also create tickets. The user will be presented a blank form. They will choose the department the ticket belongs to. They will enter the information of the ticket such as: date and time complaint was received, who filed the complaint, nature of the complaint, and any other miscellaneous information required by process. Once all the information has been entered, they can click the create ticket button. This generates a unique ticket number and fill in information about the ticket such as the date and time the ticket was created.

The user interface for the Workqueue window will display all live tickets. It can sort tickets by date which is chosen by the user. The workqueue displayed will be set by the user. From this screen the user can also search for tickets using a date, ticket number or department. When a search is initiated then the results will be displayed in the workqueue window. When a user double clicks on a ticket it will take them to the ticket window to display the specific information on that ticket.

4.2 Preliminary Design



Ticket Screen



Workqueue screen

4.3 User Effort Estimation

Use Case 1 – User will click Ticket in menu bar to be taken to the ticket screen. They will click the dropdown menu and select the department. The user will click into the ticket notes box, then enter information about the ticket. Finally, the user will click the create ticket button and be given a ticket number. 5 Clicks and keystrokes depend on the amount of notes entered.

Use Case 3 – User will click Workqueue in the menu bar to be taken to the workqueue screen. The use will then click the department drop down and choose which departments workqueue to display. The user will then click into the date box and enter a valid date. TicketQ will then display all live tickets in that department. The user can double click on a ticket and be taken to the ticket screen to view the tickets information. 6 clicks and at least 8 keystrokes to enter a valid date.

