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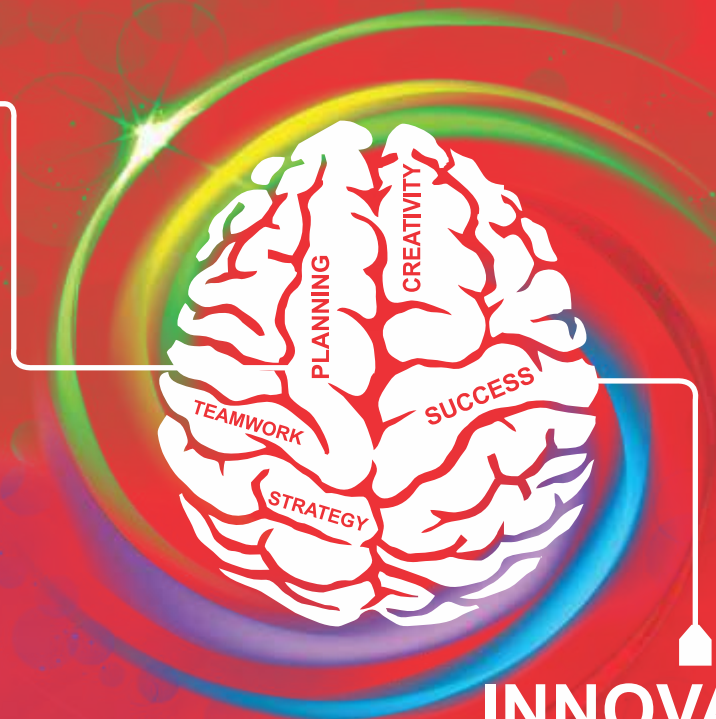


MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES  
GOVERNMENT OF INDIA



**NASHIK INDUSTRIES & MANUFACTURERS' ASSOCIATION**

STUDENTS



**INNOVATION**

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# SME LIVE PROJECTS BY ACADEMIA

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A BOOKLET OF STUDENTS PROJECTS 2019,  
NASHIK

SUPPORTED BY



**TATA TECHNOLOGIES**

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**Harishankar Banerjee**

President, NIMA

**Tushar Chavan**

Hon. General Secretary, NIMA

## Registered Office:

P - 14 NIMA House, MIDC Satpur,

Nashik- 422007 (MH) India,

T +91 253 - 2353877, 2350277,

F +91 253 2357877

nimanashik@gmail.com

**www.nimanashik.in**

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## Responsible

**Mr. Shrikant Bachhav**

Coordinator NIMA Innovation Facilitation Cell

## Design and Layout

**Bulls Eye**

bulls.adv@gmail.com

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**Bhujbal Knowledge City**

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INDUSTRY CELL COORDINATOR : Dr. VITTHAL GOND

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INDUSTRY CELL COORDINATOR : Dr. KISHOR BHADANE

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- PO Tracker.



# Student Innovation Project

## Project Title

Desalination of sea water with solar tracking and cleaning system

## Project Outcome/ Impact on SME's

Project team has invented a low cost, high efficient and renewable based solar desalination system. In future, our team want to implement this prototype on commercial basis.

### Before



### After



#### Description:

Firstly Solar Still desalination system was used but disadvantage of that system is low production capacity and it don't breakdown harmful chemical bond. Then conventional energy based RO system come into market. CO2 and other gas emission also cost is the main problem with conventional energy. So solar energy based RO system comes into picture and to improve efficiency of panel used tracking and cleaning system is used.

#### Description:

Desalination is a method that can be applied to produce potable water from sea resources. This requires electricity to drive, which is supplied by a standalone PV system with battery storage. To make solar energy more fruitful, the efficiency of solar array systems must be maximized. For the efficiency evaluation of PV panels, a sun tracking- cum- cleaning system has been designed, which not only tracks the sun but also cleans the modules automatically.



**Balasaheb Jadhav**  
Jadhav Power Tech

#### Industry Feedback:

They developed renewable based prototype which may be commercialised in future. It is low cost, highly efficient prototype. Due to implementation of this project problem of shortage of water can be reduced in some extend.

#### Project Team:

● Prof. Rupali Aher

● Kalyani Bansode

● Shital Gosavi

● Shreya More

● Vaishnavi Pardeshi

# Student Innovation Project

## Project Title

Automatic wire cutting machine

## Project Outcome/ Impact on SME's

Project team has invented a low cost, high efficient and renewable based solar desalination system. In future, our team want to implement this prototype on commercial basis.

### Before



#### Description:

Earlier the wire required for company's work were cut manually by the labours. Manual cutting of wire increases the chances of reduction in quality of work. Chances of wire not being of accurate length was probable also there were chances of labours getting injured during the process. Skills of labour was also an important consideration.

### After



#### Description:

The process proposed hardly requires a skilled labour. All that the labour needs to do is feed the wire ,adjust the diameter and enter the length and quantity of wire and rest the machine does on its own. This also reduces the chances of labours getting injured during the process and also the device is very easy to handle and use.



**Hemant Kannav**  
General Electrical Works

#### Industry Feedback:

Well implemented Logically, but needs more improvement in aesthetic means.

### Project Team:

- Dr. Dinesh M. Chandwadkar
- Dr. Sunita A.Patil (Ugale)
- Hansika Pandit
- Bidita Paul
- Sakshi Pardeshi

# Student Innovation Project

## Project Title

To Develop SOP for semi-skilled labour.

## Project Outcome/ Impact on SME's

Simple guidelines to prevent loosening of nuts of die and shift belt on the roller.

### Before



#### Description:

A Gagan enterprise uses a unique special purpose machine for producing different khakhras. Gagan enterprise is facing a problem of maintenance and mounting of machine parts. To improve over-all performance of machine, SOP will be provided for unskilled manpower.

### After



#### Description:

Developed SOP ,,

- 1] It will provide guidelines to prevent loosening of nuts of die.
- 2] It also provides corrective measure for mounting of the machine parts.
- 3] It will also help to shift belt on the roller.



**Neha Kotawar**  
Gagan Enterprises

#### Industry Feedback:

We received simple SOP for Machine operations and Professor was very helpful in explaining Machine maintenance

#### Project Team:

- Dr. P. B. Kushare
- Pratik Shroff
- Akshay Ugale
- Shubham Divate

# Student Innovation Project

## Project Title

Data Analysis and Trends Identification for Endurance Testing of Electrical Breakers

## Project Outcome/ Impact on SME's

Project team has developed software that will effectively detect fault on basis of the dataset provided and will provide result if there is any fault in the process. It also visualizes the data for analysis purpose.

## Before

### Description:

Testing process generate the output in form of large data sets which describe every minute activity performed in the testing phase. This data is to be analyzed to verify results whether it is valid or not. Data was analyzed previously but the analysis was manually, which required more time and human labour plus the main disadvantage is that it had some field that were not analyzed and may be left due to some human error.

Fault in electrical testing are abnormal situation in which machine may malfunction or may generate wrong output of the testing process. Machine condition always depends on whether it has fault or not. Due to various fault in testing process of electrical components their detection and prediction is necessary. Even the fault was not recognized manually, as it is a testing process it must be 100% accurate so there is no destruction to the user. But no effective solution was present that can analyze and detect fault at very early stage so that fault can be avoided.

