CEN4010 Principles of Software Engineering

Spring 2018

Milestone 1: Project Proposal and High-level Description

Group 9: Hardware Nanny

Alicia Mitchell (amitch41@fau.edu)

Sergio Ramirez

Bradley Rubenstein

Guimel Gonzalez Hernandez

Ryan Juraidini

Monday Feb. 12th, 2018

Revision 1

\*\*\*Very Useful Example Document\*\*\*

<https://www.cs.uic.edu/~spurohit/documents/Requirements%20Document.pdf>

1. **Executive Summary (Sergio)**

Product Name: Hardware Nanny

1. **Competitive Analysis (Ryan)**

Feature Comparison

Professor stated: that she wants us to create a table with at least 3 similar companies where we compared our software planned features to them.

Additionally, she wanted a brief description of what special and distinct features and aspects make our planned software standout at least 300-400 words.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Safety |  |  |  |  |
| Response Time |  |  |  |  |
| Cost |  |  |  |  |
| Applicability |  |  |  |  |
| Difficulty of Use |  |  |  |  |
| Interface |  |  |  |  |
| Review of Items Capability |  |  |  |  |
| Special Feature |  |  |  |  |

NetSuite

<https://forms.netsuite.com/app/site/crm/externalleadpage.nl/compid.NLCORP/.f?formid=4412&h=3416b0b9d380b9adfc5d&leadsource=msn1270E042814SH&cid=ppc_msn_24wd&msclkid=00a623e03f291925badd799634c17e8b&redirect_count=1&did_javascript_redirect=T>

Wasp Barcode Technologies

<http://www.waspbarcode.com/inventory-control?utm_source=capterra&utm_medium=cpc&utm_campaign=review%20sites>

Cin7

<https://www.cin7.com/free-demo/?utm_source=capterra.com&utm_medium=cpc&utm_campaign=Inventory%20Management&utm_content=free-trial&pi_campaign_id=91404>

Fishbowl Warehouse

<https://www.fishbowlinventory.com/quick-tour/fishbowl-warehouse-management-software/?utm_source=Capterra&utm_medium=CPC&utm_campaign=Capterra.Inventory.Management>

\*Ability to collect data

Algorithms estimates parts needed per student per class data that’s compared to on average who drops the class and average enrollment as well as students who need replacement parts during a semester.

\*Collect data & find the best and most cost-effective parts with feedback

Ability to review parts to access if they needed to not given in the next semester due to too many student/facility issues determine the most effective and budget friendly hardware to keep on hand

Base minimum to cover the class and

Safety number

Cheapest options

Research hardware budget estimator of items

1. **Data Definition (Alicia)**

Part Request: Reflects the need of the student to get a part status of need can be adjusted as well viewable by both the student to check if request has been fulfilled or denied and administered by the professor on Whether to respond by ordering the part or notifying the student that the request cannot be fulfilled

Part Review: A place for staff and students to comment on part issues and a way to analyze if the part contributed an appropriate solution to the user’s institutions needs

Product Name Client: Is available to students and staff based on permission, Perry and selected staff administer this client and monitor activates and update information and provide authorization with ease. Available on permissible computers in the Engineering Labs and to the Admin Team

Status: Is the present state of a part which can be ( out of stock, Available, Requires admin permission, Coming Soon) this indicator triggers various events including allowing a student to order a part or preventing them and resulting in other procedures such as ordering a the part or recommending them to contact Perry otherwise the part is ordered and the system quantity is updated accordingly

Quantity on Hand: Is the number of a particular part-based admin manual entry, automated new order update entry when part is received and in stock and a basis to compare with the frequency of when quantity on hand is stagnate or is regularly depleted As a way to inform admin how often the item is used/or lack thereof.

1. **Overview, Scenarios and use cases (Brad)**

Admin orders parts

Admin approves a part request

Admin rejects a part request

Admin enters in a new part

Admin searches for a part

Admin reviews and approves use time slot of 3D printing

Admin Review opportunity (Ability to continue and stop future purchases or use of part)

Admin manually updates part information

Student makes a part request

Student Checks the status of a part request

Student/Faculty Review Opportunity

Student makes a new part request

Student Searches for a part

1. **List of high level functional requirements (Brad)**

The System aims at providing an efficient interface to the user for managing of inventory, it shall also provide the user varied options for managing the inventory through various functions at hand. The ingredient levels are continuously monitored based on their usage and are checked for the threshold levels in the inventory and accordingly the user is alerted about low levels of certain ingredients. The design is such that the user does not have to manually update the inventory every time, the System does if for the user.

The System calculates and predicts the amount of usage for specific set days that are pre-set by the user(admin) , it also alerts the user of an impending action to order ingredients before the specific day set by the user. Therefore the user never has to worry about manually calculating the estimated usage of the ingredients as the System does it for the user.

The simple interface of the System has functions like adding a recipe, removing or updating the recipe. It also extends to functions such as adding a vendor for an ingredient, removing the vendor, checking threshold levels, processing orders, altering processed orders etc.

