NewGen IEDC [2017-22]
Under the Aegis of NSTEDB, DST, Govt. of India, New Delhi

Progress Report (As on October 31, 2018)

Name of the College/Institution hosting NewGen IEDC	Ramachandra College of Engineering		
Year of starting NewGen IEDC	2017		
Name of the Head/Principal of the Institution/College	Dr. Dola. Sanjay. S		
Name of NewGen IEDC Coordinator	Dr. K. Kalyan Chakravarthy		
Contact Details of NewGen IEDC Coordinator • Mobile Number • e-Mail ID	Professor MBA Department Ramachandra College of Engineering, Eluru Mobile No. 9491124153 EmailId:varthychakri@gmail.com		
Financial Details	Sanction Order No./Date		Amount Sanctioned
Previous Sanction Order Details	1.	EDII/DST- New Gen IEDC/17-18/02	Total Budget:Rs: 60,00,000
	2.		

Initiatives/Activities Undertaken as per the Action Plan Submitted:

[A] To inculcate the spirit of innovation and entrepreneurship amongst S&T students

Sr. No.	Activities	Outcome/Achievements
1.	Entrepreneurship Development	• Create Awareness on Entrepreneurship Development. • Information given about government schemes available from MSME, KVIC. • Successful entrepreneur shared their experiences with the students. • Asked students to identify the local problems & work on it.
2.	Women Entrepreneurship Development	• Importance of women as an Entrepreneur. • Schemes of assistance& support available from government available to women entrepreneurs. • Successful women entrepreneurs share their experiences with the students.
3.	Entrepreneurship & Intellectual Property Rights	• Created a bench mark standard through intensive training and skills enrichment on Entrepreneurship development. • Inculcate IPR culture in campus. • Suggested to go online courses on IPR, thru WIPO

[B] To identify, develop & commercialize students' innovative ideas

Sr. No.	Activities	Outcome/Achievements
1.	Smart India Hackathon -2018 Hardware Edition Finalist for Technology for Rural Development Theme	• 3 projects, were submitted, 1 project (Jag-Repellent by Kotipalli Lakshmi Kala) were short listed for final round.
2.	Student Start-up NIDHI Programme	• 8 projects were submitted, 1 short listed for final round and presented at EDII, Ahemedabad
3.	Amaravathi Mini Maker Fair- 2018	• 4 projects displayed in Amaravathi maker fair. • 2 projects (Sonic Pump & Portable Refrigeration) were shown interest and asked them to manufacture according their requirement. • Students experienced a lot when public are raising doubts towards their product.
4.	Empresario Start-up Summit- 2018	• Students got rich experience on start-ups. • Students were motivated by Hon. Minister of Commerce & Industry Shri Suresh Prabhu's speech. • Experiences shared by Mr. Kris Gopalakrishnan, chairman Axilor Ventures, Co-Founder: Infosys Ltd., Chairman: Advisory Committee, CrAdLE • A platform to have interaction with industry mentors, student community, entrepreneurial endeavors and experiences, gain amazing new insights for start-ups. • Visited all the stalls know how the problems & challenges faced by them.

[C] To enhance Industry-Academia interaction

Sr. No.	Activities	Outcome/Achievements
1.	Programming on MAT LAB	• Basic knowledge learn on MAT Lab. • Learning on Arrays, datatypes, Header Files, fundamental about structures. • Program implementation, writinga code & using it on Micro-controllers using MAT lab
2.	PCB designing	• Knowledge related to c PCB, Editing & routing, develop the layout, creation of library and components & report generation. • Toner transfer method, drilling technique.
3.	Micro Strip Antenna using High Frequency Structures Simulator	• Knowledge on HFSS for designing antennas. • How to frame & design micro strip antenna
4.	Robotics	• Learning skills in Automation & Robotics. • Practical approach learning by students on drones & Robotics.
5.	Kusalva International Limited	• They know how to manufacture break liners • They understand how to design layout for product based system • They understand how to pack the break liners

6.	COCA-COLA, Mangaliri Guntur.	• They learn automation process in the bottling company • Students able to understand how the overcome automation problem in a processing layout.

2. Deviation (shortfall) from the proposed action plan (with reasons), if any:

- No Deviation as per the given schedule.