## After

### Description:

The data generated during the testing process will be used to provide a fruitful result which will visualise, analyse the data as well as predict the faults. The data will be visualised using graphs, charts and pie diagrams. The data captured will be used for the training purpose of the model which will predict the fault at an early stage and will notify the

### Record classification:



```
Time taken to build model: 0.41 seconds
=== Stratified cross-validation ===
=== Summary ===
Correctly Classified Instances      484          82.5539 %
Incorrectly Classified Instances    102          17.4461 %
Kappa statistic                    0.7887
Mean absolute error                 0.0226
Root mean squared error             0.1135
Relative absolute error             24.4418 %
Root relative squared error         82.9782 %
Total Number of Instances          586
```



**Shantanu Mujundar**  
Mufront Technologies Pvt. Ltd.

### Industry Feedback:

They developed a system that can analyze data in form of visualization patterns and the system can also predict fault at early stage and if not it can detect fault from analyzed data.

## Project Team:

Prof. Umesh. K. Gaikwad

- Shalini Singh
- Harshita Jain
- Harsh Sachdev



# Student Innovation Project

## Project Title

IOT Based Street Light Control And Monitoring

## Project Outcome/ Impact on SME's

### Before



#### Description:

The operation of this street light unit is manual i.e. for functioning it On/Off we have to physically operate from a particular place. Also having a track of the condition of the lamp wasn't possible.

### After



#### Description:

Using our system, the user/controller can have access to the street light from any remote location using an Android App easily. Also if we have to set the on/off time beforehand, we can do it from the App. Also, additional feature of parameter monitoring of Street light such as total On time of a lamp would help in improving the maintenance cycle of the lamps.



#### Dr. Manoj Rathi

Research Center for Sustainable Solutions Pvt. Ltd.

#### Industry Feedback:

Students has successfully developed working prototype of Data Accusation and controlling of street light.

#### Project Team:

Mr. Pankaj V. Gautam

- Raghvendra Pal Singh
- Ajinkya Sonawane
- Deepak Mayura
- Rohit Joshi
- Paras Jadhav

# Student Innovation Project

## Project Title

Real-time monitoring and data acquisition of energy meters

## Project Outcome/ Impact on SME's

Project has proposed a solution which is compact, has lower cost, provides advanced features in small size and is reliable which can be afforded by enterprises to cater their energy management requirements.

### Before



#### Description:

1. Real-Time monitoring of the consumption is not possible in traditional metering system.
2. High cost, high size and occupies more space in panel.
3. Communication between several meters is not possible.
4. Interfacing of meter with controller to store data in memory card not possible.

### After



#### Description:

1. Communication with multiple meters.
2. Data Logging of All energy parameter for one year in device.
3. Interactive Desktop App for report generation and printing.
4. Development of Data Analytical tool for report processing.



**Rajendra Bhaurkar**  
Spark Electrical Pvt. Ltd.

#### Industry Feedback:

Student made very user friendly Dashboard for understanding of energy utilisation. We are going to test this system for six months in our industry to understand the challenges in data acquisition of different energy meters.

#### Project Team:

Mr. P. V. Gautam

- Adarsh Srivastava    ● Atharva Joshi    ● Siddharth N Kalia    ● Sushant Kolhe    ● Pritesh Deore

# Student Innovation Project

## Project Title

Safety system in order to avoid harm to the labour working on press.

## Project Outcome/ Impact on SME's

Project team has invented a low cost and efficient safety system for press machine. In future, our team want to implement this prototype on commercial basis.

### Before



#### Description:

Firstly, the press machine had no safety device at all. This may prove to be a risk for the life of a labour. Due the lack of attention a worker may put his hand in the machine while operating it. So a new system need to be device so that there will be no hazards and it can be prevented cheaply. During phase of development of prototype, we faced problem related to the mechanism to be used. Our initial design was found to be at a certain fall so it had to be dropped off and a new design was to be use.

### After



#### Description:

We expect this project to avoid any kind of accidents occurring. We have manufactured the gear and pinion, we have the fixtures ready. We only need some more finishing for the project and just making hole and tighten a few nuts. Then the only remaining things will be to fixture it on the machine.



**Manish Nikumbh**  
Swami Press Component

#### Industry Feedback:

Cost effective and optimum solution by students.

#### Project Team:

Prof. Mrs. Sonali Mate

● Aniket Korde

● Vishnu Derkar

● Saurabh Kulkarni

# Student Innovation Project

## Project Title

Process Automation in SPM

## Project Outcome/ Impact on SME's

Project team has improved industry productivity, reduced the scrap due to improper threading and more importantly reduces operator fatigue issue.

### Before



### After



#### Description:

In industry lathe machine is used to perform threading operations on product feeder pipe. This involves manual picking of pipe, clamping it in a collate, manual carriage movement, hence threading the pipe and release of product from collate. As all operations are performed manually the process accuracy and productivity depends upon the skill and speed of operator. Many times the resulting products have errors regarding the pitch of thread and feed, this results into rejection. Hence to avoid this situation, process needed to be automated.

#### Description:

Hence to improve productivity and reduce operator fatigue, we have developed an attachment on the guide ways of the lathe machine so as to perform threading operation automatically. The attachment involves a pipe clamping mechanism which is pneumatically operated. In this project, we have modified the existing lathe machine so as to perform threading operations which is done manually to automatic so as to improve the productivity. Threading operation for the product feeder pipe. We will place an attachment on the guide ways of the lathe machine to perform threading operations. Feeding motions are obtained by using a pneumatic system or either by motor. The rotation speed of



**Industry Guide: Mr. Nirmal Dhumal**  
**Contact Detail:-9371571757**

#### Industry Feedback:

They developed a design of the attachment on the guide ways of the existing lathe machine so as to improve productivity, reduced the threading operation errors and the operator fatigue.

#### Project Team:

Prof.G.Rayjade

● Ganesh Mali

● Ujjwal Bollamwar

● Gokul daware

● Akash Fasale

# Student Innovation Project

**Project Title**

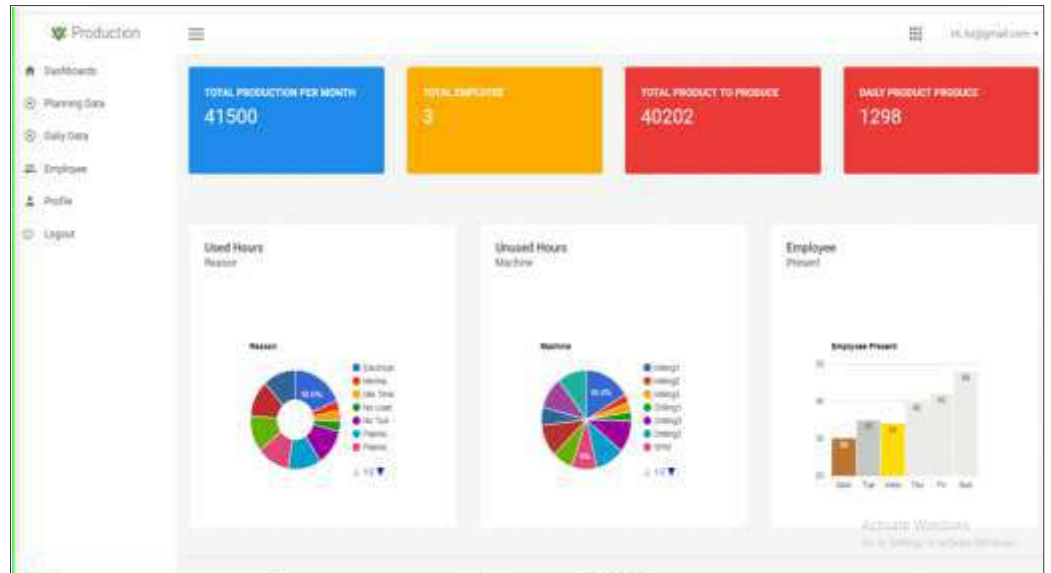
ERP SYSTEM

**Project Outcome/  
Impact on SME's**

Project team has invented a ERP system to handle the large amount of data in easy manner.

