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**De La Salle University • College of Computer Studies**

**SystemScape**

**Software Requirements Specifications Document**

Requirements Engineering

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Date of Submission : February 2, 2015

**Table of Contents**

Executive Summary / 2

Overview of the Business Process / 2

Problem Analysis / 2

Software Solution / 3

Objectives / 3

Characteristics / 3

User Stories / 3

**Executive Summary**

CAI-STA is an I.T. services firm that collaborates with USA-based Computer Aid, Inc. and SoftTech Advantage, Inc. It is an extension of Computer Aid, Inc. (CAI), with several other branches located in Canada, United States, China, Australia, Middle East, and India.

Similar to the aforementioned branches around the world, CAI-STA offers several services, including application development and support, and consultations to both private and public sectors to improve ICT management effectiveness.

**Overview of the Business Process**

Clients come to CAI-STA to order supplies, ranging from hardware to general items. CAI-STA then identifies suppliers for these items and chooses the best deal for their clients, taking into consideration their client’s requirements. Purchase orders are created and the company awaits the delivery of these items. The items are then added to the inventory and assigned to employees who handle the rest of the transaction with the customer. When supplies are ordered but are not part of any project, they are instead stored by the company.

**Problem Analysis**

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| **Description**  **(What’s the problem?)** | **Cause**  **(What causes the problem?)** | **Symptoms**  **(How do we know the problem exists?)** | **Impact**  **(Why is this important? What are the consequences?)** |
| The ends of warranties and contracts are difficult to keep track of. | Even though the relevant dates are present in the MS Excel files being used, MS Excel itself does not have a notification feature; the company needs to manually set the dates in a calendar application for her to be notified. | There are instances wherein the client overlooked contracts and end of warranties of some items and pieces of equipment | If a piece of equipment was to get damaged, and its warranty or contract weren’t renewed, then there will be complications in the repair or replacement of that piece of equipment. |
| The current approach in managing the inventory is open to inconsistencies between the different files containing data. | There is no centralized database for easy data management; instead multiple MS Excel files are used, often for the same data. Because of this, the company needs to update and check multiple files whenever the data is edited. | The need to maintain multiple files that aren’t directly connected and contain copies of the same data sometimes leads to discrepancies in this data. | If there end up being discrepancies between these files, they would be difficult to resolve and may lead to complications in handling inventory items through this data later on. |
| The items listed in the inventory are difficult to filter and sort. | The company is unable to automatically sort the items and data contained in MS Excel. | The company currently has to create a separate MS Excel file that the company manually arranged in order to view the sorted list of items. | If the company were to make a mistake in transferring, copying and rearranging data between these files (e.g. forgetting to transfer an item or accidentally overwriting an item), then this could invalidate some of that data and lead to complications later in processes involving that data. |

**Software Solution**

**Objectives**

The Software aims to provide an easier means in managing the purchase order, the inventory, as well as the generation of reports at the same time alleviating the inconsistencies that arises because of the separation of the purchase manager’s system and the technician’s system.

* To provide a facility for managing the purchase order;
* To provide a facility for managing the inventory;
* To provide a facility for tracking the end of warranties and contract expiry dates;
* To provide a facility for assigning projects to the employees;
* to provide a facility for generating reports as needed by the president;
* to provide a facility for data security and data integrity;

**Characteristics**

The software should present consistency in records and ease in creating purchase orders, adding items to inventory, and generating the necessary reports. It should have the correct information at all times, to be implemented by using a single database, and it should be easily maintainable.

