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Abstract

To capture detailed requirements for transport app



transport desk automation

Requirements

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# Objective:

Currently all the work related to cab management like rooster creation, cab verification, billing to vendor, vendor management, usage reports, etc. are all manually done by the transport people. This is a time consuming process and leads to manual error that does effect the delivery teams as employee are missed in the rooster creation or billing errors. To create an automated suite of applications that can be used by transport desk in Infosys to carry on their day to day tasks. This will be rolled out initially in Jaipur and then to other DCs after app matures.

# Key points to remember:

* The app need to aide transport desk to execute their tasks easily rather than becoming an overhead.
* Keep track of number of clicks it takes to perform a task: Add cab/create rooster
* UI is very important, automate as much as possible and with auto fill and edits.

# Keywords

**Rooster**: Sheet with details for employees travelling in a cab. I rooster for every cab and is specific

**Shift**:

Log in: Time at which you need to be in office. The pickup time will be earlier then the login time

Log out: Time at which the cab departs from the office

**SR**: Special requests raised by employees on demand which is different from the regular shifts.

**Trip Sheet**: Verified sheet filled in by the employees for billing to be done by the vendors.

**Desk**: The transport desk

# Key functionalities

## Route Uploading / Rooster creation

To create roster and upload the completed roster via excel. Roster creation required cab to be assigned to a set of people. After creating roster send SMS and print the roster.

## On Demand Request

Screen to help users to create requests.

## Vendor Management

Should be able to add remove vendors

## Cab Management

Desk should be able to manage the cabs. Add new cabs, update compulsory criteria. Assign cabs to vendors.

## Penalty/ Fine Management

In case cab is rash driving, late and is missing and SLA, desk should have provision to levy fine a cab/vendor.

## Billing System

All the cabs are billed by route and trip sheet, need a system to keep track of payments.

## Shift Management

Need to set the shifts and routes, and the timings for SR.

## Roles Management

There will be various users: Admin, Desk user, desk manager, second level manager, super admin. Need to manage all these roles and access.

## Reporting

Daily, weekly and monthly reports need to be generated by application. Reports will fir for utilization, no show, cab fines, vendor payment report etc.

## Alert mechanism:

In case any SLA or activity is not getting completed in given amount of time, alerts need to be sent to respective users. Sample alerts:

Alerts to senior people for SLA missing

Rooster Preparation (15 min logout / 4 hrs. login)

Usage Reporting (1hr)

Trip Sheet (72 hrs.)

## Dashboard

Need a live dashboard to see current stats: Cabs running, penalty levied, top 5 cabs, etc.

## Admin panel:

For desk admin and users to manage the stuff.

# Detailed requirements:

## Roles in System

As a transport admin and super admin

* 1. I should be able to assign roles to
  2. People should login via their windows authentication

Following roles will be available in the system.

1. **DC Admin**: Has full access to all the functionalities in the system for a particular DC.
2. **Manager**: Has access to limited access to the functionalities in the system for a particular DC.
3. **Associate**: Has restricted access to some of the functionalities in the system for a particular DC.
4. **ReportViewer**: Has only read access to the reports in the system for a particular DC.

## Route Uploading / Rooster creation

As a desk user I should be able to:

* 1. See the requests in various tabs

One tab will be for a Date/shift/login or logout.

When I select a tab (say 1:30 logout on 23rd Sep) I should be able to see and sort the requests. I should be able to select a set of users and assign a vendor to them

When I select a vendor a second dropdown containing available (and allowed) cabs should be shown.

* 1. Once I select a cab for shift the same cab should not be shown again.
  2. The number of people that get added to a cab should not be greater than cab capacity.
  3. Each cab should be given a unique route ID. **YYMMDDHHMM[i/o]nnn**
  4. After assigning the cabs to ALL employees I should hit a “create roster” button.
  5. On creating roster an SMS need to be sent to all employees mentioning cab number and pickup time.
  6. Also a printout is needed to roster format.
  7. Desk user should be able to re-print and particular roster or look it up on screen.
  8. The roster details need to be saved in database for future reference.
  9. The screen must have drag and drop features to ease the roster creation.
  10. A count of total employee’s vs total roostered should be shown real-time

## On Demand Request

Please meet Sachin Gautam for this, he has already coded this part.

As an employee I should be able to:

* 1. Key in a request for login or logout
  2. Send it for approval
  3. The request should be approved by employee’s manager.
  4. Request can be re-occurring also.
  5. After approval request should appear in roster queue.
  6. Cutoff time to place request is 2 hours for logout and 1 day for login

## Vendor Management

As a transport desk I should be able to:

* 1. Add new vendors and delete/modify them
  2. Vender details that need to be captured are: Vendor name, ID, address, empanel date.
  3. See the existing list of vendors and number of total and valid cabs vendor is having.
  4. Also provides the comments section to put notes

## Cab Management

As a transport desk employee I should be able to:

* 1. Add a new cab for existing vendors.
  2. Modify list for compulsory and optional requirement for a cab (e.g.: pollution check, driver license, cab registration etc.)
  3. Attach (and modify) driver for a cab.
  4. Details to capture for a cab are: Cab number (RJ-14 CB 1234: Separately), Vendor, capacity, empanel date, Driver name
  5. Each cab should have dates assigned to all compulsory and optional requirements keyed in 4.2 above.
  6. These needs to be fulfilled before the cab can be associated with a rooster.
  7. Able to modify the dates for all checks
  8. The cab should get disabled if any compulsory date is in past.
  9. Should be able to manually disable cab or driver.
  10. Penalty removal can be done by desk admin only.
  11. See the cab related alerts (if any item is expiring)(No. of days for alert should be customizable i.e. maintain it in web.config or property table in database)
  12. For disabling Cab, there should be two flag check for Cab is valid or not(one is automatic to check corresponding to all properties expiry date and other is manual which is disabled by Admin user with valid comment)