**Before**

**After**



**Manish Rawal**  
V M Auto Parts Pvt. Ltd.

**Industry Feedback:**

They developed the good ERP system which is beneficial for us in future and working of team is on right track and I am Satisfied with their Progress. Due to this Project many problem are solve easily to handling excel sheet data.

**Project Team:**

Prof. Mr. S. K. Badjate

● KalpeshSonawane

● Nitish Yadav

● Dhananjay Gahiwade

● Samruddhi Baviskar

# Student Innovation Project

## Project Title

Modification in Buffing process

## Project Outcome/ Impact on SME's

Increase in production rate

### Before



#### Description:

Due to use of low horse power motor finishing and production rate was low. As for the time required for changing the buffing wheel was taking a long time. Due to single buffing wheel the production rate was very less. And after a total of 100 units the wheel was changed. Due to use of nut and bolt used for the assembly it requires more time.

### After



#### Description:

So, to increase the torque of the wheel we replaced the motor of 1 HP by a new motor of 3HP. To reduce the time required for changing the buffing wheel we have used two output shaft motor with a conical threaded end for faster assembly and disassembly of the buffing wheel. By using the two buffing wheels the production rate will be doubled. And regarding the financial boundaries this is the perfect solution within the required amount.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

Their requirement is fulfilled and is satisfied with the solution provided by the team. With the use of new motor the finishing of the product has increased with reduced time required per unit.

#### Project Team:

Prof. M. P. Panchbhai

● Shrevas Bhavsar ● Suraj Chaurasia ● Kanhaivya Khairnar ● Shubham Bajare ● Pratik Dawange

# Student Innovation Project

## Project Title

Production Management System

## Project Outcome/ Impact on SME's

Reduce Paperwork required for Production Management, also reduces overhead of production manager of remembering delivery, production deadlines. Generating monthly/yearly reports on one click. Data available centrally.

## Before

## After

### Description:

Data wasn't centrally available.  
Lot of paperwork was required as task allocation was done on paper and those papers were stored to generate reports.  
Production Manager has to keep track of the orders and their delivery date so according to it he can allot tasks.  
Reports were generated by entering the required data from papers to Excel.

### Description:

Now, Data is centrally available.  
No need of doing lot of paperwork.  
Production Manager can add and view orders in system and can allot tasks according to their delivery date.  
Monthly/Yearly reports can get generated in one click.



**Tushar Jinturkar**  
Tushar Industries

### Industry Feedback:

We are satisfied with software development done so far. Primary module which is developed by students is ready and we tested that. We will deploy this in Month of May. Our management team is impressed due to real time reporting from Shop Floor.

### Project Team:

Prof. M U Kharat

- Indrajeet Singh
- Yash M Maheshwari
- Punam C Ahire
- Ashwini S Avhad
- Shamli V Ambekar

# Student Innovation Project

## Project Title

5S Implementation

## Project Outcome/ Impact on SME's

The 5 S system will help to ensure the Clean and tidy workplace, Higher workstation efficiency, Increased motivation and Improvement in company image.

### Before



#### Description:

Company is not able to deploy successful 5S. The Problem is most of labors are unaware of benefits of 5S environment. Company tried to deploy the 2S and 3S but they not able to sustain. As there is need of 3rd party Audits on regular time intervals.

### After



#### Description:

Initially we instructed the staff and Initial training across the table is conducted. Fortnightly follow up and Audit will be conducted for six months. Now labors are maintaining 3S in their workplace. Our workflow is now improved after training session.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

We reached up to 3S from regular training and Audit conducted by students in our factory.

#### Project Team:

Prof. R. S. Jain

● Deepak Sonawane

● Pratik Waghe

● Suresh Kadnor

● Akash Vanjari



# Student Innovation Project

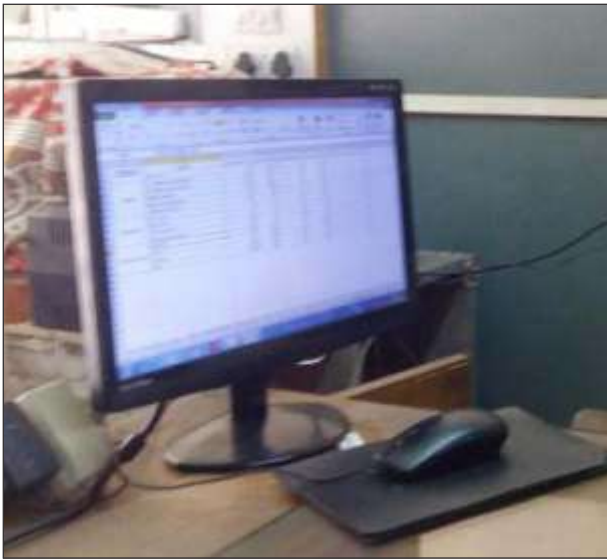
## Project Title

Designing a Software for Stock Management

## Project Outcome/ Impact on SME's

- Easily add remove, search items in database.
- Easy to maintain Status of current stock
- Alerts generation
- Stock management will be easy and helpful to smooth out production related activities of our product Hose.

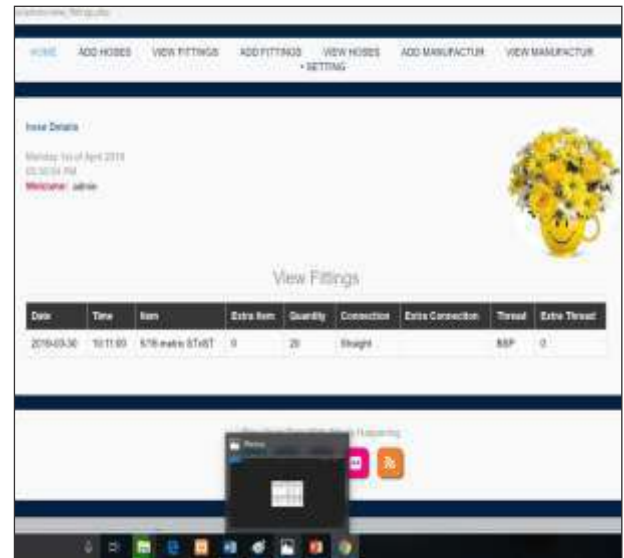
## Before



### Description:

Stock management through Excel sheet. Only single person is doing this activity and we have to search through all those files for updating our data for each customer

## After



### Description:

Now 2-3 employee can access system. Their purpose may be different. Now we have simplicity in stock monitoring. We have alerts on low stocks. Overall stock can be monitored from outside factory also.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

### Industry Feedback:

Software is beneficial for handling stock maintenance and will help to smooth out the production activities of our product Hose.

## Project Team:

Prof. Namita Kale

- Ms.Reshma Gaikwad
- Mr.Rohit Pagnrikar
- Mr.Kamesh Jadhav
- Mr.Girish Pawar

# Student Innovation Project

## Project Title

An inventory management system for sheet metal, scrap management, sheet inventory and parts produced out of given raw material to keep a track and generate report.

## Project Outcome/ Impact on SME'S

1. Centralised Data of inventory.
2. NO paperwork required.
3. Easy to maintain and secure than documentation.
4. Monthly report generation and alert mails for low production.