**User Stories**

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| **User Story #1: The president can view the reports so that s/he can monitor the company’s performance and status.** | |
| **Estimate (Days): 3** | **Priority: 30** |
| **Pre-condition:**  The manager and the technicians should have finished managing the inventory | |
| **Interaction:**   1. The manager creates Purchase Orders 2. Technicians edit the inventory once supplies arrive 3. The manager uses the system to generate reports based on the inventory 4. The manager sends the generated reports to the president. | |
| **Post-condition:**  The system should export the information to an excel file. Then the manager will review and print the reports and show it to the president whenever the president inquires of it. | |
| **Acceptance Criteria:**   1. Test if the generated reports contain data equivalent to the ones in the database. | |

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| **User Story #2: The manager should be able to have executive access to the system, so that the integrity of the data for the purchase order can be secured.** | |
| **Estimate (Days): 1** | **Priority: 10** |
| **Pre-condition:**  The manager must already be registered to the database. | |
| **Interaction:**   1. The manager will start up the system. 2. On startup, the system will prompt the manager for her password and username. 3. The manager will input the password and his username and presses the *Enter* key. 4. If the password and username is correct, then the screen, which includes the purchase order module, inventory module, and the project assignment module, that is only for the manager will show up. | |
| **Post-condition:**  The manager can create the purchase order and view the purchase orders created. The manager also has the privilege to edit the information in the inventory and to assign the projects to the employees. | |
| **Acceptance Criteria:**   1. Test if the screen, which includes the purchase order module, inventory module, and the project assignment module, that is only for the manager will show up if both the username and the password are correct. 2. Test if the screen, which includes the purchase order module, inventory module, and the project assignment module, that is only for the manager will not show up if the password or the username is incorrect and the user will be prompted for the correct password and username. | |

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| **User Story #3: A technician should have access to the inventory, so that I can add and edit information in the said inventory.** | |
| **Estimate (Days): 1** | **Priority: 10** |
| **Pre-condition:**  The technician must already be registered to the database. | |
| **Interaction:**   1. The technician will start up the system. 2. On startup, the system will prompt the technician for his password and username. 3. The technician will input the password and his username and presses the *Enter* key. 4. If the password and username is correct. The screen, which only includes the inventory module, that is only for the technicians will show up. | |
| **Post-condition:**  The technician can add and edit information in the inventory. | |
| **Acceptance Criteria:**   1. Test if the screen for the Inventory module will show up if both the password and username is correct. 2. Test if the screen for the Inventory module will not show up if the password or username is incorrect and the user will be prompted for the correct password and username. | |

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| **User Story #4: The manager can record customer details to keep track of customers and their corresponding purchases** | |
| **Estimate (Days): 2** | **Priority: 40** |
| **Pre-condition:**  There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager can click a button to view list of customers. 3. The manager can click a button to add customers. 4. A form is shown for customer details that the manager must fill up. 5. The manager clicks a button to add the customer details. 6. The system adds the details to the database. | |
| **Post-condition:** The manager is able to see the new customer in the list of customers. | |
| **Acceptance Criteria:**   1. The user should be prompted with an information message first for the user to check if the information to be added is correct. 2. The user should be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user should be prompted with a warning message if the customer is already added to the database. 4. The user should be prompted with a confirmation message once a customer has been successfully added to the database. 5. The interface that will be used for the user to view the list of customers must be updated automatically once the updates in the database are done. | |

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| **User Story #5: The manager can record supplier details to have a directory of suppliers where the company could get their purchases as well as contact for any inquiries** | |
| **Estimate (Days): 2** | **Priority: 50** |
| **Pre-condition:**  There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager can click a button to view list of suppliers. 3. The manager can click a button to add supplier. 4. A form is shown for supplier details that the manager must fill up. 5. The manager clicks a button to add the supplier details. 6. The system adds the details to the database. | |
| **Post-condition:** The manager is able to see the new supplier in the list of suppliers. | |
| **Acceptance Criteria:**   1. The user should be prompted with an information message first for the user to check if the information to be added is correct. 2. The user should be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user should be prompted with a warning message if the supplier is already added to the database. 4. The user should be prompted with a confirmation message once a supplier has been successfully added to the database. 5. The interface that will be used for the user to view the list of suppliers must be updated automatically once the updates in the database are done. | |