3. Other important highlights (new initiatives), if any:

- Hosted Institute Innovation Council in the campus.
- Students were initiated to do online courses on Intellectual Property Rights & NPTEL.
- Hosted Intellectual Property Rights Cell.

4. Student Projects (Please provide the following details for each student project)

Sr. No	Team/Project Description	Project status at beginning of the Year	Interventions made	Current status
1.	**Team:** • K.Jeevan Sagar • T.Eswar Ramki • S.Sai Dhanush • M.Maniratnam **Mentor:** • Mr.M.EKAMBARAM Assistant Professor RCEE **Project:** Design and development of Aligners using 3D printing technology.	• **Two patients has been treated so far and initiated to approach dental colleges in Vijayawada.** • **College has MOU with CTARS, Chennai** • **In a process of setting up Centre of Excellence in Manufacturing of Aligners.**	• **One of the patients is still continuing the treatment using the 3D printed Aligners without facing any discomfort and any health hazards.** • **Students Publicize the product in college display boards.** • **Making awareness about the product in class rooms and social medias**	• **Prototype of the Product is completed.** • **One of the students is undergoing treatment.** • **Taking steps to market the product.**
				

2	**Team:** • T.Subbarao • K.Pannagesh • K.Sivasankar • D.Likhitha **Mentor:** • Mr.**K.Radhakrishna** Assistant Professor RCEE **Project**: Low cost head gear and nose mask for working personal	• **Establish MoU with impact Engineering solutions start up will be set up shortly , next version of masks will be developed in the college** • **During trial with Sandhya Aqua export cold storage workers, team received positive feedback and instructed to make small changes.**	• **Student visited Sandya Aqua export, Pamarru village on 06/02/2018 and identified the problem that the workers who are working in cold storage at low temperature (i.e. -20^{0}c) without having any suitable mask.** • **Student visited Blue park sea foods Pvt. Ltd, Pamarru village on 07/06/2018 and identified the health hazards which is caused due to working in the low temperature environment like breathing disorders, nasal respiratory problems etc** • **Student visited Jute mill in Eluru on 20/03/2018 identified the health hazards like problems in lungs due to the dust present in atmospheric air on the work surroundings**	• **Prototype of the product is completed** • **Taking steps to market the product.**
				

3	**Team:** • Mohammad Salma Bajid • Pakalpati Maneesha • Maddula Neelima • Dasari Shanmuk **Mentor:** RLR. Lokesh Babu Assistant Professor **Project**: Passive Infrared Sensor based energy saving device.	**Product Development:** ▪ **Two prototypes versions are developed by reducing the detection time without having time delay.** ▪ **The following are the product specifications** **Product dimensions:** ▪ **Length: 850mm** ▪ **Width: 40mm** ▪ **Height: 250mm** **About sensor:** ▪ **Voltage: 5V – 20V** **Power Consumption:65mA**	• **Planning to add Light Dependent Resistor (LDR) for better improvement for power saving.** • **Improved prototype made to respond to the detection of sensor with less in time.**	• **Installed in college campus** • **for awareness and testing purpose.** • **Suggestions/ feedbacks taken from students, staff and started working on that aspect.** • **To make prototype with minimal space consumption .**
				
4	**Team:** V.Tarun Teja M.SaiKrishna V.Bala Manohar Sai D..Murali **Mentor:** Bhavanarayana. K **Project:** Farmer Friendly Sonic Pump	**Review of the Sample idea with Research solution** **This sonic pump Runs on DC supply so no need of AC power source** **It has a self-power unit to carry any here to work** **Major advantage of this pump is it can operate in remote areas where no power is available.** **It is also useful for agriculture nursery maintenance** **On one complete charge it will run up to 100 min and**	**1. Analyzed the actual Pump and its consumption.** **2. Find out the drawback in existed pumps** **3. Designed a theoretical analysis** **4. Integrating the components to execute optimize output** **5. Testing**	**Product with Proto Type**

		above **It sucks water from up to 11 feet's and deliver up to 15 feet height** **It is a multipurpose pump, it can use in municipality works especially repair of leakage water pipe lines** **Review of the Sample idea with Research solution**		
				
