



### Email Moderation Engine

**Project Purpose:** In every multitier organization today, e-mail is the core mean of communication between the employees and the administration. Emails are of various types and considerations, some emails are urgent and with high priority, some emails are high priority but with less urgency and some emails are less priority and general notification. Considering the increased communication bulk on employees and an ever increasing rate of email transferring in an organization, it is often observed that some of the important emails that have high priority but have to be replied on specified date are sometimes skipped by the user unintentionally because they move so low in the inbox. It causes great discomfort for the users and often great loss for the organizations.

To facilitate the users and avoid such mishaps, it is suggested that an application for email moderation should be developed. It will help the user to categorize their emails as per the email's urgency and priority level. The user will be able to set the reminder date and time for the high priority emails. The application will then deliver a notification popup to the user at his computer along with a mobile message to the user that certain number of high priority emails is to be replied today and the rescheduled email will automatically move to inbox to avoid the hustle of finding un-replied emails.

#### **Project Features:**

##### **1: Email Flags**

User will be able to mark the important emails as:

- i) High Priority Email Urgent Mail
- ii) High Priority Email With Reminder Date Defined
- iii) Low Priority Email

##### **2: Email Notifier/Reminder**

User will be showed a notification box when he logs in, about the high priority emails which the user have put reminder. The notification will display the number of high priority and low priority emails to be replied must today. The email will be resent to the user in inbox after the user has received the notification at mobile and computer.

##### **3: Mobile Alert**

User will be sent mobile alert automatically for the high priority emails that are schedules to be replied today. There will be a separate mobile message alert for each high priority email.

##### **4: Email Categorization:**

The user will be displayed a separate pane of window in horizontal bars according to the each flagged category of the email.



### **ROBOTIC SIMULATION TO DETECT EXPLOSIVE MATERIAL**

The purpose of this simulation would be the exposure of functionality of “Robots to detect the explosive material. It would cover the required Robot Model & Simulation to detect explosive material in any area, pick that material and destroy outside the range of danger. Robot Simulator will provide the benefits of searching, finding and detecting Explosive Material, to move that material from the fixed place towards some safe place, and on behalf of control room instruction, either to destroy it on the spot or to destroy it through some experts on some secure place.

#### **Main Features:**

- Detect Explosive Material in its ranged area
- Pick up the found explosive material from the spot.
- To move while picking up the explosive material away from the public place towards some free space.
- To destroy that explosive material
- Simulator will help the Control Room Administrator to instruct the Robot and to keep an eye on the movement of Robot as well.

#### **Application Type:**

Desktop based

#### **Tools:**

Microsoft Robotics Developer Studio 2008 R3, Microsoft Visual Studio.Net

Database (if required) in SQL Server

Note: These are the least requirements which must be fulfilled for the approval of project. Some features can be included/ removed according to the supervisor’s instructions in future too.



### Macro Recording System

Mapping of a certain input sequence or pattern onto an output sequence, according to the pre-defined procedure is known as Macro. In computer systems environment often users need to repeat similar actions again and again, on the applications that they use on daily basis. Macro Recording System will help users to first record a sequence of actions (keyboard input, mouse input, and other system events), save them, and then apply them manually or automatically (based on pre-defined schedule). Following are the main features of the system:

#### **Macros for Keyboard**

- Record keyboard inputs and save them for applying in future. This feature will allow users to record some text, after saving the recording, users should be able to press a hotkey to paste the text inside text based applications (such as notepad, word, excel, chat windows of messengers, inside browsers for email etc)
- Record keyboard inputs to open applications. This feature will allow users to assign hotkeys to any installed application or file or folder in the system. After pressing the certain hotkey the appropriate application/file/folder should be opened. The application must not allow duplicate hotkeys.
- Record keyboard inputs to fill forms. This feature will allow users to record keyboard sequence to enter values inside form fields for any desktop or web application (web site).
- Record Keyboard inputs for system events (Shut down, Restart, Logoff). When the certain hotkey is pressed, the system should apply the appropriate system action.