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| **User Story #6: The manager can canvas suppliers to identify the most beneficial bid for supply purchases.** | |
| **Estimate (Days): 2** | **Priority: 60** |
| **Pre-condition:**  The manager must be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager can click a button to view suppliers and their bids. 3. There are comboboxes and checkboxes to filter the bids. 4. Clicking the bids pop up additional details about it and a button to accept the bid. 5. If the button is clicked, the manager is redirected to the create purchase order page. | |
| **Post-condition:** | |
| **Acceptance Criteria:**   1. The filters must correctly filter the data based on the criteria. | |

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| **User Story #7: The manager can create purchase orders so that s/he can monitor purchase transactions between the suppliers and the clients** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:**  The manager must be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager clicks a button to view list of purchase orders. 3. The manager clicks a button to create purchase orders. 4. The system shows a form for purchase order details that the manager must fill up. 5. The manager clicks a button to add the purchase orders. 6. The system adds the details to the database. | |
| **Post-condition:**  The manager must see the new purchase order in the list of purchase orders. The manager must be able to view the added purchase order. | |
| **Acceptance Criteria:**   1. The added details in the database must reflect what was entered in the form. | |

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| **User Story #8: The manager can edit purchase orders** t**o modify incorrect values and inconsistencies**. | |
| **Estimate (Days): 2** | **Priority: 30** |
| **Pre-condition:**  There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager can click a button to view list of purchase orders. 3. The manager can click a button to edit a purchase order. 4. A form is shown for purchase order details that the manager can modify. 5. The manager clicks a button to edit the details. 6. The system pushes the details modified to the database. | |
| **Post-condition:** The manager is able to see the purchase order in the list of purchase orders. Upon viewing its details, the details should already be updated. | |
| **Acceptance Criteria:**   1. The user should be prompted with an information message first for the user to check if the edited information is correct. 2. The user should be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user should be prompted with a confirmation message once the edited information has been successfully updated in the database. 4. The interface that will be used for the user to view the list of purchase orders must be updated automatically once the updates in the database are done. | |

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| **User Story #9: The manager can monitor purchase contract expiry dates so that I can renew the contract in order to repair or to replace an equipment when complications arise.** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. Items that are added to the inventory that are classified as I.T. assets are the only ones that can have an involvement with this feature. | |
| **Interaction:**   1. The manager logs in. 2. The manager can click a button to add an item to the inventory. 3. If the item is classified as an I.T. asset, a form is shown for the contract details that the manager must fill up. 4. The system adds the details to the database. 5. There is a portion of the screen dedicated for notifications. 6. Notifications on items with near contract expiry dates are displayed. | |
| **Post-condition:** Notifications are seen when the manager logs in. | |
| **Acceptance Criteria:**   1. If an item is classified as an I.T. asset, a form should appear for the contract details that the manager must fill up. 2. The user will be prompted with an information message first for the user to check if the information is correct. 3. The user will be prompted with a warning message if there will be any significant information that were left blank upon submission. 4. The user will be prompted with a confirmation message once the information has been successfully added in the database. 5. Only items with contract expiry dates within two weeks are displayed. | |

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| **User Story #10: The manager can monitor the item warranty expiry dates to monitor the fee of maintaining the item which increases without the warranty** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. There is a portion of the screen dedicated to notifications. 3. Notifications on items with near warranty expiry dates are displayed. | |
| **Post-condition:** Notifications are seen when the manager logs in. | |
| **Acceptance Criteria:**   1. Only items with warranty expiry dates within two weeks are displayed. | |

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| **User Story #11: The manager can assign items to its corresponding project and employees to record the project and employees assigned in the handling of the item.** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager clicks a button to view the inventory. 3. The manager clicks an item to view its details. 4. The manager selects from a combobox to assign it to an employee. 5. The manager selects from a combobox to assign it to a project. 6. The manager clicks a button so save all changes. 7. The system saves the data in the database. | |
| **Post-condition:** Upon viewing the item, it should display the correct employee and project. The employees must be able to view that a project has been assigned to them. | |
| **Acceptance Criteria:**   1. If the item is already assigned to an employee/project, promt the user with a warning message before continuing to replace the previous data. 2. If the data has been saved, prompt the user with a completion message. | |

