

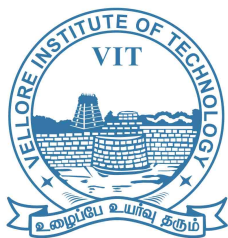
SPINNING FACTORY PRODUCTION REPORT GENERATION

CSE2004
DATABASE MANAGEMENT SYSTEMS
(J COMPONENT)
FINAL PROJECT REPORT

PROJECT SUBMITTED BY:

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VIT[®]

Vellore Institute of Technology
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ABSTRACT

Any industry or workplace management requires a functional database that can be used for business intelligence. In this attempt to create a database for a small scale cotton spinning factory we will create a database that will have information about the production on different kinds of spinning machines like drawing, carding, spinning and winding and the waste produced.

Further information about the current levels of stock and workers details can be obtained for creation of various statistical analyses and visualisations. Comparative study between electricity, production and wastage can thus be obtained. Regular Report generation is required in any functional industry.

TABLE OF CONTENTS

CONTENT	PAGE
ABSTRACT	2
INTRODUCTION	4
SYSTEM ARCHITECTURE	5
SOFTWARE REQUIREMENT	6
MODULE DESCRIPTION	8
RESULTS	10
CONCLUSION	16
REFERENCES	17

INTRODUCTION

India is among the world's largest producers of Textiles and garments.

Domestic Textile and apparel industry contributes 2% to India's GDP and accounts for 10% of industrial production, 27% of the country's foreign exchange inflows and 11% of the country's export earnings. Spinning is the second stage of manufacture of textile goods. There are 1962 spinning mills in India of which Tamil Nadu has the largest number. But Tamil Nadu is also the state which has seen the largest number of shutdowns in the spinning sector since 2016.

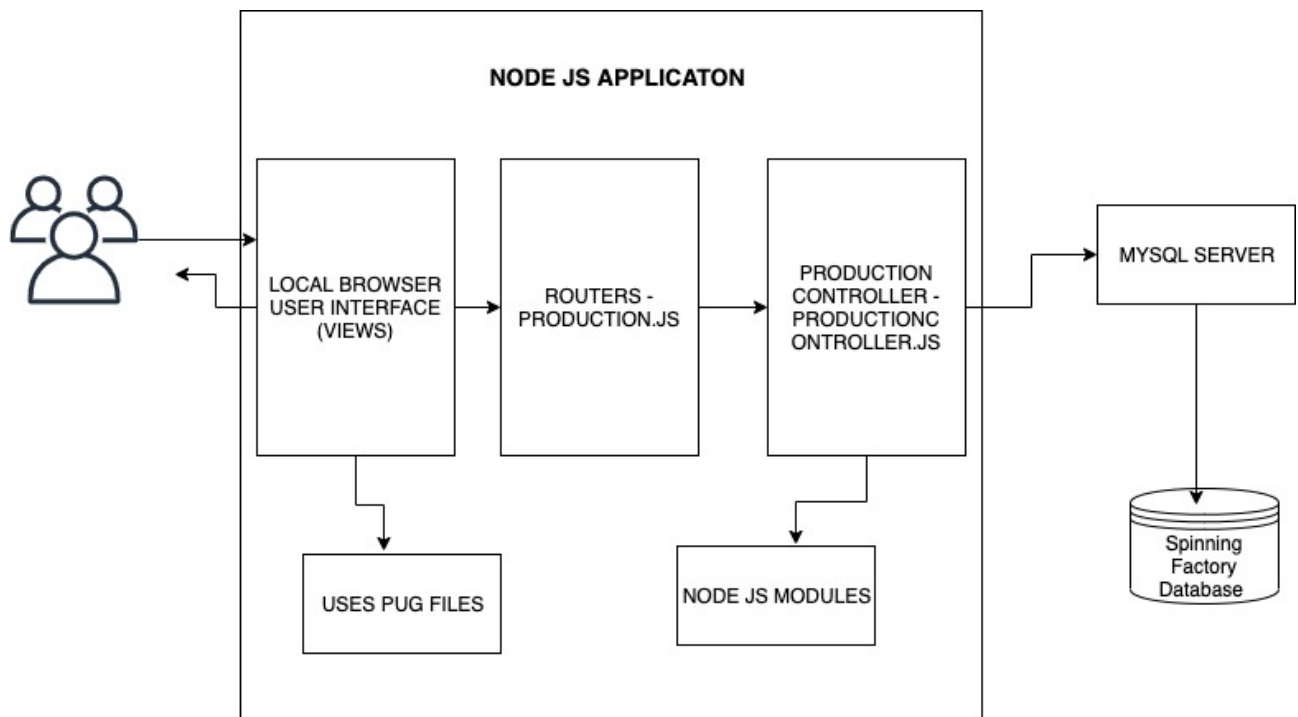
It is speculated that a big reason for this is lack of proper business intelligence tools and analysis technology that supports the specific spinning factory's needs. Most factories use normal accounting software Tally exp and Busy which cost immensely for custom alterations to their software structure. Also, most of these traditional accounting software are rarely flexible. Business Intelligence software at affordable prices aimed at this sector has immense potential. Software that can get data specific to the industry would help in comparing the data with other relevant data and using it to analyse production and wastage.