5	**Team:** Y.Prudhvi V.Tarun Teja N.Madhu V.Lakshman **Mentor:** Bhavanarayana.K **Project Description:** Advanced Portable Refrigeration Machine	• **This machine helps to chill the huge amount of liquids with in less time** • **To chill the water or any other drinking liquids now we are using ice blocks, But in most of the case using of ice blocks in not hygiene so this machine gives good result than that process** • **Equipment cost is very less than compared to existing machines used for huge cooling capacities** • **It is portable to carry anywhere to use** • **Higher chilling rate** **Review of the Sample idea with Research solution**	**1. Analyzed the actual system and its Working.** **2. Find out the drawback in existed Machine** **3. Designed a theoretical analysis** **4. Integrating the components to execute optimize output** **5. Testing and result**	**Product with Proto Type**

				
6	**Team:** B.V.Subrahmanyam Md.GulshanAli P.DurgaPrasad B.Sai Kiran **Mentor:** **Sai Surendra** **Project Description:** Carbon Filters For Water Bottles	**Review of the Sample idea with Research solution**	**Identified some problems in the design of the bottle and changed as per the feedback taken from the students, staff & experts from the industrialists.**	**Product with Proto Type**
				
7	**Team Members:** 1- M.Nikhil 2- D.Satish kumar 3- S.Vernika Nageswari 4- A.Mounika Rajyalakshmi Mentor: CH.S K.B Pradeep Kumar **Project Description:**	**1. Designed ergonomically as an innovative gadget for ease of handling.** **2. Engineered for dry and wet cleaning, attached with a water container for spraying.** **3. Incorporation of small and powerful motor, batteries for automation which considerably reduce the overall size and weight of the machine.** **4. Designed with maximum performance for optimized mopping and cleaning, the**	**1. Analyze the different floor mopping machines available in the market.** **2. Incorporation of small and powerful motor, batteries for automation which considerably reduce the overall size and weight of the machine.** **3. In the beginning stage we can use steel material for**	**1. Developed prototype, product development is completed.** **2. The product is testing for different speeds, different mops with different mop sizes. Also working on water spraying system.**

	Electric Floor Mopping Machine The objective of the proposed project is to design and development of electric floor mopping machine which could be easy to transport and maneuver. The proposed mopping machine comprises of simple motors and water spraying system. This mopping equipment can be used for household applications as well as in industries, malls etc., where the cleaning area is large.	**corners which are hard to reach.** **Utilization of locally available material.**	**telescopic handle and tripod frame.** **4. The overall weight of the product is increased. So we can use plastic tripod and telescopic handle to reduce the weight of the product.**	
	 Develped Product			
8	**Team:** • J Pavan Kumar • K L N Vally Priya • N S Pavan Kumar • V Sri Rama Devi **MENTOR:** P.CHAKRADHAR Professor **Project:** Development of E-Commerce Platform for Aquaculture	**Process development:** **Web portal have been developed() using word press interface and provided information pertaining to precise aqua farming, feed, seed, medicine, Equipment and other useful information.** **Product URL:** **missionaqua.com**	• **In the processes developing web portal students contact many distributors of seed, feed, equipment, and medicine for precise information and rates.** • **Making awareness about the portal, students met Fisheries and Aquaculture Department officials, Aqua**	• **Web portal have been launched.** • **Taking steps to market the product to aqua farmers, feed suppliers, and prospect customers.** • **We are taking one more step for online payment.** **Taking steps to company registration**

			farmers, Aqua product manufacturers and suppliers. • **Students promote the Product by publicize in social media.** • **Due to the current work aqua farmers will get tremendous benefits and enable farmers for finding solutions pertaining to aquaculture products.** **Aqua farmers got harvesting techniques and mentor assistance in 24*7.**	
				
9	**Team:** N. Siva Chandana A. Rushi P. Salomi J. Hari Krishna Mentor: Dr. Daveedu Raju	**1. Requirement gathering, Such as information of various sensors available in the market** **2. Case study of the available DO sensors that are used by formmers, noticed that are not affordable by small scale formers.** **3. Consulted various experts of IoT, Java, Python**	**1. Done survey at aqua formers and ponds visit** **2. Hade interactions with field workers at ponds** **3. Studied the instruments that the formers are using for finding the dissolved**	**1. Developed a prototype.** **2. The product is testing for different water samples, at aquariums..**