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| **User Story #12: The manager can review the inventory to monitor purchases and corresponding details.** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager clicks a button to view the inventory. 3. The manager may filter the items. 4. The manager clicks an item to view its details. | |
| **Post-condition:** The details must correctly reflect the item selected. | |
| **Acceptance Criteria:**   1. The filter functionality must correctly show the items that match the criteria. | |

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| **User Story #13: The manager can edit the inventory to modify wrong details or to specify the status of an item.** | |
| **Estimate (Days): 2** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager clicks a button to edit the inventory. 3. The manager clicks an item to edit its details. 4. The manager can select the item’s new status using radio buttons. 5. The manager may edit the other details in combo boxes and text fields. 6. The manager clicks a button to save the data. 7. The system saves the data. | |
| **Post-condition:** Upon viewing the item, the details should have changed already. | |
| **Acceptance Criteria:**   1. The user should be prompted with an information message first for the user to check if the edited information is correct. 2. The user should be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user should be prompted with a confirmation message once the edited information has been successfully updated in the database. 4. The interface that will be used for the user to view the list of purchase orders must be updated automatically once the updates in the database are done. | |

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| **User Story #14: The manager can add employees to assign them items and projects.** | |
| **Estimate (Days): 1** | **Priority: 40** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The manager must also be logged in. | |
| **Interaction:**   1. The manager logs in. 2. The manager clicks a button to view list of employees. 3. The manager clicks a button to add an employee. 4. The manager fills up a form on employee details. 5. The manager clicks a button to save the details. 6. The system saves the details. | |
| **Post-condition:** The new employee must be seen in the employee list. Clicking on his/her name shows the employee details. | |
| **Acceptance Criteria:**   1. The user should be prompted with an information message first for the user to check if the information to be added is correct. 2. The user should be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user should be prompted with a warning message if the employee is already added to the database. 4. The user should be prompted with a confirmation message once an employee has been successfully added to the database. 5. The interface that will be used for the user to view the list of employees must be updated automatically once the updates in the database are done. | |

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| **User Story #15: A technician can add items to the inventory to record the receipt of ordered supplies from the suppliers.** | |
| **Estimate (Days): 1** | **Priority: 20** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The technician must also be logged in. | |
| **Interaction:**   1. The logs in. 2. The manager clicks a button to view list of purchase orders. 3. The manager clicks a button to create purchase orders. 4. The system shows a form for purchase order details that the manager must fill up. 5. The manager clicks a button to add the purchase orders. 6. The system adds the details to the database. | |
| **Post-condition:**  The manager must see the new purchase order in the list of purchase orders. The manager must be able to view the added purchase order. | |
| **Acceptance Criteria:**   1. The added details in the database must reflect what was entered in the form. | |

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| **User Story #16: A technician can edit the inventory to modify wrong details or to specify the status of an item.** | |
| **Estimate (Days): 2** | **Priority: 30** |
| **Pre-condition:** There must be a centralized database where data can be managed and updated. The technician must also be logged in. | |
| **Interaction:**   1. The technician logs in. 2. The technician clicks a button to edit the inventory. 3. The technician clicks an item to edit its details. 4. The technician can select the item’s new status using radio buttons. 5. The technician may edit the other details in combo boxes and text fields. 6. The technician clicks a button to save the data. 7. The system saves the data. | |
| **Post-condition:** Upon viewing the item, the details should have changed already. | |
| **Acceptance Criteria:**   1. The user will be prompted with an information message first for the user to check if the edited information is correct. 2. The user will be prompted with a warning message if there will be any significant information that were left blank upon submission. 3. The user will be prompted with a confirmation message once the edited information has been successfully updated in the database. 4. The interface that will be used for the user to view the list of purchase orders must be updated automatically once the updates in the database are done. | |