Major components in a spinning industry are the different types of machines, workers, hostels, buildings and raw materials. Data entry should be modular and discrete and at the same time there should be flexibility in retrieval for comparing data from different fields.

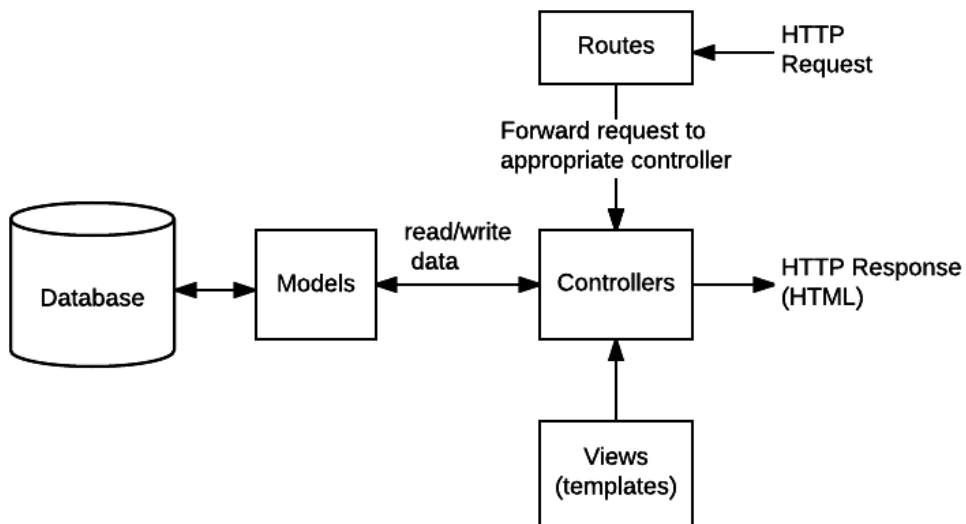
PROPOSED MODEL OVERVIEW

- SYSTEM ARCHITECHTURE

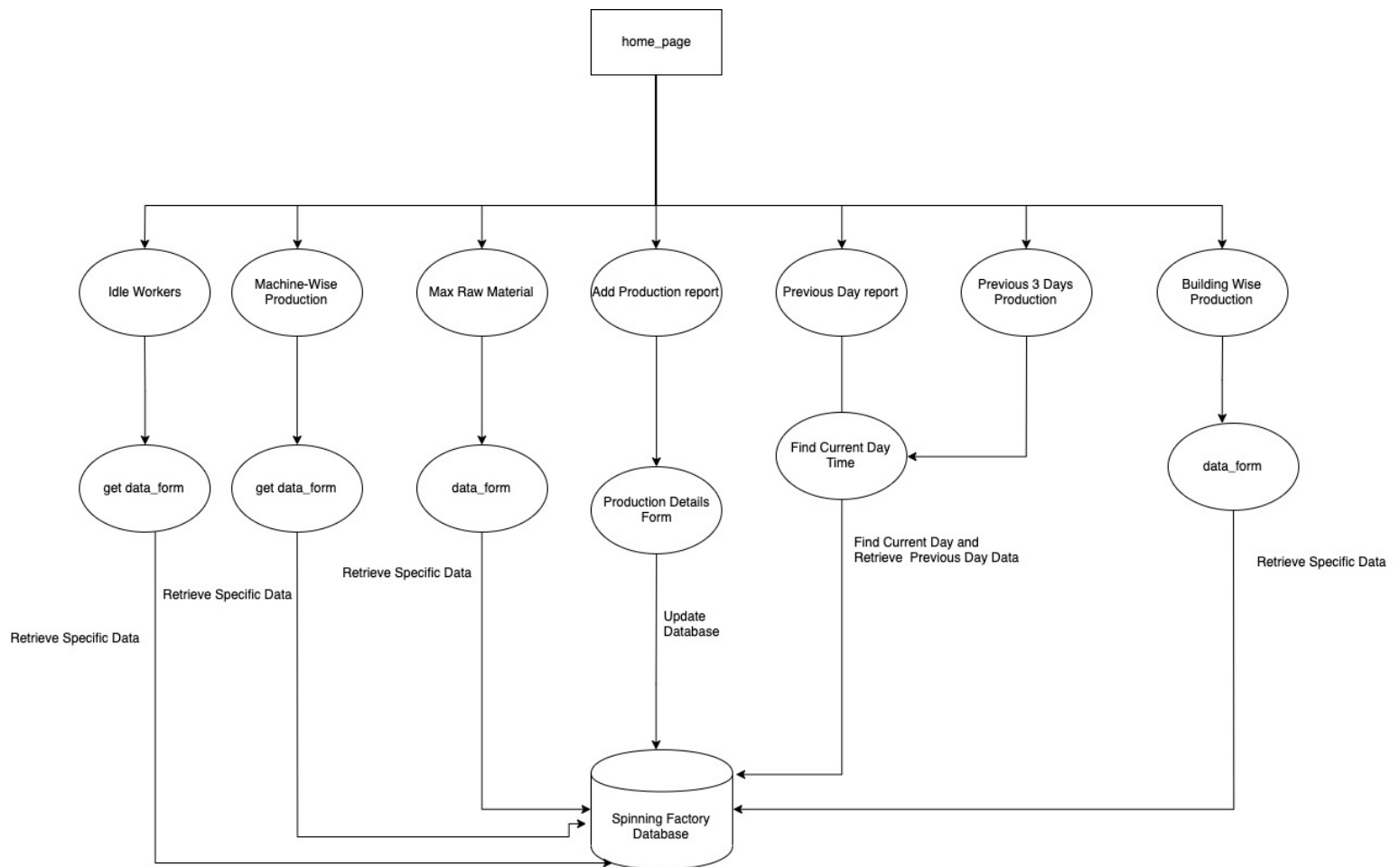
Spinning Report Generation Software:



Node JS App Architecture



SpinningReportApp Architecture:



- SOFTWARE REQUIREMENT

For the proper working of the software the system requires:

1. About 100 -200 MB space (depending on database size required)
2. Installed mySQL server (8.0.17) with workbench
3. Installed nodeJS with modules:
 1. node monitor
 2. cookie-parser
 3. debug
 4. express
 5. http-errors
 6. jade
 7. log4js
 8. pug
 9. mysql and mysql-client
4. Any Web Browser - eg: Chrome (77.0)

Tools:

Front-end: JavaScript - Node JS

Back-end: sql database with MySQL

- MODULE DESCRIPTION

SpinningReportGeneration Software has modules for:

From the first main module/ Home Page we further have:

1. Insertion of production entries
2. Worker Production Report
3. Finding Idle Workers
4. Machine-wise Production Report
5. Building-wise Production report Generation
6. Max raw Material Report

Insertion of production Entry:

This page's function is to get the specific entry details from the user to update the database. The user will have to fill out production details of a particular day via a form with details such as:

- Machine Type
- Production Quantity
- Electricity Bill Charge
- Yarn Count (Size and Thickness of yarn)
- Waste Quantity
- Item Number of the item that it processes
- Lot Number of the item that it processes
- WorkerID of worker who works on that machine on that day

It then displays responses for successful and unsuccessful updates of the database

Worker Production Report:

The home page has a custom date selection form, which will retrieve the workers production data for that time frame. Addition quick search buttons for the previous day and for last 3 days are given.

Finding Idle Workers:

This functional module finds out who has not worked on any machines in the given timeframe (by the user via a custom date form) and displays it. This is especially helpful in salary calculation in case the employee has taken long leaves of absence.

Machine-wise Production Report:

Here the production of different machines of all the 3 major types are displayed with their corresponding wastage statistics. The relation between wastage and production can be drawn to visualisations in future versions.