## Penalty/ Fine Management

As a desk user:

* 1. I should be able to apply penalty on any cab giving the amount and reason.
  2. The penalty can be removed only be desk admin.
  3. Details to be captured are: Cab Number, Penalty description, penalty amount, penalty date/time

## Billing System

As a desk user I should be able to:

* 1. Verify and mark the roster as details received.
  2. The verification need to be done in 72 hours of cab departure
  3. At the month end need to generate total bill amount for each cabs
  4. Cabs are paid per route, depending on type and time of route the payment is different, need to keep track of this.
  5. Mark the cab as paid or unpaid.
  6. Show the total amount that need to be paid to vendor
  7. Need to have capability for manual adjustments by transport admin.

## Shift Management

Need to set the shifts and routes, and the timings for SR.

As a desk user I should be able to:

* 1. Set the shift times
  2. Set the SR times
  3. Set the pickup points
  4. Set the amount for each trip at given time.

## Reporting

The application need to generate e-mail reports and online reports:

* 1. The online reports need to have filter options like excel.
  2. Utilization report: total number of employee’s planned / total number of seats available for a day in all shifts. Rollup totals should also be shown.
  3. Performance report: total number of employees travelled/ total number planned
  4. Penalty report: Cabs list with penalty codes and amount
  5. Roster status report: See the time a roster was prepared for a shift
  6. Data entry report: when was data keyed in after the departure
  7. No show report: employees not showing up sorted by count in a month.
  8. Travel head count: number of employees travelling per shift per day
  9. Cab status report: number of active and deactivated cabs per vendor
  10. All the reports need to have export to excel feature.

## Alert mechanism:

The application need to send e-mail/SMS alerts if:

* 1. A roster is not prepared 15 minute before departure
  2. Employees travelled number is not updated within 1 hours of cab arrival/departure
  3. Billing details are not submitted within 72 hours of cab arrival/departure
  4. A cab has expired on a particular day with reason
  5. Employee is no show for continuously 3 days.
  6. A cab got more than 5 penalties in 4 weeks.

## Dashboard

Need a live dashboard to see current stats: Cabs running, penalty levied, top 5 cabs, etc.

## Admin panel:

For desk admin and users to manage the stuff.

# Screen Wireframes

TBD

# Database

This section details about the database design and the tables that will be used for the application and their purpose.

1. DC Table

This is a master table and can be updated only from the backend/ No UI

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| DCID | Integer | Yes |  |
| DCName | Char20 |  | Name of the DC |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. RolesManagement table

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Key** | **Description** |
| RoleID | Integer | Yes | Primary Key |
| RoleName | Char20 |  | Role type |
| RoleAccess | Char100 |  | Access to different screens/ functionality |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. ShiftManagement Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| ShiftID | Integer | Yes |  |
| ShiftType | char/ Bool |  | Type of shift “log in” or “log out” |
| ShiftTIme | char/ TIme |  | Time of the shift |
| DCID | Integer | Foreign Key with DC table | Linking with DC table for which the shift exists |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. VendorManagement table

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| VendorID | Integer | Yes |  |
| VendorName | Char50 |  |  |
| DCID | Integer | Foreign Key with DC table | DC to which the vendor is associated |
| Comments | Varchar(200) |  |  |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. CabManagement table

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| CabID | Integer | Yes |  |
| CabNumber | Char 20 | Unique/ Not NULL | Number of cab |
| DocumentsVerified | Bool |  | Can be expanded with more document types |
| VenderID | Integer | Foreign key with Vendor table | Linking the vendor table |
| CabType | Char20 |  | Type of cab (innova/ tavera/ sumo) |
| Comments | Varchar (100) |  |  |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. CabProperties Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| PropertyID | Integer | Yes |  |
| PropertyName | Char(50) |  |  |
| Expiry Date | Date |  |  |
| CabType | Char20 |  | Type of cab (innova/ tavera/ sumo) |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

1. CabVerification table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** |  | **Description** |
| PropertyID | Integer | ForeignKey to CabProperty Table | Group Primary Key |  |
| CabID | Integer | ForeignKey to Cab Table | Linking to the Cab table |
| Expiry Date | Date |  | |  |
| CabType | Char20 |  | | Type of cab (innova/ tavera/ sumo) |
| CreatedDate | DateTime |  | | Audit Column |
| CreatedBy | Char 20 |  | | Audit Column |
| ModifiedDate | DateTime |  | | Audit Column |
| ModifiedBy | Char 20 |  | | Audit Column |

1. Route Management

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Datatype** | **Key** | **Description** |
| ID | Integer | Yes |  |
| Date | Date |  | Date of the request |
| EmployeeID | Integer |  | Employee ID of the requester |
| EmployeeName | Char50 |  | Name of the requester |
| Address | Char100 |  | Address of pickup / drop |
| Route | Integer |  |  |
| ShiftID | Integer | Foreign Key from Shift table | Linking with the Shift table |
| CabID | Integer | Foreign Key from Cab Table | Linking with the Cab Table |
| CreatedDate | DateTime |  | Audit Column |
| CreatedBy | Char 20 |  | Audit Column |
| ModifiedDate | DateTime |  | Audit Column |
| ModifiedBy | Char 20 |  | Audit Column |

# Appendix

## Terms

**DC**: Development center, Refers to an Infosys location in India where this can be used.

**DL**: Distribution list for mailing

**AD**: Infosys Active Directory