### Before

### After

Name	Part Number	Label	Starting Inventory	Inventory Received	Inventory Disposed	Inventory On Hand	Minimum Required
Car Cover	CP100	Car Cover CP100	1000	0	0	1000	0
Carpet	1	Carpet 1	100	0	0	100	0
Carpet	2	Carpet 2	100	0	0	100	0
Carpet	3	Carpet 3	100	0	0	100	0
Carpet	4	Carpet 4	100	0	0	100	0
Carpet	5	Carpet 5	100	0	0	100	0
Carpet	6	Carpet 6	100	0	0	100	0
Carpet	7	Carpet 7	100	0	0	100	0
Carpet	8	Carpet 8	100	0	0	100	0
Carpet	9	Carpet 9	100	0	0	100	0
Carpet	10	Carpet 10	100	0	0	100	0
Carpet	11	Carpet 11	100	0	0	100	0
Carpet	12	Carpet 12	100	0	0	100	0
Carpet	13	Carpet 13	100	0	0	100	0
Carpet	14	Carpet 14	100	0	0	100	0
Carpet	15	Carpet 15	100	0	0	100	0
Carpet	16	Carpet 16	100	0	0	100	0
Carpet	17	Carpet 17	100	0	0	100	0
Carpet	18	Carpet 18	100	0	0	100	0
Carpet	19	Carpet 19	100	0	0	100	0
Carpet	20	Carpet 20	100	0	0	100	0

Swami Press Component

### Description:

- Data was maintained manually on a datasheet.
- More complex paper work.
- No centralised access to data.
- More complex calculation required to generate a monthly inventory report.
- Managing a Document Based inventory was a hard job.

### Description:

- Data entry made easy by using autofill for some fields.
- No complex paper work needed.
- Centralisation of data.
- No complex calculation needed to generate monthly inventory report it is now done on one click.
- No documentation required as data is always available on database and easily accessible to admin.



**Manish Nikumbh**  
Swami Press Component  
Industry Feedback :

Data and inventory information once recorded on the system using this application are used to produce various kinds of reports needed time to time which are quite impossible to generate using manual excel sheets.

### Project Team:

Prof. Amit Patil

• Durgesh Dalvi

• Shubham Halwar

• Vatsal Waghela

• Sumit Dighe

# Student Innovation Project

## Project Title

Design & Development of Oil & Spices Spraying Machine

## Project Outcome/ Impact on SME's

After implementing the Proposed System productivity as well as quality of spray of oil & spices will increase.

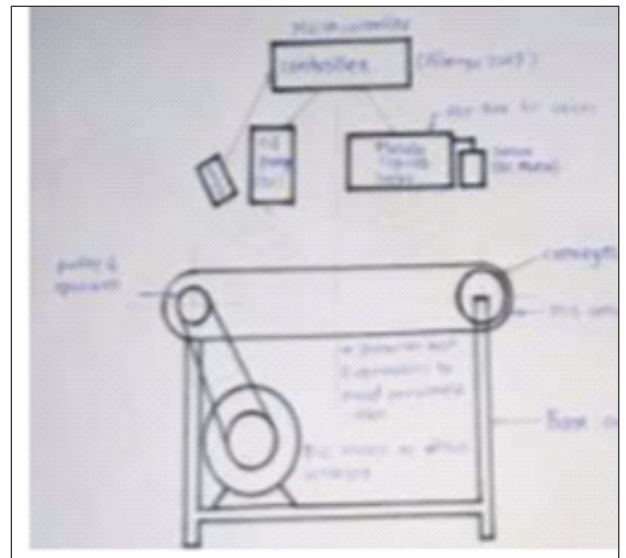
### Before



#### Description:

The current working operations such as spraying an oil and spices on khakra pieces which is presently being carried out by single worker manually, consumes a lot of time which results in lesser productivity.

### After



#### Description:

After implementing the proposed solution current working operations such as spraying an oil and spices on khakra pieces will be carried out automatically by oil spray pump & sieve mechanism reduce time. This will also improve quality of applying oil and spices.



**Neha Kotawar**  
Gagan Enterprises

#### Project Team:

Prof. R. J. Pawar

- Bhushan R. Choudhari
- Shubham L. Gawali
- Shubham S. Shinde

# Student Innovation Project

## Project Title

Capacitor Testing: Capacitor Bump Testing Atomization

## Project Outcome/ Impact on SME's

Automated test system is design for précised time and cycle control. It save time in testing and avoid hazards to operator

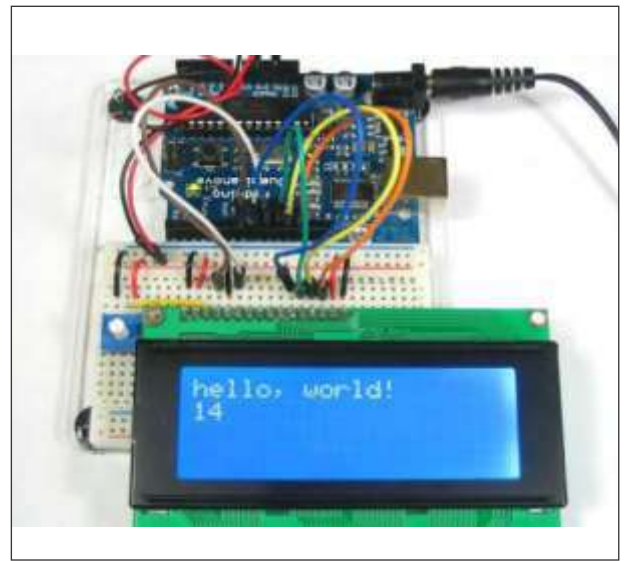
### Before



#### Description:

The capacitor is placed on test-bed and the testing cycle starts.  
Manual applying the test conditions.

### After



#### Description:

The automatic capacitor bump tester is design.  
No Chances of hazards to the operator as the testing procedure is automated



**Mr. Anirudha Ponkshe**  
Oyester Electronics

#### Industry Feedback :

The feedback has been very encouraging. The automatic selection of test cycle and duration of cycle is a kind of innovative solution in the capacitor testing procedure

#### Project Team:

Prof. Dr. Vitthal Gond

● Sumeet Dighe

● Dhanashree More

● Vatsal Waghela

# Student Innovation Project

## Project Title

Moisture Monitoring System

## Project Outcome/ Impact on SME's

The system will help the food processing industries to control the temperature and moisture in manufacturing (packaging in particular) section.

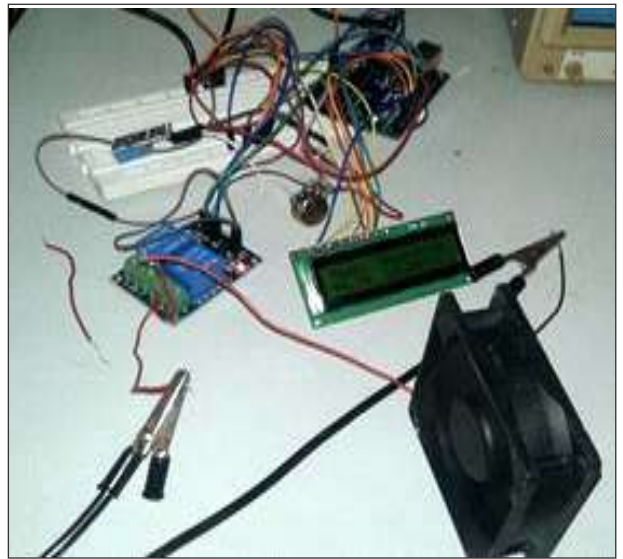
### Before



#### Description:

Sometimes the moisture present in bhel makes it soggy and derates the taste. It was observed that moisture gets trapped while packaging.

### After



#### Description:

We have developed a system which will control the moisture in bhel while packaging and hence improving the quality of food.



**Neha Kotawar**  
Gagan Enterprises

#### Industry Feedback :

We are satisfied with the progress made by the project group.