Part III

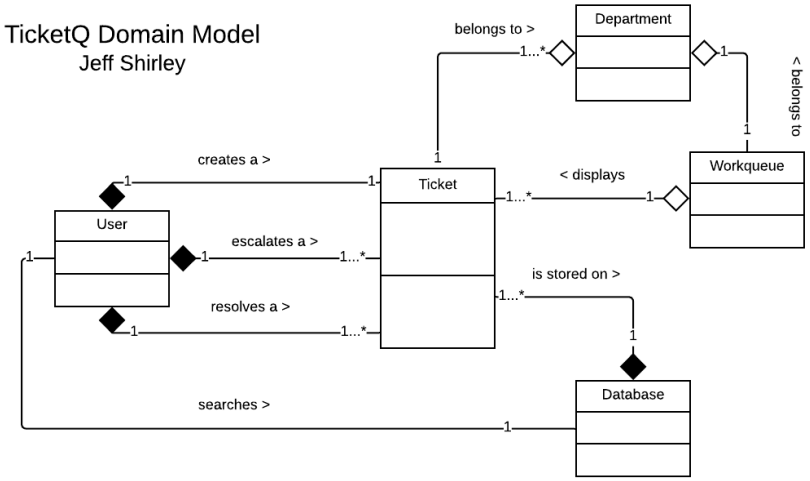
Section 5 Doman Analysis

5.1 Domain Model

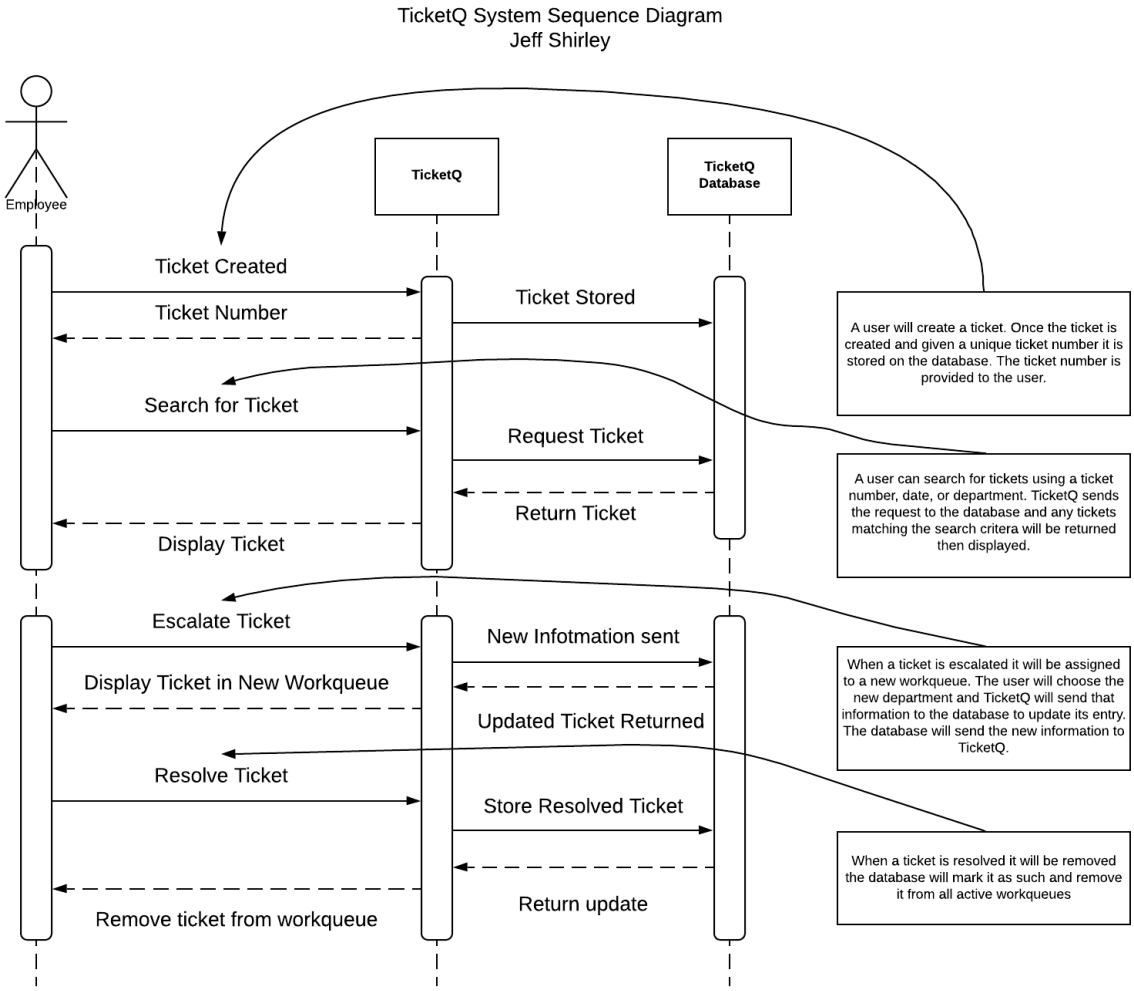
The TicketQ Domain Model is a display of 5 concepts: User, Ticket, Department, Workqueue, and Database. The User has many connections with the Ticket since the user will be manipulating the ticket multiple times. The User has a composition relationship with the ticket since a ticket would not exist if the user did not create it. The user can also search the database.

The Department holds ownership of the Tickets and the Workqueue. It is the defining characteristic of the ticket and allows tickets to be grouped in similar areas. The Department has an aggregation relationship with both the Ticket and the Workqueue since both could exist without the department. We also see that the Workqueue has an aggregation with the ticket, we see that the ticket exists on the Database without being assigned a workqueue after it is resolved.

The Database has a composition relationship with the Ticket because if the ticket isn't stored on the database than it no longer exists.



5.2 System Operations Contract



Section 6 Project Size

6.1 Project Size Estimation

It is hard to estimate the size of this project. The bulk of the space will be taken by the database and that depends on how many tickets are stored. At the beginning I would estimate a few GB but that could quickly grow.

Section 7 Plan of Work

2/18 – Start work on TicketQ database

3/2 – Start work on TicketQ UI

3/27 – Have first demo ready to create and store ticket

4/6 – Work on other manipulations of tickets: escalate, resolve, and search

Until Final Demo due – Refine UI and code

5/11 – Final Demo

References

1. Lucidchart - https://www.lucidchart.com/
2. Course Textbook
3. Course Lectures

Project Management

TicketQ v1 – 02/02/2020

TicketQ v2 – 02/11/2020

TicketQ v3 – 02/17/2020

TicketQ v4 – 02/24/2020