**Documentation:**

**MANAGE:** Help ops/managers allocate resources in efficient manner, using lowest time possible, with better efficacy.

**Assumption:**

1. We would get excel sheets in FTP folder as size of files are large.

**High level flow:**

There would be two steps;

**Step 1:**

We would have one batch job, which would run daily probably 1.00AM midnight. This scheduled job will read license information, Red ticket information from excel sheet and would push required details to database for later use.

We would be using below jars to read information from excel sheet and convert it to meaningful information.

* org.apache.poi
* com.googlecode.jcsv
* com.jcraft.jsch

We would be using spring boot framework for rest apis to push data to database.

This job will run both in automated mode as well as in manual mode. Manual job can be run as and when required.

We would have dedicated admin page to set time to run this job, also columns to be fetched from excel sheet etc.



**Step 2 –**

1. Per step 1 , application will have static data like license , red ticket etc.
2. However leave data could be different before starting shift, in case someone is n unplanned leave.
3. iMM application has provision to deal with leave data before starting shift.
4. Proposed solution has admin panel dedicated for ops/managers
5. There is dedicated button called “Resource Allocation”
6. Manager will click “Resource Allocation” button from application, which will trigger an integration job.
7. Integration job will fetch real time attendance data which would be dynamic per availability of miner.
8. Integration will also refer data from database which has pushed by Step 1 and will come up with resource allocation for the given crew/section.
9. Every miner will have smart phone. Application will send push notification to miners with allocated crew/section details. Application will also save this allocation details in database
10. This integration should take 1-2 mins to find Right person with right legal requirements, at the right time for the right job to optimize production.

**LOCATE:** Identifying individual miner and their activity like check-in/check-out, time spent with specific device, and exact location, hours spent at work.

To locate miner we have built android app. Smartphone would be easy to use and interface is also pretty much simple.

**Precondition**

1. Unique QR code should be placed at the entrance/exit of mine. One QR code while entering into mine. Name it as Check out QR Code (CO-QRCode)
2. Place another QR code at the exit area of mine and name it as Check out QR Code (CO-QRCode).
3. Will also need unique QR code per device, this QR code will hold unique information about device like device id, name etc.
4. When miner wants to take a device, he will scan QR code pasted on device using smartphone. iMM android app will note the device id and start time. Later when miner returns device he needs to scan QR code again. iMM app will again note time and considered as check out. App will find time spent with specific device.
5. Android app will push above data to central server, which would be accessible to the miner, supervisors, managers, management etc.

**High level flow Diagram:**



Screenshot/Wireframe:









