Nicholas Weidman

Designing Information Systems

Assignment 3

10/1/17

**Functional Requirements**

* Allow for the entry of new contracts as they become available
* Allow for the storage of employee names and passwords so that employees can verify their identity when accessing certain functions of the system
* Direct existing contracts to the appropriate work areas
* Allow machine operators to view what contracts are available for their area in order of their due dates
* Allow machine operators to update time requirements and progress of each contract as it progresses
* Allow management and analysis personnel to track the progress of each contract to address concerns relating to productivity and the flow of work through the facility
* Store updated time requirements so similar contracts in the future will have more accurate predictions associated with their expected completion date
* Move completed contracts out of the system and into a database that stores historical data in case they must be analyzed or addressed later
* Provide analysts with a way to view current production data and forecasts, as well as a way to produce new forecast predictions based on that information
* Allow employees to view any reports that they require to perform their duties
* Keep a database of delinquent contracts to be viewed by supervisors
* Keep track of the current date so contracts that run past their expected completion date will automatically be copied to the delinquent database

**Data Flow Diagram**



**Use Case Diagram**



**Use Case Scenarios**

|  |  |  |
| --- | --- | --- |
| **Use Case Name:** | View Contracts Available for Manufacturing | |
| **Area:** | Manufacturing | |
| **Actors:** | Machinist | |
| **Stakeholder:** | Machinist | |
| **Level:** | Blue | |
| **Description:** | Machinist view all contracts available for manufacturing in their area in order of due date to select one for manufacturing | |
| **Triggering Event:** | Machinist opens list of available contracts | |
| **Trigger Type:** | **External X** | **Temporal** |
| **Steps Performed (Main Path):**  1.Machinist opens the list of contracts available in their area  2.If work is available, the machinist selects a new contract to begin manufacturing  3.System updates the contract to reflect that it is now in progress | | **Information for Steps:**  1.The machinist’s work area |
| **Preconditions:** | Machinist is available to begin manufacturing on a new contract | |
| **Postconditions:** | Machinist will have a new contract to begin manufacturing on | |
| **Assumptions:** | Contracts are available for the given area | |
| **Success Guarantee:** | Machinist will have a contract to begin manufacturing on | |
| **Minimum Guarantee:** | Machinist will not be able to select a new contract because there is no work in their area | |
| **Requirements met:** | Machinist will have a new contract to begin manufacturing on | |
| **Outstanding Issues:** | Is there work available for the given area? | |
| **Priority:** | 1 (Out of 3) | |
| **Risk:** | 2 (Out of 10) | |

|  |  |  |
| --- | --- | --- |
| **Use Case Name:** | Update location, progress, and time requirements of contracts | |
| **Area:** | Manufacturing and Analytics | |
| **Actors:** | Machinist, Supervisor | |
| **Stakeholder:** | Machinist, Supervisor, Analyst | |
| **Level:** | Blue | |
| **Description:** | The machinist or supervisor will be able to update the current location, process progress, and estimated completion date of a given contract | |
| **Triggering Event:** | The machinist or supervisor opens the details of a particular contract using its contract identification number | |
| **Trigger Type:** | **External X** | **Temporal** |
| **Steps Performed (Main Path):**  1.The employee enters their name and work area to identify themselves  2.The employee enters the required update in the necessary field  3.The system updates the contract information to reflect the change, as well as who made it | | **Information for Steps:**  1.The identity of the employee making the update  2.The contract that requires updating  3.The field that requires updating  4.The new information  5.The date |
| **Preconditions:** | The information of a particular contract is out of date or incorrect | |
| **Postconditions:** | The information of the contract is up to date and correct | |
| **Assumptions:** | The contract requires updating | |
| **Success Guarantee:** | The contract is successfully updated with the correct information | |
| **Minimum Guarantee:** | The contract is updated, but the information entered is incorrect | |
| **Requirements met:** | The contract is correctly updated with accurate information | |
| **Outstanding Issues:** | What if the employee enters incorrect information? Entry accuracy verification? | |
| **Priority:** | 3 (Out of 3) | |
| **Risk:** | 7 (Out of 10) | |

|  |  |  |
| --- | --- | --- |
| **Use Case Name:** | Insert new contract | |
| **Area:** | Manufacturing | |
| **Actors:** | Supervisor | |
| **Stakeholder:** | Supervisor, Machinist | |
| **Level:** | Blue | |
| **Description:** | A supervisor is able to enter the due date, expected completion date, necessary processes, start location, and contract number of a new contract once it becomes available for manufacturing | |
| **Triggering Event:** | The supervisor opens a form to enter the information related to a new contract | |
| **Trigger Type:** | **External X** | **Temporal** |
| **Steps Performed (Main Path):**  1.The supervisor provides identification in the form of their username and password  2. The supervisor enters the necessary details of the contract, including due date, necessary processes, expected completion date, start location, and contract number  3.The system forwards the contract information to the contract’s initial work area | | **Information for Steps:**  1. The identity of the employee entering the new contract  2. The due date, necessary processes, expected completion date, start location, and contract number of the contract being entered  3. The date of entry |
| **Preconditions:** | A contract is available to begin manufacturing, but is not yet entered in the system | |
| **Postconditions:** | The contract is successfully entered into the system and forwarded to the appropriate area | |
| **Assumptions:** | The supervisor has all of the necessary details for a contract to be entered | |
| **Success Guarantee:** | The contract is successfully added to the system and forwarded to the appropriate area | |
| **Minimum Guarantee:** | The contract is not able to be entered | |
| **Requirements met:** | The contract is successfully added to the system and forwarded to the appropriate area | |
| **Outstanding Issues:** | Does the supervisor have all of the necessary details to enter a new contract? Data entry verification to ensure that the contract information is accurate and has been forwarded to the appropriate work area? How to store employee names and passwords? | |
| **Priority:** | 3 (Out of 3) | |
| **Risk:** | 7 (Out of 10) | |

|  |  |  |
| --- | --- | --- |
| **Use Case Name:** | View Reports | |
| **Area:** | Analytics | |
| **Actors:** | Supervisor, CEO, Analyst | |
| **Stakeholder:** | Supervisor, CEO, Analyst | |
| **Level:** | Blue | |
| **Description:** | Designated employees are able to view reports critical to their designated duties | |
| **Triggering Event:** | An employee opens a form to load reports | |
| **Trigger Type:** | **External X** | **Temporal** |
| **Steps Performed (Main Path):**  1. Employee enters identification in the form of their employee number  2. Based on the employee position associated with the entered employee number, the system will load the necessary reports for the employee to view | | **Information for Steps:**  1.Employee position |
| **Preconditions:** | The employee requires reports to perform their duties, but does not yet have them | |
| **Postconditions:** | The employee is able to view all of the reports necessary to perform their duties | |
| **Assumptions:** | The employee requires access to reports to perform their duties | |
| **Success Guarantee:** | The employee is able to view all necessary reports | |
| **Minimum Guarantee:** | The employee is unable to view reports | |
| **Requirements met:** | The employee is able to view all necessary reports | |
| **Outstanding Issues:** | Reports must be forwarded only to the people that require them. How to store employee names and passwords to ensure security? | |
| **Priority:** | 3 (Out of 3) | |
| **Risk:** | 3 (Out of 10) | |

|  |  |  |
| --- | --- | --- |
| **Use Case Name:** | Provide Forecasting Predictions | |
| **Area:** | Analytics | |
| **Actors:** | Analyst | |
| **Stakeholder:** | Analyst, CEO | |
| **Level:** | Blue | |
| **Description:** | The analyst enters predictions of future contract completion dates and the overall manufacturing status of the facility | |
| **Triggering Event:** | The analyst opens a form to enter forecasting predictions in the form of a report | |
| **Trigger Type:** | **External X** | **Temporal** |
| **Steps Performed (Main Path):**  1.The analyst enters their identification information in the form of their name and password  2. The analyst completes the necessary forecasting report and submits it  3. The system forwards the report to the appropriate employees | | **Information for Steps:**  1.Employee identification  2.Forecasting and contract information |
| **Preconditions:** | The analyst needs to complete a forecasting report so that it may be submitted | |
| **Postconditions:** | The forecasting report is successfully submitted | |
| **Assumptions:** | The analyst is required to complete and submit a forecasting report | |
| **Success Guarantee:** | The report is successfully submitted | |
| **Minimum Guarantee:** | The report is unable to be completed and submitted | |
| **Requirements met:** | The report is successfully submitted | |
| **Outstanding Issues:** | The report must be forwarded to the appropriate employees once it has been submitted. Accuracy of employee entries. How to store employee names and passwords? | |
| **Priority:** | 2 (Out of 3) | |
| **Risk:** | 6 (Out of 10) | |