	Project Description: Smart Phone App for Checking Dissolved Oxygen in Fish Pond Development of Android application for real time monitoring of dissolved oxygen levels in fish ponds. The fish will sustain its life if and only if it acquires the required oxygen in the water. The levels of this oxygen should be monitored constantly to avoid the reduction of oxygen levels in the water. This oxygen levels are increased by rotating the aerators on top of the water surface. Without human intervention the DO levels are informed to formers by message to their mobile.		**oxygen.** **4. Various electronic instruments are studied that related to IoT.** **5. IoT devises that related to Dissolved Oxygen are investigated.**	
				
10.	**STUDENT TEAM:** • Md. Hussain • I.V.Prudhvi Raju • R.Pavan • M.Mounika **MENTOR:** Mr.S.SUDHAKAR BABU Assistant Professor RCEE	• **West Godavari has about 5.18 lakh hectares of agricultural land, about 5, 81,312 farmers are involved in agriculture.** • **Weed control is one of the most tedious tasks in**	• **Removal of weeds through rotary motion of unique blade assembly.** • **This machine involves simple mechanism and**	• **Prototype of the product is completed.** • **Taking steps to marketing the product.**

	Project Description: Development Of An Affordable And Portable Weeding Machine For Effective Weed Removal The objective of the proposed project is to design and development of Portable weeding machine for effectiveweed removal . which could be easy to transport and maneuver. The weed control is one of tedious task in agriculture Concern about herbicides polluting ground and surface water, human health risks from herbicide exposure. development of herbicide resistance and the lack of approved and effective herbicides for minor crops such as vegetables, are the major factors driving the present and increasing interest in non-chemical weed control	**agriculture, which accounts for a considerable share of the cost involved in agricultural production.** • **Manual weeding usually requires 300 to 500 man hours/hectare which is about 25% of total labour requirement.**	**operation requires less manual effort compared to conventional weed removal technique.** • **Light weight and Low cost compared to present available weeding system (which is of Rs 65,000/-).**	
				

- **Please Submit three/four high resolution (at least 300 dpi) pics in jpeg format showing the prototype/product along with the students and their mentor.**

5. Provide a minimum two page case-let each on the two best student projects (either prototype developed or commercialized) from the above list. The case-let should include:

Project – I

ELECTRIC FLOOR MOPPING MACHINE

PROJECT CASE

Name of institute: New Gen IEDC, Ramachandra College of engineering

Name of Mentor: CH.S K.B Pradeep Kumar

Sl. No	Name	Branch	Phone No.
1	M.Nikhil	Mechanical	8897394409
2	D. Satish Kumar	Mechanical	9666004826
3	S. Vernika Nageswari	Electrical&ElectronicEngineering	9491475272
4	A. Mounika Rajyalakshmi	MBA	9849396404

Project Title: Electric Floor Mopping Machine

Brief description about Student Start-Up

- These devices need an electrical energy for its operation and not eco friendly.
- The electric floor mopping machine consumes low power as compared to heavy cleaning machinery available in the market.
- It can be used for both wet and dry floors simultaneously. But the available machines in the market are used for either dry or wet floors.
- The overall weight of the device is low because use of plastic material.
- Heavy machinery doesn't compact for effective cleaning the corners, to overcome this problem a suitable design is attached in the electric floor mopping machine for effective cleaning of corners.
- In households and small scale companies floor cleaning is done by manual process. Where as electrical mopping machines are affordable for effective cleaning of floors.
- In manual floor cleaning process people should face back straining problems. To overcome this effect use of adjustable telescopic handle.
- Easy to operate and handle.
- Use of local available material leads to reduce the cost of the product.
- This device is used mainly in both domestic & commercial purpose like household, railway stations, shopping malls, small scale companies etc.

- **Start-ups entrepreneurial journey from ideation to prototype or commercialization**

  Electric floor cleaning machines are based upon conversion electrical to mechanical.

  Exiting floor cleaning machines are consumes high power. In electric floor mopping machine use of small motor this leads to decrease the power consumption. So electric floor mopping machines consumes low energy and it is a eco friendly device.

  The weight of available floor cleaning machines is more as compared to electric floor mopping machine. Easy to operate and handle due to less weight. Both dry and wet floors can be cleaned simultaneously. It is used for effective cleaning of corners.

  It is useful for reduce the manual effort while cleaning the floor, as compared to manual floor cleaning process.