Admin (Perry) Permissions

1. Allow Perry to have total visibility of inventory
2. Order new parts from Inventory
3. Provides vendor contact/website to order new parts
4. Details student who visited and took out parts the frequency of their activities at the parts station
5. Updates the system that new parts order has been requested
6. Use school Information if applicable to provide tracking numbers and ETAs about the parts shipment and estimated availability
7. Provide Flags for low inventory and out of stock items
8. Review and manage student parts requests
9. Review and manage 3D printer appointment requests
10. Ability to add a new vendor and their information to the system
11. Update information and add new parts to parts database

Student Permissions

1. Checks FAU student credentials and permissions check to give authorizations based on graduation date, present course enrollment for that semester with ID barcode
2. Request parts from Inventory
3. Provide product specification (quantity on hand, product Image, product description, what assignments this product is used for Engineering Students
4. Ability to make an appointment to use the 3D printer
5. Notification if the product is unavailable or out of stock
6. Ability to lockup parts (by part #, by Engineering student assignment, a general search within the parameters of your Engineering student class hardware specific to the class)
7. List of high level non-functional requirements **(Alicia)**

**Nonfunctional requirements**

Usability

* The system must be easy to use by both managers and chefs such that they do not need to read an extensive number of manuals.
* The system must be quickly accessible by both managers and chefs.
* The system must be intuitive and simple in the way it displays all relevant data and relationships.
* The menus of the system must be easily navigable by the users with buttons that are easy to understand.

Reliability

* The System must give accurate inventory status to the user continuously. Any inaccuracies are taken care by the regular confirming of the actual levels with the levels displayed in the system.
* The System must successfully add any recipe, ingredients, vendors or special occasions given by the user and provide estimations and inventory status in relevance with the newly updated entities.
* The system must provide a password enabled login to the user to avoid any foreign entity changing the data in the system.
* The system should provide the user updates on completion of requested processes and if the requested processes fail, it should provide the user the reason for the failure.
* The system should not update the data in any database for any failed processes.

Performance

* The system must not lag, because the workers using it don’t have down-time to wait for it to complete an action.
* The system must complete updating the databases, adding of recipe, ingredient, vendor and occasions successfully every time the user requests such a process. o All the functions of the system must be available to the user every time the system is turned on.
* The calculations performed by the system must comply according to the norms set by the user and should not vary unless explicitly changed by the user.

Supportability

* The software is designed such that it works even on systems having the minimum configuration.
* The system is adaptable even if additional plugins or modules are added at a later point.
* The data can be exported to the manager so as to make the system more portable.

Packaging

* The system must be able to run on the Windows operating systems beginning with Windows XP, and must be able to run on future releases such as the upcoming Windows 8
* The software must incorporate a license key authentication process.
* The packaging must come with a manual that details the use of the system, and also the instructions on how to use the program. This manual may be included either in a booklet that comes with the software, or on the disc that the software itself is on.

Implementation

The System User Interface is built on Microsoft Visual Studio 2010.

The Programing is done in Microsoft Visual Studio 2010.

The Database is implemented on the Microsoft Access 2010.

• All users will be satisfied with the usability of the product. • 95% of all users will be satisfied with the usability of the product.

• 95% of the users will be able to complete representative tasks without requiring assistance (e.g., modifying exclusion date set) • 95% of the users will be able to complete representative tasks by the third attempt without requiring assistance

• 95% of the users will be able to complete tasks X Y Z by the third attempt without requiring assistance

• 95% of the users will be able to complete tasks X Y Z in less than 10 minutes without requiring assistance • 95% of the users will be able to complete task X in less than 10 minutes without requiring assistance • 80% of the users will be able to complete task Y in less than 10 minutes • 77% of the users will be able to complete task Z in less than 5 minutes

Example spec

<https://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.va.gov%2Fosdbu%2Fdocs%2Fnews20140218attachment2.docx>

1. Performance
2. Usability
3. Accessibility
4. Expected load
5. Security requirements
6. Storage
7. Availability
8. Fault tolerance
9. **High level system architecture (Guimel)**

References are found on page 41-49 of the sample PDF:

<https://www.cs.uic.edu/~spurohit/documents/Requirements%20Document.pdf>

1. **About team** 
   * Alicia Mitchell – Scrum Master
   * Sergio Ramirez – Product Owner
   * Bradley Rubenstein – Back End Lead
   * Guimel Gonzalez Hernandez – Front End Lead
   * Ryan Juraidini – Github Master
2. **Check List**
3. Team Communication method: DONE (WhatsApp Group Chat)
4. Outside of the class team meeting: DONE (Tuesdays & Thursday 3-5pm)
5. Front end and back end leads: DONE (Guimel, Brad)
6. Github Master: DONE (Ryan)
7. Team selected back end framework: ON TRACK
8. Skills of each team member defined and known to all: DONE
9. Team lead ensured that all team members read the final M1 and agree/understand it before submission: DONE