Building-wise Production Report Generation:

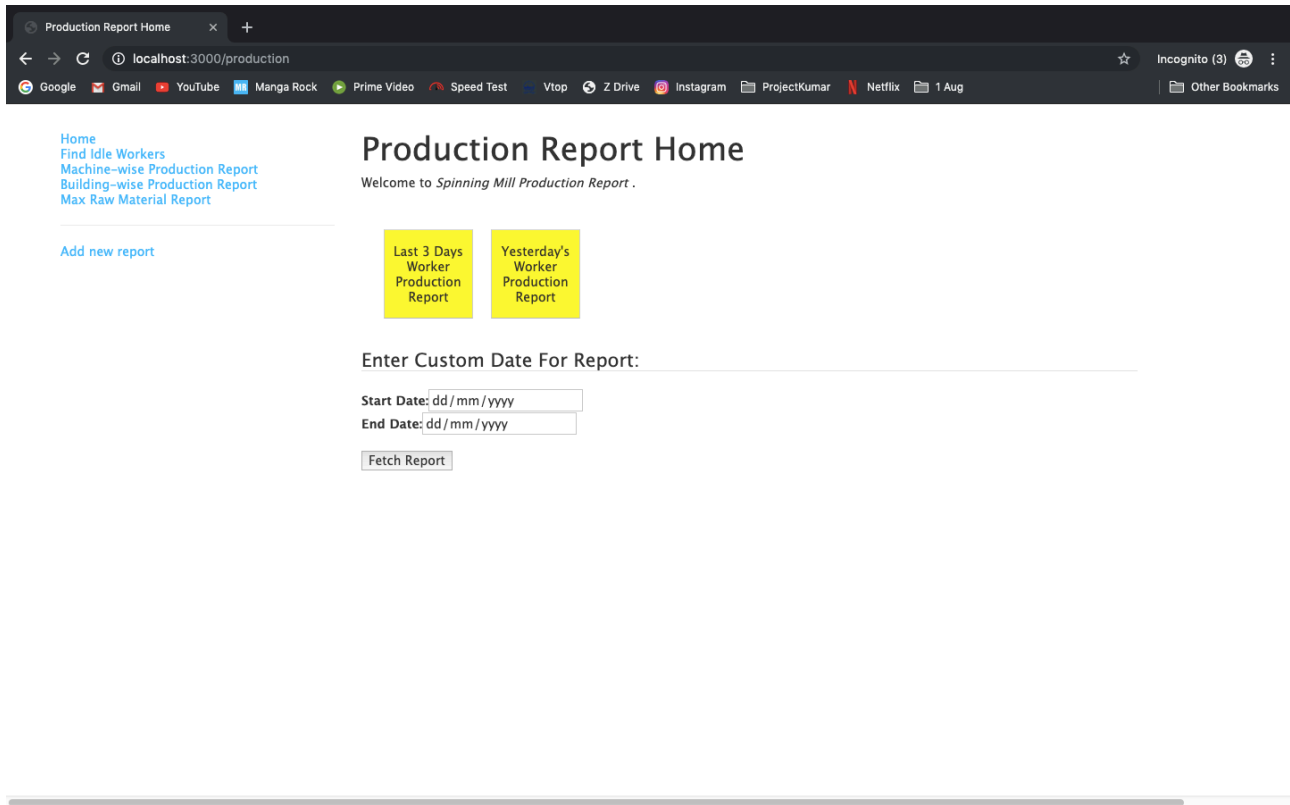
Often in common small scale industries different machines are placed together in different building supervised by different personnel. This stat would help analyse the productivity of different buildings. This is constrained by the time frame requested by the user.

Max Raw Material report:

Here the raw materials used in the machines in the timeframe (from user) is checked and the most used type of raw material (with the quality) is displayed.

RESULTS AND SCREENSHOTS

Home Page:



Worker Production from a custom date:

The screenshot shows a web browser window with the address bar displaying 'localhost:3000/production/reports?startDate=2019-10-10&endDate=2019-11-10'. The page title is 'Production Report'. Below the title, there is a table with 4 columns: 'WID', 'First Name', 'Last Name', and 'Production Qty (in Kilos)'. The table contains 20 rows of data.

WID	First Name	Last Name	Production Qty (in Kilos)
34	Lashonda	Williamson	277
33	Astrid	Thomas	277
32	Usha	Faulkner	280
7	Jay	Gatby	290
22	Lavelle	Mcgee	290
23	Brynn	Shea	290
27	Clarence	Humphrey	290
6	Jim	Carraway	290
31	Simonne	Mckenzie	298
30	Zolla	Buck	298
20	Cary	Rosales	311
5	Jason	Carter	311
25	Regena Dieckman	Cole	311
13	Lesia	Lynch	314
40	Horace	Bird	320
29	Elin	Stark	320
15	Charlesetta	Stokes	370
4	Rohit	Rajesh	601
12	Joni	Gonzalez	614
1	Ram	Karthik	620
11	Jay	Franco	980
8	Ahmed	Nafaz	1070

Quick search previous day's report:

Production Report Home

Welcome to *Spinning Mill Production Report* .