Contribution of New Gen IEDC in the same

- We got the knowledge and confidence towards becoming active partners in the economic development process
- It helps to catalyze and promote development of our knowledge and innovation to develop as entrepreneur and it help to promote employment
- It helps to inculcate a culture of innovation driven entrepreneurship among the students
- Our project executed by fund provided by the New Gen IEDC.

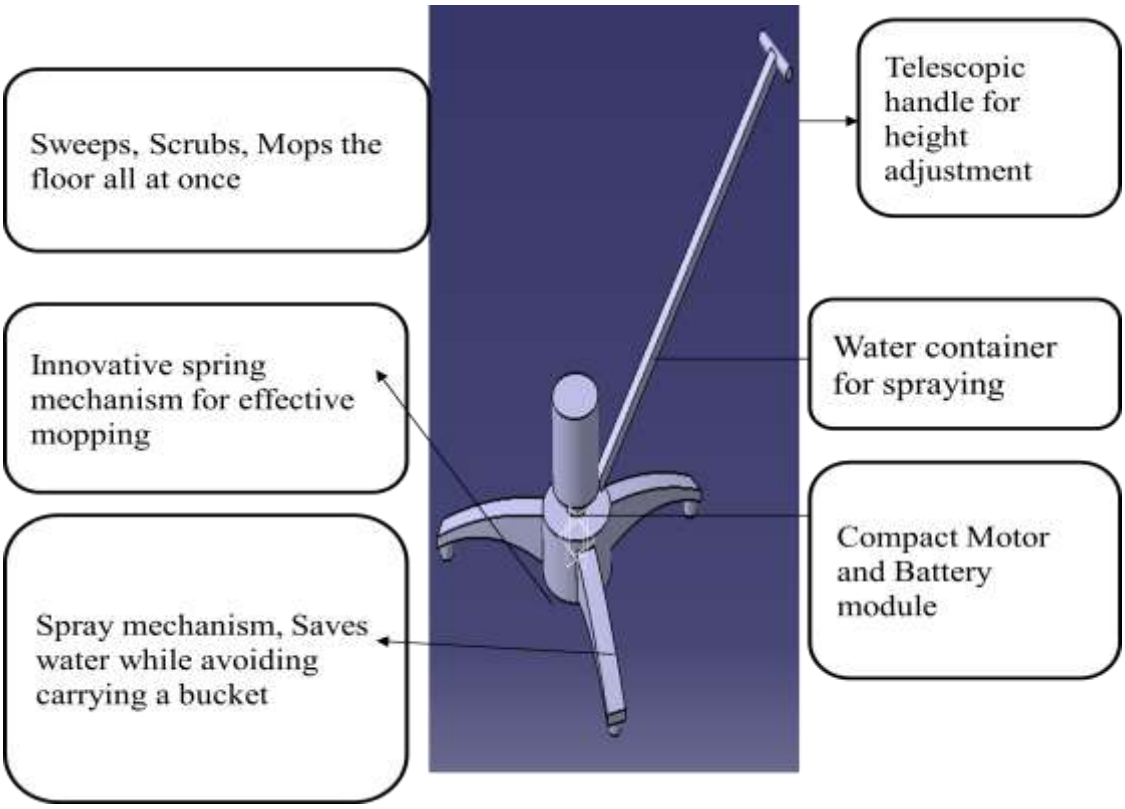
What in your opinion could be done further to make the project more effective? Future Plan

In further development we are aimed to design all the components more compactable to reduce some more size,

Stages of planning are:

- Evaluation
- Patent
- Feed back/ necessary modifications
- Start-up
- Design and manufacture the required components more compactable than now by consult manufacturing industries
- Make publicity and awareness on this product to stake holders