#### **Macros for Mouse**

- Capture mouse movement and clicks (left/right click). Apply these events manually or automatically (scheduled).

#### **Logging & Reporting**

- Comprehensive logging of events recorded and performed, should be captured.
- Reporting of events with attributes such as event date, time, name of logged in user, whether macro completed successfully or not.

#### **Settings:**

- The application should allow user to save settings such as:
  - Run application on startup.
  - Application Thread Priority based on windows settings (Below Normal, Normal, High etc).

**NOTE:** Windows services must be used to make the application run all the times during a logged-in session

**Tools:** Microsoft .Net or Java environment



## **Production Rejection Assessment System**

### **Objective:**

The main objective of this exercise is to introduce a simple and feasible system for dual targets, i.e. Data Entries & simultaneous On-line Monitoring along with Report Generation right from Set Production Targets Up to Dispatch of Products Side-by-side adequate Measures to Reduce the Reasons of Rejection.

To provide effective information to factory management for accurate & timely management decisions.

Salient features of the system are produced hereunder: -

- Initially it starts from Set Monthly Targets and further elaborates quantity of material from where production starts.
- To check from the machine's counter that how much handles have been produced.
- To ascertain how much material has been consumed by one machine during one target period.
- To analyze exactly how much quantity has been produced, received by Intermediate Store (IS) & how much runner has been sent to Recycling Section.
- Describes a detailed report of reasons of rejection machine/product-wise for Molding & Tufting sections after one target period.
- To maintain proper record for one target period of forwarding & receiving the handles from Molding to IS, from IS to Tufting, from Tufting Section (TS) to Sorting Section (SS), from SS to Blistering Section (BS), from BS to Packing Section (PS) & ultimately from PS to Finish Goods Store (FGS) for final dispatch.
- To monitor the difference between produced & receiving quantity of Molding/Tufting/Blistering Sections through appropriate check & balance system.
- To provide adequate information about reasons of rejection & ensure such a Target Plan which minimizes the same in future.



## **Draft List of Requirements for Software Projects (Spring 2011)**

The main aim of this system is to rectify such human errors that are committed by different levels of employees, either unconsciously or due to sheer negligence or for some trivial advantage (like reducing rate of rejection by mixing rejected handles with runners). It is also observed that in few cases, the blame for such mistakes swings at inter-departmental level, none accepts their fault and the matter is given up in confusion. For example, according to machine counter, production is more than that received by stores, sometimes the difference is even in thousands. Neither the Stores Department nor Production accepts the fault and therefore, tracing the root cause is not possible. However, it may be noted that in several cases, the person involved is not aware of the grave consequences and errors in calculations that he is going to cause. These things can easily be controlled by simple vigilant inspection or check. Sometimes encouragement of the workers at due time pays a lot.

### **Material Calculation**

First of all Factory Management estimates the material required for specific production. For this purpose the material required for each product is calculated by using particular Formulation Sheet of each product. Then management demands the material for this production after checking the material stock in hand. At the time of material calculation, colors are also chosen.

### **PRODUCTION DEPARTMENT**

PM prepares Production Plan and the Production starts on the basis of In Process Schedules for molding according to Production Plan. PM further prepares In Process Schedules for Tufting after checking Intermediate Store's stock position (for handles/caps). It is recommended that PM also prepare Process Schedules for Blistering after checking Sorting Store's stock position, (for brushes/caps) & packing material stock position report (for Blistering Card).

Material is received from Raw and Packing Material Store (RPMS) through Requisition.

OP packs the produced items in bags or containers, as instructed, and labels them with Product Label. After physical inspection Shift Incharge (SI) maintains record of production & material consumption in the Product Log Book & transfers the products to its relevant section. It is recommended that Material Calculation Form will place near on every machine so Operator can easily write down the injected quantity of material. SI also prepares Machine Down-Time Report.

### **Raw Material Store**

Store Officer receives imported/local material. He prepares and maintains records of Received Goods Intimation Slip for imported materials and Goods Receipt Note (GRN) for both imported & local materials and the material is taken in the stock ledger. Record is maintained on the Raw Material Registers.