#### Project Team:

Prof. R. Rehpade

● Prerana Aher

● Kagal Gunaware

● Pratiksha Kadam

● Mamta Agale

● Snehal Bhagat

# Student Innovation Project

## Project Title

Bhel Weighing And Packaging Control System

## Project Outcome/ Impact on SME's

Productivity will increased by avoiding loses and manpower required. Method will be improved

### Before



#### Description:

Initially this process takes 45 Sec to weight and fill in the package. This is skilled task person has to be focused all the time. These is lots of error in process like underweight or overweight.

### After



#### Description:

Every package filled with quantity set and number of packets entered. So this solution help us in 3 ways. 1. Weighing speed 15 per packet. 2. Accuracy is 99% 3. Counting of packages is done by system.



**Neha Kotawar**  
Gagan Enterprises

#### Industry Feedback :

Very helpful productivity has been improved , losses , wastages has reduced.

#### Project Team:

Prof. R. Rehpade

● AmeyDhande

● Kagal Gunaware

● Shubham Jaiswal

# Student Innovation Project

## Project Title

Digital Platform For Capturing And Monitoring SME's Problems

## Project Outcome/ Impact on SME's

By creating a platform in this case a website to monitor the staff and students by a college coordinator.

## Before

### Description:

- IFC used to use excel to store data. It is hard to maintain manual records of the industry data and keep track of visits.

Project Number	Industry Name	Project Title	Assigned College	Project Co-ordinator	SFT	Contact Number
Project 1	Swani Press Components	Inventory Management system for Sheet Metal	MIT	Prof. A. S. Path	MOCA + CDMP	
Project 2	Swani Press Components	Job Removal Mechanism for Press	WIP	Prof. Santosh Mah		
Project 3	Global Electrical Works	Automatic Wire Cutting machine	WIP	Prof. Dr. Sandeshkar		
Project 4	Natural Insulation	Reduce production wastage	MIT	Prof. Dr. M. U. Khairnar	CDMP	
Project 5	SP Electronics	Automation for Bulk Inverter System	SEM	Prof. Dr. V. B. Bhatnagar		
Project 6	Nalwat Enterprises	Buffering Quality Optimization Process	WIP	Prof. Mangal Parthasar		
Project 7	Nalwat Enterprises	Issue Notice for wire & custom delivery mechanism	SEM	Prof. Ganesh J. Chavhan		
Project 8	Nalwat Enterprises	Issue to optimize existing inventory and to take more sales with auto.	SEM	Prof. A. S. Duba		
Project 9	Nalwat Enterprises	Deploying and Monitoring IOT of Industry	MIT	Prof. A. S. Jain	MOCA	
Project 10	Nalwat Enterprises	Stock Management Platform	MIT	Prof. Varun Kulk	IT	
Project 11	Gagan Enterprises	Special Purpose Machine for Khatas	MIT	Prof. A. J. Pawar	MOCA	
Project 12	Gagan Enterprises	Computerized Printing of Stock Number and order Paper	SEM	Prof. P. B. Bhatnagar		
Project 13	Gagan Enterprises	Low Cost Temperature and Humidity Control System	MIT	Prof. Rajesh B. Rajade	IT	
Project 14	Gagan Enterprises	Simple ERP for Small Business	WIP	Dr. N. S. Bhatnagar		
Project 15	Gagan Enterprises	Health & Risk Management Software	SEM	Prof. P. M. Desai		
Project 16	Gagan Enterprises	Development of Waste Handling Crane	SEM	Prof. Dr. V. B. Bhatnagar		
Project 17	Gagan Enterprises	Weighing and Packaging Machine	MIT	Prof. Anil S. Ash	DMT	
Project 18	WV Auto		WIP	Prof. Sagar Sathaye		
Project 19	Multifit Technologies Pvt. Ltd. Ahmed		WIP	Prof. Umesh Sathaye		
Project 20	Research Center for Sustainable Solution Pvt	UM	WIP	Prof. Parthiv V. Sathaye		
Project 21	Jadhav steel tech		WIP	Prof. Rajeshkar		
Project 22	Spek Electronics Private limited		WIP	Prof. Parthiv V. Sathaye		
Project 23	Bhumal Engineering		WIP	Prof. G. R. Rajgopal		
Project 24	Wise	Digital Solution for HRM (member, Database Management)	MIT	Prof. Archana Karat	CDMP	
Project 25	Wise	Digital Platform for Capturing and Monitoring SFT Problems	MIT	Prof. Sushant Shethkar	CDMP	
Project 26	Chyavir Electronics	Bump Tester	MIT	Prof. Dr. H. J. Gond	DMT	
Project 27	Rangashah Enterprises	Issue related case	SEM	Prof. G. S. Bhatnagar		
Project 28	Rangashah Enterprises	Automation for solution for supply	SEM	Prof. Hari Prasad		
Project 29	Rangashah Enterprises	IoT Tracker	SEM	Prof. Anil Podd		
Project 30	GM Designing and Engg. Pvt. Ltd	Project Title	SEM	Prof. Hari Prasad		

## After

1. IFC will use the web platform tailored to the our needs to enter the data which will be stored in the database. IFC will Monitor updates and progress of multiple projects and teams. Keeping track of visits is simplified. A report will be automatically generated.

The screenshot shows the NIMA IFC dashboard with the following statistics:

- TOTAL NUMBER OF PROJECTS: 3
- NUMBER OF REGISTERED SHES: 4
- COMPLETED PROJECTS: 3
- PENDING PROJECTS: 0
- NO OF USERS: 2
- NO OF CO-ORDINATORS: 2

The Co-ordinators list is as follows:

Select	Name	Username/Email
<input type="checkbox"/>	Parthiv Negare	parthiv123@gmail.com
<input type="checkbox"/>	Parthiv Jadhav	jadhavparthiv@gmail.com



**Shrikant Bachhav**  
NIMA IFC

## Project Team:

Mr. Vaibhav Dabhade

● Riya Dabhade

● Kratika Ahire

● Hemant Khairnar

# Student Innovation Project

## Project Title

Digital Solution for NIMA Member Database Management

## Project Outcome/ Impact on SME's

Less time spent on information management, easy to generate reports, accessibility on all devices.

## Before

### Description:

IFC is using PowerPoint to create the report and its a difficult to maintain various data points in one single slide.

Date	SME Name	Contact Details	GIZ engagement	Pain Areas /Update on College Projects	Future Support
14.1.2019	SP Electronics (Owner- Maile)	Gajendra Chopde Email: spelectronics@rediffmail.com	• Student Innovation Project	<ul style="list-style-type: none"> <li>Electrical Test setup is very limited in Nashik.</li> <li>Students need more guidance for Product Development</li> </ul>	• Electronics Cluster needed and events related to that.




Student Developed solution and piloted in industry from small load for component test . Industry mentor is guiding them for further development.