- Establish the company and its requirement by having funds



Design model components and its function

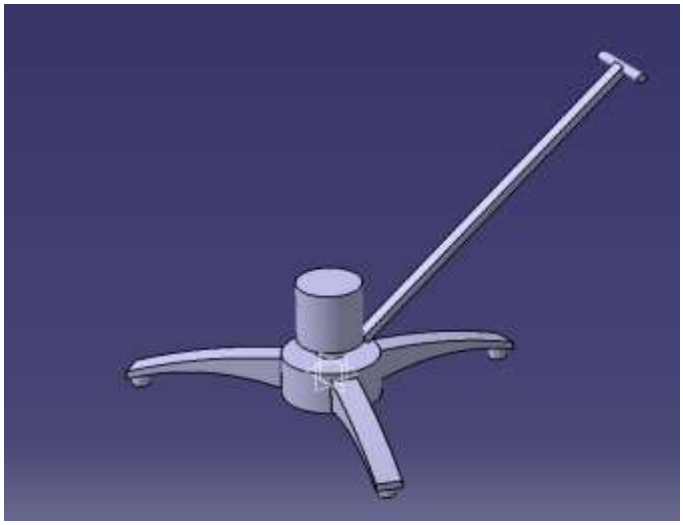


Fig: Side View Of The Prototype

Fig: Top View Of The Prototype

Electric floor mopping machine Photograph with Brochure for marketing

Project – II

PIR SENSOR BASED ENERGY SAVING DEVICE CASE-LET

Name of the Institution*:* NewGen IEDC-Ramachandra College of Engineering

Name of the mentor: Mr R LR Lokesh Babu

Name of the students:

Sl No	Name	Branch	Phone no
1	MOHAMMAD SALMA BAJID	ECE	9705779529
2	PAKALPATI MANEESHA	ECE	8096648320
3	DASARI SHANMUK	ME	7287952987
4	MADDULA NEELIMA	MBA	9492663939

1. **Project Title:**

   PIR Sensor Based energy saving System.

2. **Brief description of the student start up**:

   Development of an automatic switching system for Electrical Devices by using PIR motion sensor for saving energy.

   About 800 storage units and farms (~5,000 sq.ft and above) are in use in various sectors (food grain storage / aqua farms etc.) of Eluru and typically they do not use any automated devices for energy control.

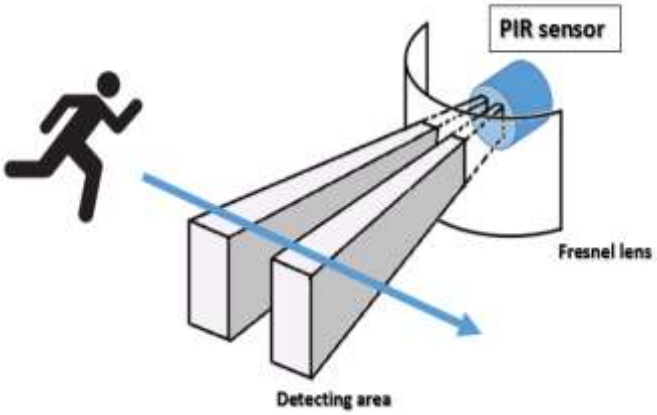
   PIR sensor is a passive infrared sensor that detects human presence through IR (Infrared Radiation) and these phenomena can be used for actuation electrical devices. Few units are tested in the storage yards and installed in the college campus etc. Their integration demonstrated savings in lighting bills (-12%) compared to the typical consumption.

   Planning to start a start-up by the name "**POWER SENSE"** and planning to organize a camp at domestic and commercial areas under this name to create awareness to the people about power savage and reduce the power consumption charges.

   Planning to Distribute the PIR Sensor kits to the farms mangers to test for low cost and taking feedback/ Suggestions about product.

   Then our marketing partner will meet the user for better services.

3. **Our Journey towards Startup:**



Knowing the concept and idea behind the product development

Working together for basic model prototype PassiveInfrared starting level initial model.

Ready to test and market PassiveInfrared Sensor Based Energy Saving Device

Explaining the Product to the users in a camp as start-up "POWER SENSE"

Future plan:

- Planning to organise a awareness camp at forms, marketing places and domestic areas where the power reduction is need and to bring people to know about this product
- Make it model simple than now and readily available in the market in affordable price.
- Planning to register a company under a name **"POWER SENSE"**.

6. Minutes of the Advisory Board Meetings (held so far):

1. Advisory meeting held on 09/12/2017.

- Inauguration of New Gen IEDC on 09/12/2017.
- Action Plan of implementing New gen IEDC for next five years.
- Interaction with student projects and giving suggestions to their ideas.

7. Progress Summary:

1.	**Total number of Student Projects supported**	10
2.	**Total fund provided towardssupporting Student Projects**	14,22,401
3.	**No. of Patents filed by students**	**--**
4.	**No. of Patents Granted**	**--**
5.	**No. of companies/Starts up Set up by Students**	**--**
6.	**Social Impact Made, If any**	

CO-ORDINATOR
New Gen IEDC

PRINCIPAL