Last 3 Days
Worker
Production
Report

Yesterday's
Worker
Production
Report

Enter Custom Date For Report:

Start Date:

End Date:

[Home](#)
[Find Idle Workers](#)
[Machine-wise Production Report](#)
[Building-wise Production Report](#)
[Max Raw Material Report](#)

[Add new report](#)

Production Report

WID	First Name	Last Name	Production Qty (in Kilos)
8	Ahmed	Nafaz	250
27	Clarence	Humphrey	290
12	Joni	Gonzalez	300
1	Ram	Karthik	320
29	Elin	Stark	320

Quick Search last 3 days report:

Production Report Home

Welcome to *Spinning Mill Production Report* .

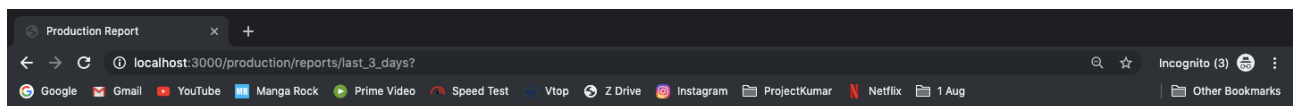
Last 3 Days
Worker
Production
Report

Yesterday's
Worker
Production
Report

Enter Custom Date For Report:

Start Date:

End Date:



Production Report

WID	First Name	Last Name	Production Qty (in Kilos)
8	Ahmed	Nafaz	250
33	Astrid	Thomas	277
32	Usha	Faulkner	280
11	Jay	Franco	290
7	Jay	Gatby	290
22	Lavelle	Mcgee	290
27	Clarence	Humphrey	290
30	Zoila	Buck	298
12	Joni	Gonzalez	300
20	Cary	Rosales	311
4	Rohit	Rajesh	311
13	Lesia	Lynch	314
29	Elin	Stark	320
1	Ram	Karthik	320
15	Charlesetta	Stokes	370

Finding Idle Workers:

[Home](#)
[Find Idle Workers](#)
[Machine-wise Production Report](#)
[Building-wise Production Report](#)
[Max Raw Material Report](#)

[Add new report](#)

Find Idle Workers

Welcome to *Spinning Mill Production Report*.

Enter Custom Date For Report:

Start Date:

End Date:

Idle Workers Report		
WID	First Name	Last Name
100	Ali	Arslan
1	Arslan	Arslan
2	Arslan	Arslan
3	Arslan	Arslan
4	Arslan	Arslan
5	Arslan	Arslan
6	Arslan	Arslan
7	Arslan	Arslan
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Find Machine Wise Production:

[Home](#)
[Find Idle Workers](#)
[Machine-wise Production Report](#)
[Building-wise Production Report](#)
[Max Raw Material Report](#)

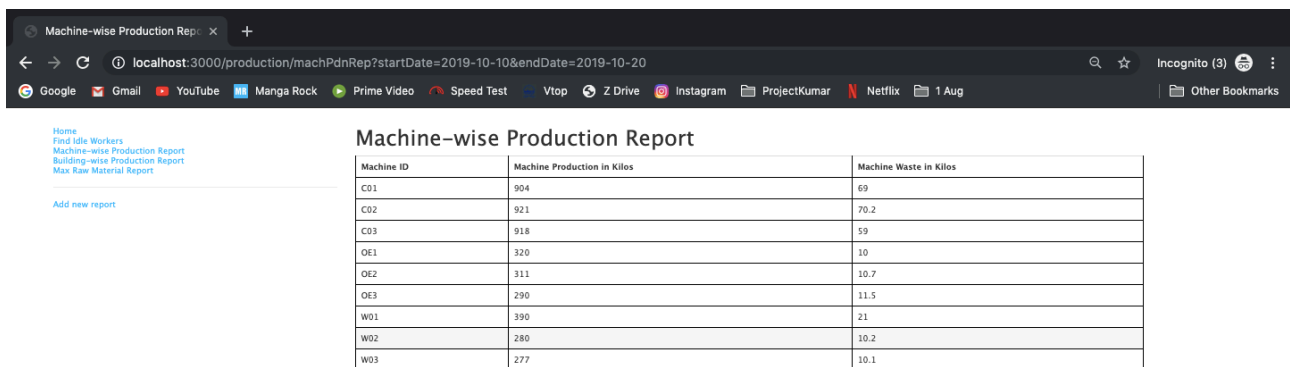
[Add new report](#)

Machine-wise Production Report

Welcome to *Spinning Mill Production Report*.

Enter Custom Date For Report:

Start Date: 10/10/2019
End Date: 20/10/2019



Machine ID	Machine Production in Kilos	Machine Waste in Kilos
CO1	904	69
CO2	921	70.2
CO3	918	59
OE1	320	10
OE2	311	10.7
OE3	290	11.5
WO1	390	21
WO2	280	10.2
WO3	277	10.1

Building Wise Production:

[Home](#)
[Find Idle Workers](#)
[Machine-wise Production Report](#)
[Building-wise Production Report](#)
[Max Raw Material Report](#)

[Add new report](#)

Building-wise Production

Welcome to *Spinning Mill Production Report*.

Enter Custom Date For Report:

Start Date: 10/10/2019
End Date: 20/10/2019

Building-wise Production Rep

←

→

↻

localhost:3000/production/bdnPdnRep?startDate=2019-10-10&endDate=2019-10-20

🔍

☆

Incognito (3)

⋮

Google

Gmail

YouTube

Manga Rock

Prime Video

Speed Test

Vtop

Z Drive

Instagram

ProjectKumar

Netflix

1 Aug

Other Bookmarks

Home

Find Idle Workers

Machine-wise Production Report

Building-wise Production Report

Max Raw Material Report

Add new report

Building-wise Production Report

Building ID	Building's Production (All Machines)
W	2743
X	921
Y	947

Max Raw Material Report:

Home

Find Idle Workers

Machine-wise Production Report

Building-wise Production Report

Max Raw Material Report

Add new report

Max Raw Material Report

Welcome to *Spinning Mill Production Report* .

Enter Custom Date For Report:

Start Date:10/10/2019

End Date:11/10/2019

Fetch Report

Maximum used Raw Material

←

→

↻

localhost:3000/production/rawMatRep?startDate=2019-10-10&endDate=2019-10-11

🔍

☆

Incognito (3)

⋮

Google

Gmail

YouTube

Manga Rock

Prime Video

Speed Test

Vtop

Z Drive

Instagram

ProjectKumar

Netflix

1 Aug

Other Bookmarks

Home

Find Idle Workers

Machine-wise Production Report

Building-wise Production Report

Max Raw Material Report

Add new report

Maximum used Raw Material

THE ITEM CODE	THE ITEM'S NAME
C101	COTTON QUALITY 1

Insertion of production stats:

localhost:3000/production/create

Home
Find Idle Workers
Machine-wise Production Report
Building-wise Production Report
Max Raw Material Report

[Add new report](#)

Enter Production Detail

Spinning Code:
W01

Date:
17/10/2019

Production Qty:
150

EB Charge:
17

Yarn Count: *
30

Waste Qty:
27

Item Number:
C102

Lot Number:
002

Worker Id:
1

Save

Successful Entry:

localhost:3000/production/create

Successfully Inserted the Production Entry.

[Go back to insert another entry](#)

Failed Entry:

Bad Request

CONCLUSION

Thus, a functional SpinningReportGeneration software is created for the use of various small scale spinning factories that require basic business intelligence tools. This area is often unexplored and has immense potential for growth. With further functionalities and report generation mechanisms, it would be possible to develop the software to monitor realtime production statistics. With additional data, the accuracy of decisions for business intelligence would considerably increase.

There are a lot unexplored fields in the textile industry that haas yet to receive any specific technological attention. These are areas where MNCs don't dominate as much as they do in the service sector. The idea of a business intelligence tool for a typical small scale spinning mill is very scalable and can be extended to a lot of other sections in the manufacturing sector. The typical manufacturing framework that a manufactured cotton textile product goes through is, Ginning, Spinning, Knitting, Weaving, Dying etc. All these manufacturing industries are composed of majorly small scale factories who do not have enough exposure or the funds to go for custom made business intelligence tools.

So through this project we have created a mini scalable business report generation tool that can in the future be extended for specific textile industries and their specific needs based on their internal structure.

REFERENCES

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- [2] <https://stackoverflow.com/questions>
- [3] https://www.w3schools.com/nodejs/nodejs_mysql.asp
- [4] <https://bitbucket.org>
- [5] <https://www.infosuite.com/industries/textile/>