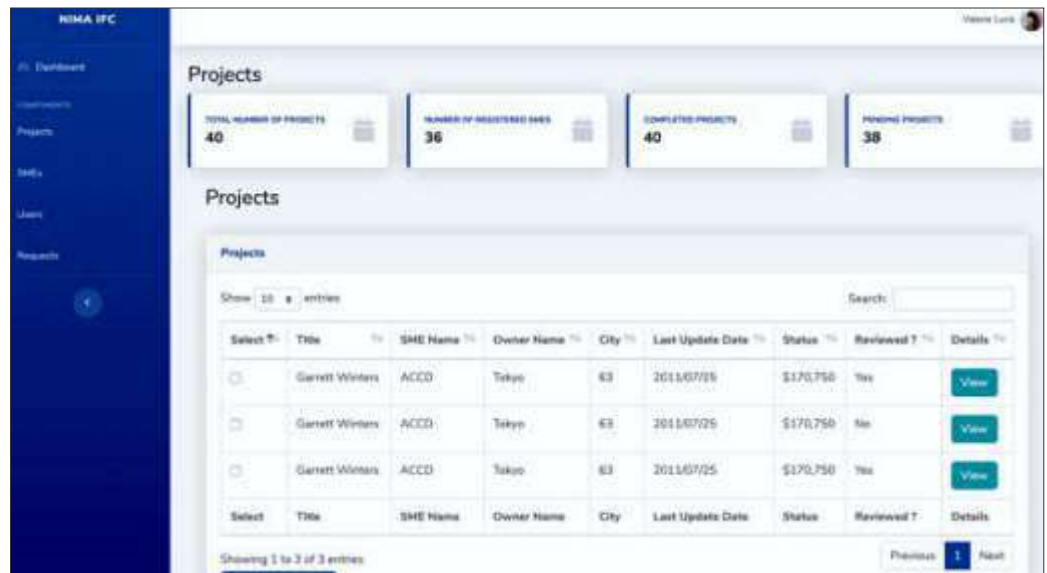
Production Line : 

## After

### Description:

The data will be conveniently linked to the corresponding SMEs.

Keeping track of visits is simplified. A dynamic PDF report is automatically generated.



**Projects**

- TOTAL NUMBER OF PROJECTS: 40
- NUMBER OF REGISTERED SMEs: 36
- COMPLETED PROJECTS: 40
- FINISHED PROJECTS: 38

Select	Title	SME Name	Owner Name	Qty	Last Update Date	Status	Reviewed ?	Details
<input type="checkbox"/>	Garrett Winters	ACCD	Takoo	63	2011/07/05	\$170,750	Yes	<a href="#">View</a>
<input type="checkbox"/>	Garrett Winters	ACCD	Takoo	63	2011/07/05	\$170,750	No	<a href="#">View</a>
<input type="checkbox"/>	Garrett Winters	ACCD	Takoo	63	2011/07/05	\$170,750	Yes	<a href="#">View</a>

Showing 1 to 3 of 3 entries



**Shrikant Bachhav**  
NIMA IFC

## Project Team:

Prof. Archana Banait

● Mr. Pushakar Nagpure

● Miss. Snehal Songire

● Miss. Tejal Pawar



# Student Innovation Project

## Project Title

Automatic Printing of Batch Number on Sticker Paper

## Project Outcome/ Impact on SME's

Automatic printing of batch number is easily possible in all kinds of Manufacturing and packaging Industries

### Before

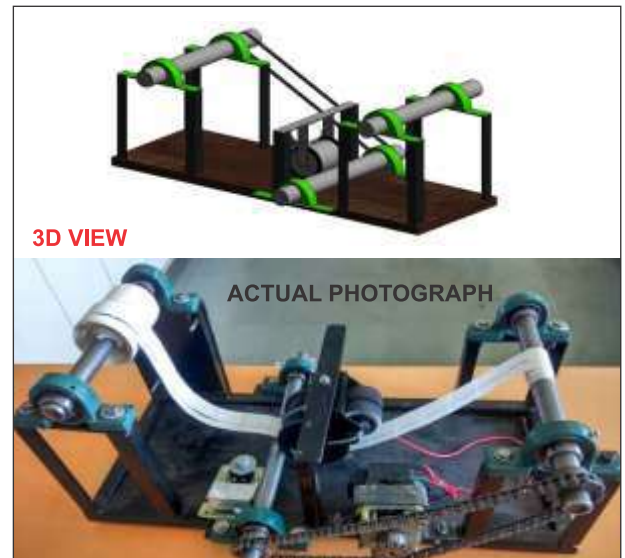


#### Description:

printing labels with batch number and packaging date according to Indian standard batch no. is mandatory on each product. commercially available printers are overpriced. Logistics process is hampered due to total man-hours and manpower. Issues identified are;

- Manually printing Label with batch numbers and packing date.
- More time consuming with higher man hours (Time required to print Label per sticker with details is approx. 20 sec).

### After



#### Description:

- One-time data feeding for particular product and batch.
- Maximum no. of stickers can be stamped within less time.
- Total man-hours and manpower is reduced. Less maintenance.
- When paper roll finished machine will be automatically stopped.
- It is dynamic in which we can change the alphanumeric letters as per our requirement instead of changing complete rubber groove.
- Flexibility of changing even single character.
- Manual operation using handle is also facilitated to save the electricity.



**Neha Kotawar**  
Gagan Enterprises

#### Project Team:

Prof. Y. R. Risodkar

• Prashant Takate

• Sapekesh Ahirrao

• Karan Asaw

# Student Innovation Project

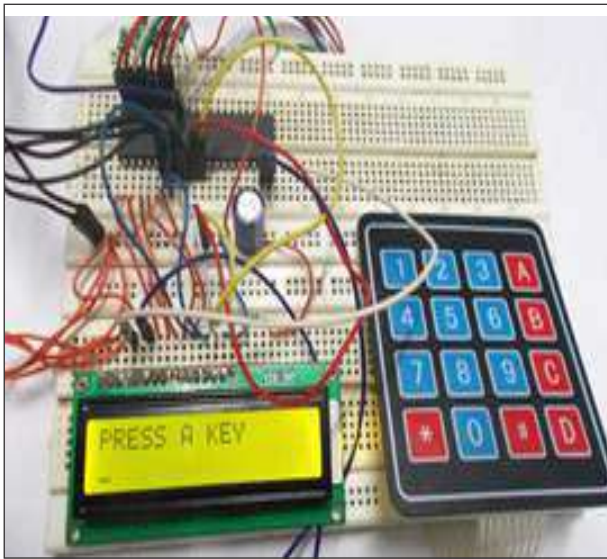
## Project Title

Keypad Testing Machine

## Project Outcome/ Impact on SME's

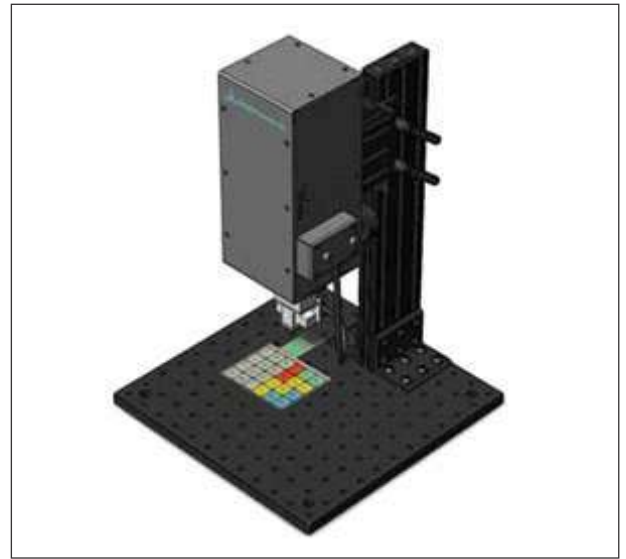
Keyboard testing in semiautomatic way will be able to save the time of testing the large number of keyboards in less time. Error in testing can be completely minimized

### Before



**FORMULATION**–Keypad manufacturing industries are checking individual single key by person and it is too much time consuming. Less number of keys will be tested in a target period. Hence provide to solution to this problem by developing auto-machine that will automatically check the working of a key and record the number of keys to be tested.

