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**CompSys**

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# **Introduction**

# **Functional Components**

## **Hierarchy chart**

# **User Requirements**

## **The system performs staff administration**

### CompSys will allow the details of each new staff to be recorded.

### CompSys will allow a staff details to be amended.

### CompSys will generate a staff listing.

## **The system performs customer administration**

### CompSys will allow the details of each new customer to be recorded.

### CompSys will allow a customer details to be amended.

### CompSys will allow querying a customer.

### CompSys will generate a customer listing.

## **The system performs repair management**

### CompSys will allow the details of each new repair to be recorded.

### CompSys will generate a new repair estimate.

### CompSys will allow the system to validate a new repair.

### CompSys will issue invoices for each new repair.

### CompSys will process ever repair being collected.

### CompSys will generate repair report for each repair.

## **The system performs administration**

### CompSys will generate a list of jobs and their status.

### CompSys will issue invoice for any repair at any given period.

### CompSys will generate income analysis to require specification.

# **System Requirements**

## **System Level Use Case Diagram**

**Computer Repair System**

Manager

Staff

## **Manage Staff**

This module is responsible for adding new staff, amending existing staff and listing them in ascending order of surname, forename. The staff can be set to **inactive** from the ‘amend staff’ sub-module.

### New Staff

#### UC Diagram to allow the details of each new staff to be recorded.

Staff

Manager

<<includes>>

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to allow the details of each new staff to be recorded.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **New Staff** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.1.1 | | **Date: 14/10/2014** |
| **Priority** | High | | |
| **Source** | Staff | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** | Staff | | |
| **Description** | * Shop manager registers new staff in the system before they can start working in the computer repair shop. | | |
| **Preconditions** |  | | |
| **Trigger** | * Manager needs to register a new staff member | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The manager chooses add new staff.**  **Step 3: The manager enters the required information:**   * **Surname** * **Forename** * **DOB** * **Address 1** * **Address 2** * **Town** * **County** * **Phone** * **Email**   **Step 4: The manager confirms that the staff is to be registered** | **Step 2: The system displays create staff form.**  **Step 5:The system validates the data entered:**   * **All fields are required** * **All data type are valid**   **Step 6: The system assigns the Staff ID**  **Step 7: The system assigns Registration Date as the current system date**  **Step 8: The system assigns the staff status a default value of ‘active’**  **Step 9: The system saves the new staff details in the Staff file.**  **Step 10: The system displays a confirmation message** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
| **Invalid and/or Required field NOT entered** | **Step 5c: Manager re-enters the required field.** | **Step 5a: A required field is not entered**  **Step 5b: The system displays an appropriate error message and notifies the error sources** | |
| **The process continues to normal flow from Step 5** | | |
| **Conclusions** | * New staff is created. | | |
| **Post conditions** | * New staff created on the system cannot be deleted. | | |
| **Business Rules** | * Staff cannot do any repair shop work without registering on the system. | | |
| **Implementation Constraints** |  | | |

### Amend Staff

#### UC Diagram to allow staff details to be amended.

Manager

Staff

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to allow staff details to be amended.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **Amend Staff** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.1.2 | | **Date: 22/10/2014** |
| **Priority** | Medium | | |
| **Source** | Staff | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** | Staff | | |
| **Description** | * The **manager** must enter **updated** staff details and save them to the staff file. | | |
| **Preconditions** | * New staff should supply updated details. | | |
| **Trigger** | * Staff requests staff details to be amended. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: Staff makes an application to amend details of the staff file and submits new staff details.**  **Step 2: Manager requires these details to query for the staff:**   * **Surname** * **Forename** * **DOB** * **Town**   **Step 5: The manager starts to enter new staff details to the system.**   * **Address 1** * **Address 2** * **Town** * **County** * **Phone** * **Email** * **Status** | **Step 3: The system retrieves all the staff details from the staff file.**  **Step 4: The system will not allow to amend:**   * **Surname** * **Forename** * **DOB**   **Step 6:The system validates the data entered:**   * **All fields are required** * **All data type are valid**   **Step 7: The system adds Amend Date as the current system date**  **Step 8: The system amends the new staff details in the Staff file. A Message is displayed to the screen to inform the manager that the staff details have been updated.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
| **Invalid and/or Required field NOT entered** | **Step 6c: Manager re-enters the required field.** | **Step 6a: Invalid data and/or required field is not entered**  **Step 6b: The system displays an appropriate error message and notifies the error sources** | |
| **The process continues to normal flow from Step 6** | | |
| **Conclusions** | * The staff details are amended and saved to the staff file | | |
| **Post conditions** | * The staff requires for details to be amended | | |
| **Business Rules** | * Staff cannot be deleted from the system. They can only be set to ‘active’ or ‘inactive’. | | |
| **Implementation Constraints** |  | | |

### List Staff

#### UC Diagram to generate a staff listing.

Staff

Manager

<<includes>>

#### UC Narrative to generate a staff listing.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **List Staff** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.1.3 | | **Date: 24/10/2014** |
| **Priority** | Low | | |
| **Source** | Staff | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** | Staff | | |
| **Description** | Manager/Staff wishes to access the details of all active staff. This requires the system to generate a list of all the staff registered on the system. | | |
| **Preconditions** | * Staff file should exist in the system. * Staff are allowed to use this module if they are authorised by the shop manager. | | |
| **Trigger** | * Shop manager wants to list all the staff. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The manager requests a list of all the staff.**  **Step 3: The manager requests a printed copy of the staff list.** | **Step 2: The system retrieves details of all current staff from the staff file and displays them on the interface (UI).**  **Step 4: The system generates a printed list based on the retrieved data and sends to the default print device.**  **Step 5: The system displays a confirmation message.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
|  |  |  | |
|  |  | | |
| **Conclusions** | * A listing of all the staff is generated/printed. | | |
| **Post conditions** | * Details of the staff displayed cannot be amended or deleted. | | |
| **Business Rules** | * Staff details may only be viewed, not changed or deleted, when displayed in this way. * The list should include only current staff. | | |
| **Implementation Constraints** |  | | |

## **Manage Customers**

This module is responsible for adding new customer, querying and amending existing customer accounts and listing them in ascending order of surname, forename. The customer can be set to **inactive** from the ‘amend customer’ sub-module.

### New Customer

#### UC Diagram to allow the details of each new customer to be recorded.

Staff

Manager

<<includes>>

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to allow the details of each new customer to be recorded.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **New Customer** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.2.1 | | **Date: 24/10/2014** |
| **Priority** | High | | |
| **Source** | Manager, Staff | | |
| **Primary Business Actor** | Staff | | |
| **Other Participating Actors** | Manager | | |
| **Description** | * Shop staff/manager registers new customer in the system before they can proceed with a new repair. | | |
| **Preconditions** |  | | |
| **Trigger** | * Shop staff/manager needs to register a new customer. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The staff/manager chooses add new customer.**  **Step 3: The staff/manager enters the required information:**   * **Surname** * **Forename** * **DOB** * **Address 1** * **Address 2** * **Town** * **County** * **Phone** * **Email**   **Step 4: The staff/manager confirms that the staff is to be registered** | **Step 2: The system displays create customer form.**  **Step 5:The system validates the data entered:**   * **All fields are required** * **All data type are valid**   **Step 6: The system assigns the Customer ID**  **Step 7: The system assigns Registration Date as the current system date**  **Step 8: The system assigns the customer status a default value of ‘active’**  **Step 9: The system saves the new customer details in the *Customer File.***  **Step 10: The system displays a confirmation message** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
| **Invalid data type and/or Required field NOT entered** | **Step 5c: Staff/Manager re-enters the required field.** | **Step 5a: A required field is not entered and/or invalid data type.**  **Step 5b: The system displays an appropriate error message and notifies the error sources** | |
| **The process continues to normal flow from Step 5** | | |
| **Conclusions** | * New customer is created and in the customer file. | | |
| **Post conditions** | * New customer created on the system cannot be deleted. | | |
| **Business Rules** | * Customers cannot proceed with any repairs without registering on the system. | | |
| **Implementation Constraints** |  | | |