Material is issued against Requisition Slip as and when required.

Store Officer receives recycled material from Recycling Section through Transfer Slip and maintains records in the Recycling Material Register.



## Draft List of Requirements for Software Projects (Spring 2011)

### **MOLDING SECTION**

PM prepares In Process Schedule for Molding Section. It describes that which product is in production process on each machine. A shot counter displays on every machine which shows the number of shots manufactured. When production starts, the initial and final reading of shot counter is entered in the Log Book & production is calculated by multiplying difference of initial and final counter reading (or in other words, number of shots) by number of cavities in respective molds. No Shift In charge can enter wrong figures in Log book because next shift verifies Counter reading & further writes its own initial counter reading. In the software one shift must enter its production updates, prepared qty. of specific products & shows details of pending targets of the Molding Section.

There is actually no special change in current system of Molding Section except that all entries shall now be entered in new Computer Software. In present software this system is available but some additional changes are necessary which requires incorporation.

SI prepares Requisition Slip to collect the material from Raw Material Store based on completed production on Process Schedule for Molding, Formulation Sheets and enters the balance material in the Logbook.

OP mixes material as per instructions keeping in view the Production shown on Process Schedule for Molding and feeds the same to relevant machine. It is recommended that he would write down the fed quantity on Material Consumption Form which will place in front of the machine.

After physical inspection of the product SI prepares the Daily Molding Production & Sorting Report and OP/Helper transfers product to the Intermediate Store. Recyclable and purged material is transferred to Recycling Section through Transfer slip.

SI maintains the record of production and material consumption in the Product Logbook. He also prepares Machine Down-Time Report.

### **Intermediate Store**

ASO receives items (handles, caps and brush stands) from Molding Section through Daily Molding Production & Sorting Report. SO writes down the received quantity in Daily Molding Production & Sorting Report after doing physical weight of receiving product. He arranges them accordingly at marked places and maintains records in Stock Record Register and enters data in computer software. These items are sorted out and then stored at specified places. Supervisor prepares Daily Sorting Report and Daily Molding Production & Sorting Report. ASO transfers the rejected material to Recycling Section through Transfer Slip and maintains records in stock record register and updates record in computer software. Daily Molding Production & Sorting Report is reviewed by MS/QI & its copy is sent to PM. It is sent to MS/PM/GM only on demand but they can see these reports on their system.

ASO issues required items to relevant sections (Blistering, Tufting, Packing, and Printing) against Requisition Slip by following FIFO rule as far as possible. Unused handles from tufting section and caps



## **Draft List of Requirements for Software Projects (Spring 2011)**

from blister section are returned back to IS through Transfer Slip. He maintains records in the Stock Record Register, prepares Daily Stock Position Report and provides to MS/PM/GM on demand.

### **TUFTING SECTION**

SI prepares Requisition Slip to collect the material from Raw and Packing Material Store based on Process Schedule for Tufting, Formulation Sheets and material balance in the Logbook. Similarly handles are collected from Intermediate Store. Handles which are received from Intermediate store will be added in Tufting stock position. After production the quantity which is received by Sorting section is reduced from Tufting stock position.

SI prepares Daily Tufting Production & Sorting Report in order to transfer tufted handles (brushes), whereas Helper/OP transfers them to Sorting Section. SI maintains record of production and material consumption in the Product Logbook. SI also prepares Machine Down-Time Report.

### **Sorting Section**

Supervisor receives brushes from Tufting section through Daily Tufting Production & Sorting Report & defective brushes from packing section through transfer slip. Supervisor writes down the received quantity in Daily Tufting Production & Sorting Report after checking physical weight of receiving product.

SGs carry out sorting of brushes & rejects the brushes on the basis of work instruction & formulation sheet. Supervisor prepares Daily Tufting Production & Sorting Report and forwards the same to QI/MS/PM for reviewing. Supervisor also prepares Daily Sorting Report & forwards to MS.