### After



we made a kit for testing keypad. This kit is working as semi-automatically the input is given by person to kit, that person describes the number of buttons to be tested on keypad. Then internally working controller work on input which is given by person and if in keypad no errors occur then display will display the 'O.K.' signal or if error occurs display show error on display and buzzer will sound



**Nilesh Joshi**  
Rangvishwa Enterprises, Nashik  
**Industry Feedback :**  
We are happy with the results.

### Project Team:

Dr. Kishor V. Bhadane

● Kapilil Salve

● Nikhil Sancheti

● Kunal Chaudhari

# Student Innovation Project

## Project Title

To implement Coolant System on conventional Lathe Machine

## Project Outcome/ Impact on SME's

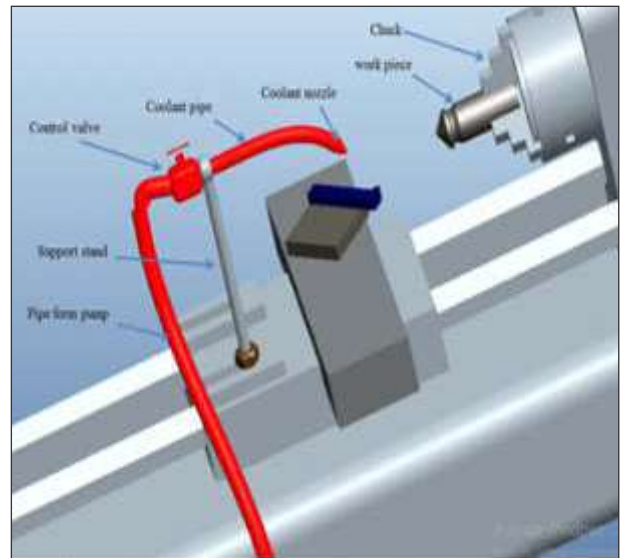
By implementing this system operator can work efficiently as his one hand is free for other machine operation.

### Before



This coolant application process is manual so majority of the coolant is spread unevenly or at undesired places resulting in wastage and it slowing down the process.

### After



Spreading the coolant on the tool tip with help of pump and nozzle arrangement and recirculating the coolant.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

We are using this system from last two weeks and we have seen much improvement in production as machine operator can focus on production and coolant is evenly spread across part.

#### Project Team:

Prof. S. J. Chede

● Rachna Ekhande

● Abhijit Bankar

● Nikhil Sawarkar

● Mayur Varade

# Student Innovation Project

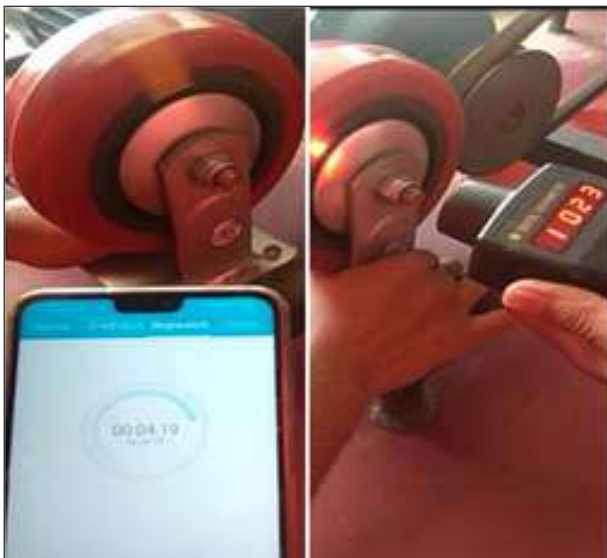
## Project Title

To provide solution to reduce the friction of trolley wheel

## Project Outcome/ Impact on SME's

The friction is reduces in the PU wheels as compared with previous manufactured PU wheels. So the efforts required will be less to displace from one place to another.

### Before



#### Description:

The rotational speed of trolley wheels we measured as 1023rpm by contactless tachometer and disintegrated the contact between them. The total time is measured until the rotation of pulley wheel stop, i.e. 4.19 sec

### After



#### Description:

After few internal modification and improvement in lubrication. The rotational speed of trolley wheels we measured as 1032rpm by contactless tachometer and disintegrated the contact between them. The total time is measured until the rotation of pulley wheel stop, i.e. 1min 34sec.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

We are totally satisfied with the improvements made by Professors and Students. Our business impact of this improvement will be informed soon based on our trials with the customers.

### Project Team:

Prof. Dr. A.S. Dube

● Singh Abhimanyu A.

● Biswas Samit S.

● Makani Tejas H.

● Prasad Nikhil

# Student Innovation Project

## Project Title

Stairs free material handling trolley

## Project Outcome/ Impact on SME's

It can reduce human efforts and increase the work efficiency as well as it increase production rate. Due to it's easy handling it does not required any expertise person.

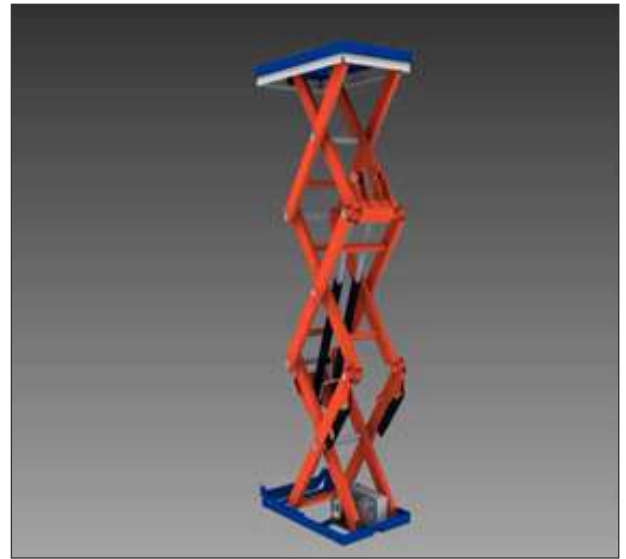
### Before



#### Description:

Goods are transported manually  
Time consuming for transportation of material  
Ground floor get disturbs

### After



#### Description:

Goods are transported with help of trolley.  
Less time consuming during transportation.  
No disturbances occurs at ground floor.



**Neha Kotawar**  
Gagan Enterprises

#### Project Team:

Prof Dr. L.N.Toke

- Vishwadip. R. Pawar
- Avinash H. Shimpi
- Nikhil S. Pawar
- Kiran P. Jadhav
- Siddhant Pawar

# Student Innovation Project

## Project Title

Static Bypass System For Multi-UPS System

## Project Outcome/ Impact on SME's

1. Interruption of supply will be continuously monitored, as a fault occurs on the main UPS system, it will immediately isolate the faulty UPS and bring another UPS in service.
2. Improve the reliability of supply to critically important loads.

### Before



#### Description:

1. Delay in switching between UPS to UPS was interrupted supply to the server.
2. Manual switching was unable to prevent delay in switching.
3. Fault in UPS was disturbing the reliability of supply to the server.

### After



#### Description:

1. Now there will be no delay in switching between UPS to UPS, thus improving the reliability of supply to the server.
  2. Automatic switching between UPS to UPS is possible without human operation.
  3. Fault in UPS can be easily detected and isolated by our newly developed system of static switching.
- Industry Feedback:



**Gajendra Chopde**  
S P Electronics

#### Industry Feedback:

Project done by student is good and satisfied the condition which required for this project.

#### Project Team:

Dr. K. V. Bhadane

● Ruturaj K. Khalkar

● Sujit P. Gangurde

● Akash Sarode

# Student Innovation Project

## Project Title

Smart Industrial Oven

## Project Outcome/ Impact on SME's

This project is directly speed up our operations and indirectly saved our energy cost.

### Before



#### Description:

In a oven as there was no such provision of timer and temperature controller due to which the temperature was rising up to the required temperature but it started dropped down to the set point. Also there was problem of over baked or under baked due to manual stop watch and special attention has to be given to system, hence there was wastage of energy and time. In previous system no system was available for data storage and back up.

### After



#### Description:

- 1.As we have provided the Temperature Controller and Timer the temperature rises step by step and brought to set point and we can be stable it at the required temperature.
- 2.As an alarm and timer is provided which will notify on reaching set point temperature so no issue of over baked or under baked and also no need to give an attention to it. Hence no wastage of energy and time.
- 3.In current system data storage and back up is possible.



#### Nilesh Joshi

Rangvishwa Enterprises, Nashik

#### Industry Feedback :

We are satisfied with the quick response of students for this project. They successfully made working system as per our requirement.

#### Project Team:

Prof. N. L. BHIRUD

● Rudra Mitkari

● Sunny Bhagwat

● Mayur Wagh

● Dhananjay Shirsat

# Student Innovation Project

## Project Title

Intelligent Toilet

## Project Outcome/ Impact on SME's

Once you have used the toilet, it will automatically flush the toilet and also auto floor cleaning. Intelligent toilets have automated flushing system, self-cleaning mechanisms which prevent co-existence of bacteria and viruses.

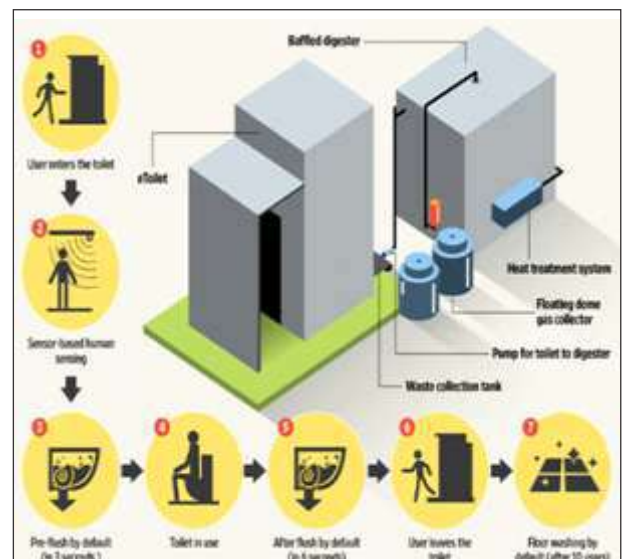
### Before



#### Description:

: Indian Industrial Toilets are not well maintained in SME. So there is big need of Autoamtion system to clean this area. This solution is developed for Railways and Public Places. They are very costly and complete new installation system. We need retrofit solution which make

### After



#### Description:

Toilet will be cleaned automatically. Labour cost of clean toilet is saved. If product pass all test we are going to commercialize this solution.



**Prashant Gatkal**  
GM Designs

#### Industry Feedback:

Student has Developed prototype of toilet cleaning system which can be retrofit in existing industrial toilets. They need to work on electronics and Authentication system.

#### Project Team:

Dr. Hari Prasad

● Aniket Bombale

● Pravin Landge

● Saurabh Badakh



# Student Innovation Project

## Project Title

Inventory and Stock Management System Software.

## Project Outcome/ Impact on SME's

- 1.Improved inventory management.
- 2.Has reduced the manual work and time constraints.

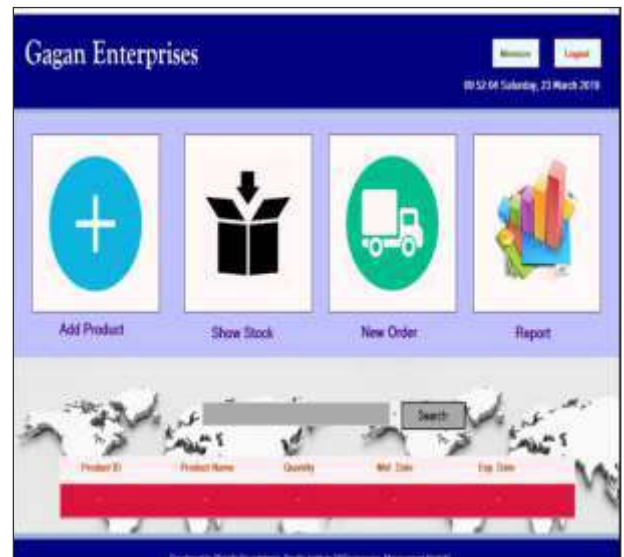
## Before



### Description:

The record of product is maintained manually using handwritten sheets. So at the time of next order of that same product the stored product in stock need to be utilized. So the calculation of that stock and new order is quite complicated and for manufacturing process. Some time that stored product get expired and gets converted into waste and hence, the industry suffers from the losses. So we need to avoid that wastage of product as well as the time.

## After



### Description:

We have developed a system which reduces the manual work. The new system overcomes the time constraint. It becomes easy to find the product details with the help of the inventory management system. It simplifies the process of placing the order, confirming it and viewing the order details. The major problem that is the instock products according to their expiry are notified to the user of the system so that he utilizes the product in stock. Thus, we have come up with a solution which solved all the constraints of the manual inventory product management of Gagan Enterprise.



**Neha Kotawar**  
Gagan Enterprises  
Industry Feedback:

The team has crated a efficient software which is completely useful for my industry. But in addition we require to that Mobile application and a web platform so I can monitor system remotely.

## Project Team:

Prof. P. M. Deasi

● Sagar Bhalerao

● Akshay Mangude

● Vishal Jadhav

● Pooja Askj

● Mrudula Kulkarni

# Student Innovation Project

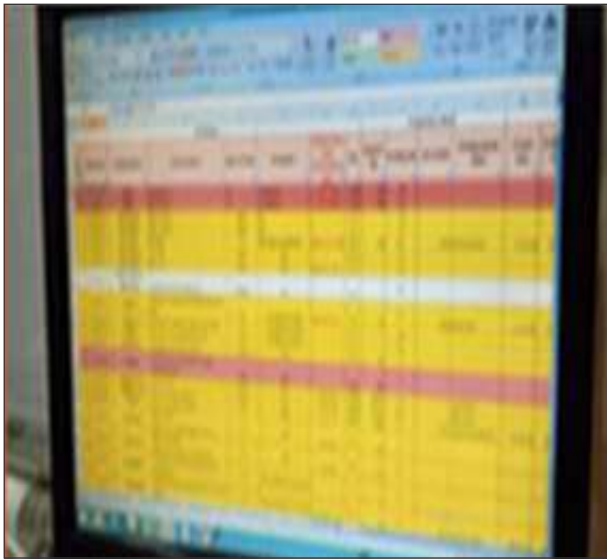
## Project Title

PO Tracker.

## Project Outcome/ Impact on SME's

- 1.Improved PO Tracking Management System.
- 2.Has reduced the manual work and time constraints.
3. Every department will update their status on their own.

## Before



Most of activity is monitored and updated manually by single operator. Every time updated file is shared with Owner. No alerts or timelines monitoring performed by departmental level.

## After



We have developed a system which reduces the manual work. Every department will update status by Tablets installed in their department. This will notify the manger and owner in real time. Most of data entry work is reduced. Now one manager is free to perform other activity.



**Nilesh Joshi**  
Rangvishwa Enterprises, Nashik  
Industry Feedback :

We are satisfied with the Software developed by the students.

## Project Team:

Prof. Anil G. Patil

● Knashil Purkar

● Sumit Borse

● Harsh Singhal

● Ankita Waghadkar

● Riya Saha





P - 14 NIMA House, MIDC Satpur, Nashik- 422007 (MH) India,  
.T +91 253 - 2353877, 2350277. Email: nimanashik@gmail.com, nimainnovation@gmail.com

[www.nimanashik.in](http://www.nimanashik.in)