### Amend Customer

#### UC Diagram to allow customer details to be amended.

Manager

Staff

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to allow customer details to be amended.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **Amend Customer** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.2.2 | | **Date: 22/10/2014** |
| **Priority** | Medium | | |
| **Source** | Staff, Manager | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** | Staff | | |
| **Description** | * The **manager/staff** must enter **updated** staff details and save them to the staff file. | | |
| **Preconditions** | * New customer should supply updated details. | | |
| **Trigger** | * Customer requests ‘customer details’ to be amended. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: Customer makes an application to amend details of the customer file and submits new customer details.**  **Step 2: Manager/staff requires these details to query for the customer:**   * **Surname** * **Forename** * **DOB** * **Town**   **Step 5: The manager/staff starts to enter new customer details to the system.**   * **Address 1** * **Address 2** * **Town** * **County** * **Phone** * **Email** * **Status** | **Step 3: The system retrieves all the customer details from the customer file.**  **Step 4: The system will not allow to amend:**   * **Surname** * **Forename** * **DOB**   **Step 6:The system validates the data entered:**   * **All fields are required** * **All data type are valid**   **Step 7: The system adds Amend Date as the current system date**  **Step 8: The system amends the new customer details in the Customer File. A Message is displayed to the screen to inform the details have been updated.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
| **Invalid and/or Required field NOT entered** | **Step 6c: Manager/Staff re-enters the required field.** | **Step 6a: Invalid data and/or required field is not entered**  **Step 6b: The system displays an appropriate error message and notifies the error sources** | |
| **The process continues to normal flow from Step 6** | | |
| **Conclusions** | * The customer details are amended and saved to the customer file | | |
| **Post conditions** | * The customer requires for details to be amended | | |
| **Business Rules** | * Customer cannot be deleted from the system. They can only be set to ‘active’ or ‘inactive’. | | |
| **Implementation Constraints** |  | | |

### Query Customer

#### UC Diagram to allow querying a customer.

<<includes>>

Manager

Staff

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to allow querying a customer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Use Case Name** | **Query Customer** | | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.2.3 | | | **Date: 22/10/2014** |
| **Priority** | Medium | | | |
| **Source** | Staff, Manager | | | |
| **Primary Business Actor** | Staff | | | |
| **Other Participating Actors** | Manager | | | |
| **Description** | * The **manager/staff** queries for an existing customer. Details of the customer can be printed. | | | |
| **Preconditions** |  | | | |
| **Trigger** | * Staff/Manager requires detailed customer information. | | | |
| **Typical Scenario** | **Actor Action** | | **System Response** | |
|  | **Step 1: Customer brings new repair.**  **Step 2: Manager/staff requires these details to query for the customer:**   * **Surname** * **Forename** * **DOB** * **Town**   **Step 5: Manager/Staff reviews Customer Profile, if the customer exists in the system, the manager/staff opens the new repair module.**  **Step 6: Manager/Staff chooses Yes/No option.** | | **Step 3: System validates the entry.**   * **Surname, Forename, DOB and Town are required** * **All data are valid**   **Step 4: The system retrieves all the customer details from the customer file and/or the repairs file.**  **Step 5: System asks if the customer details needs to be printed before exiting.**  **Step 7: A detailed customer record is printed.**  **Step 8: System goes to repair module and exists the query module.** | |
| **Alternate Scenarios** | **Actor Action** | | **System Response** | |
| **Invalid and/or Required field NOT entered**  **Manager/Staff wants to find out existing/past repairs** | **Step 3c: Manager/Staff re-enters the required field.** | | **Step 3a: Invalid data and/or required field is not entered**  **Step 3b: The system displays an appropriate error message and notifies the error sources** | |
| **The process continues to normal flow from Step 3** | | | |
| **Step 1: Manager/Staff wants to find out existing/past repairs for a specific customer.** |  | | |
| **The process continues to normal flow from Step 2** | | | |
| **Conclusions** | * Manager/staff retrieves customer details. * Customer details are printed. | | | |
| **Post conditions** | * Customer requires new repair * Manager/Staff needs to check past/existing repair | | | |
| **Business Rules** |  | | | |
| **Implementation Constraints** |  | | | |