Supervisor prepares transfer slip for transfer of sorted brushes to Blistering section and rejected brushes to Recycling section. Some of the brushes are transferred to Tufting section through Transfer slip for re-finishing (TC) if required.

Supervisor also maintains all relevant record in sorting record register.

### **BLISTERING SECTION**

SI receives the sorted brushes from Sorting Section through Transfer Slip, brush caps from Intermediate Store and blistering cards from Packing Material Store through Requisition Slip based on Process Schedule for Blistering, and the material balance in the Logbook. Tufted handles which receives from Sorting section are added in Blistering stock position. After production the quantity which is received by Packing section is reduced from Blistering stock position.

SI prepares the Transfer Slip for transfer of blistered brushes to Packing Section. OP/Helper transfers the stock in containers/bags by trolleys. SI also prepares Machine Down Time Report. SI maintains record of production and material consumption in the Product Logbook.



## **Draft List of Requirements for Software Projects (Spring 2011)**

### **PACKING SECTION**

Supervisor receives blistered brushes from Blistering Section through Transfer Slip and maintains records in the Stock Records Register. Packing material is received from Raw and Packing Material Store; brush stands from Intermediate Store through Requisition Slip and record is maintained in the Packing Material Register. Stock is arranged in identifiable manner at marked places.

PG performs sorting using Formulation Sheets (for caps only), fixes brushes in stands according to Production Plan and finally packs the same in master cartons using 3M-Matic case sealer or manually, duly marked. If stock position does not allow final packing, i.e. required combination of brushes for packing is not available, then the received stock is temporarily packed as a part of stock management.

Supervisor shifts packed stock to Finished Goods Store and rejected to Sorting Section through Transfer Slips. Some packing is received from Finished Goods Store for repacking or rearrangement, through Transfer Slips. Records of packing are maintained in the Final Packing Register.

Supervisor prepares Daily Rejection Report and sends it to the Blistering Section. Daily Packing Report is also prepared and submitted to PM/GM if they so desire.

### **Finished Goods Store**

AMS/SO/ASO receives packed brushes from Packing Section through Transfer Slip. Brushes are stored at appropriate place and quantities entered in Stock Records Register.

Order forms are received through MIS, their data is entered in the computer depending upon the available stock and Delivery Order is prepared through the software "Delivery Order". A copy of Dispatch Statement along with copy of Delivery Order and the documents provided by the transporter are sent to the Head Office. Records of Dispatch Statement and Delivery Orders are maintained. In case of unavailability of stock, Pending Orders List is prepared and handed over to GM and MS on demand.

AMS/SO/ASO transfers packing that need rearrangement of contents or repacking to Packing Section through Transfer Slip. AMS/SO/ASO prepares Monthly Dispatch Report submit to GM on demand and maintain its record. Pending target report could be viewed in new software.

### **Conclusion/ Suggestion:**

Further changes can be incorporated in the same at any stage or with the passage of time. For instance, we may introduce in our system that brushes should not be transferred to SS & instead of this sorting work should be carried out in the Tufting Hall while installing & using conveyor belt which should run, between Molding/Tufting machines to Tufting/Blistering machines. Here workers should place the brushes after accurate and proper sorting. They shall segregate rejected brushes in a placed bin. These rejected handles should be sent to SS for further sorting & for minor repairs if possible as is practice in vogue.

It is further mentioned that above suggested system would not only reduce the process time, but also reduce manpower and storage requirements. It is also suggested that the layout and design of the new plant premises be adequately designed according to the flow of production process.





## Draft List of Requirements for Software Projects (Spring 2011)

### Acronym

PRAS	Production Rejection Assessment System
MS	Molding Section
TS	Tufting Section
IS	Intermediate Store
BS	Blistering Section
PS	Printing Section
SS	Sorting Section
SS	Stationary Store
PGS	Packing Section
RS	Recycling Section
FGS	Finished Goods Store
RPMS	Raw and Packing Material Store
OP	Operator
SI	Shift Incharge