### List Customers

#### UC Diagram to generate a customer listing.

Staff

Manager

<<includes>>

#### UC Narrative to generate a customer listing.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **List Customers** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.2.4 | | **Date: 24/10/2014** |
| **Priority** | Low | | |
| **Source** | Staff, Manager | | |
| **Primary Business Actor** | Staff | | |
| **Other Participating Actors** | Manager | | |
| **Description** | Manager/Staff wishes to access the details of all active customers. This requires the system to generate a list of all the customers registered on the system. | | |
| **Preconditions** | * Customer file should exist in the system. | | |
| **Trigger** | * Shop manager/staff wants to list all the customers. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The manager requests a list of all the staff.**  **Step 3: The manager requests a printed copy of the staff list.** | **Step 2: The system retrieves details of all current staff from the staff file and displays them on the interface (UI).**  **Step 4: The system generates a printed list based on the retrieved data and sends to the default print device.**  **Step 5: The system displays a confirmation message.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
|  |  |  | |
|  |  | | |
| **Conclusions** | * A listing of all the staff is generated/printed. | | |
| **Post conditions** | * Details of the staff displayed cannot be amended or deleted. | | |
| **Business Rules** | * Staff details may only be viewed, not changed or deleted, when displayed in this way. * The list should include only current staff. | | |
| **Implementation Constraints** |  | | |

## **Manage Repair**

### New Repair

### New Estimate

### Validate Repair

### Collect Repair

### Repair Reports

## **Manage Admin**

This module is responsible for listing jobs status, income analysis, recording customer payments and issuing company invoices.

### List Jobs

#### UC Diagram to generate a list of jobs and their status.

Manager

<<includes>>

#### UC Narrative to generate a list of jobs and their status.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **List Jobs** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.4.1 | | **Date: 24/10/2014** |
| **Priority** | Medium | | |
| **Source** | Manager | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** |  | | |
| **Description** | Manager wishes to access the status of all active jobs. This requires the system to generate a list of all the pending repairs. | | |
| **Preconditions** | * Repairs file should exist in the system. | | |
| **Trigger** | * Shop manager wants to list all the jobs. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The manager requests a list of all the jobs.**  **Step 3: The manager requests a printed copy of the jobs list.** | **Step 2: The system retrieves details of all current repairs from the repairs file and displays them on the interface (UI).**  **Step 4: The system generates a printed list based on the retrieved data and sends to the default print device.**  **Step 5: The system displays a confirmation message.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
|  |  |  | |
|  |  | | |
| **Conclusions** | * A listing of all the repair jobs is generated/printed. | | |
| **Post conditions** | * Details of the jobs displayed cannot be amended or deleted. | | |
| **Business Rules** | * Jobs details may only be viewed, not changed or deleted, when displayed in this way. * The list should include only current jobs. | | |
| **Implementation Constraints** |  | | |

### Issue Invoice

#### UC Diagram to generate invoice at any given time.

Manager

Customer

<<includes>>

<<extends>>

<<includes>>

<<includes>>

<<extends>>

#### UC Narrative to generate invoice at any given time.

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **Issue Invoice** | | **Author: Nazmul Alam** |
| **Use Case Id** | 3.4.2 | | **Date: 24/10/2014** |
| **Priority** | Medium | | |
| **Source** | Manager | | |
| **Primary Business Actor** | Manager | | |
| **Other Participating Actors** |  | | |
| **Description** | Manager wishes to access the status of all active jobs. This requires the system to generate a list of all the pending repairs. | | |
| **Preconditions** | * Repairs file should exist in the system. | | |
| **Trigger** | * Shop manager wants to list all the jobs. | | |
| **Typical Scenario** | **Actor Action** | **System Response** | |
|  | **Step 1: The manager requests a list of all the jobs.**  **Step 3: The manager requests a printed copy of the jobs list.** | **Step 2: The system retrieves details of all current repairs from the repairs file and displays them on the interface (UI).**  **Step 4: The system generates a printed list based on the retrieved data and sends to the default print device.**  **Step 5: The system displays a confirmation message.** | |
| **Alternate Scenarios** | **Actor Action** | **System Response** | |
|  |  |  | |
|  |  | | |
| **Conclusions** | * A listing of all the repair jobs is generated/printed. | | |
| **Post conditions** | * Details of the jobs displayed cannot be amended or deleted. | | |
| **Business Rules** | * Jobs details may only be viewed, not changed or deleted, when displayed in this way. * The list should include only current jobs. | | |
| **Implementation Constraints** |  | | |

### Income Analysis

# **Data Model**

# **Database Schema**

# **Program Specifications**

# **Conclusion**

# **References:**

<http://www.academia.edu/3046773/Requirement_Analysis_Document_for_Recruitment_Management_System>