



# POSITRON 2018

## The +ve Charge



**DEPARTMENT  
OF  
ELECTRONICS & COMMUNICATION ENGINEERING**  
Accredited by NBA

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**  
(UGC - Autonomous)

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### ***HIGHLIGHTS OF THE CURRENT EDITION:***

- Perspectives from the Department
- Faculty publications
- Chief Editor's Page Article by Dean
- University Innovation Fellows
- Student articles
- Placement updates

## MESSAGE:



**Dr. N. Vijaya Bhaskar Choudary, M.Com, Ph.D.**  
Secretary & Correspondent

Technology places a vital role in shaping a student's career. ECE Department provides excellent opportunities for the students to discover their potentials. If students are able to go out of college with flying colors, it's no exaggeration to say that it's only because of the supportive environment that is provided in the college. POSITRON provides a glimpse of the activities and achievements in ECE Department. Students must make use of the opportunities provided to them in order to excel in their career. They must aim high. Students should consider technology as a treasure box and make proper use of it to achieve their goals. It gives me an immense pleasure looking at the efforts put by the ECE department, in coming up with creative ideas to design a newsletter every year.

## MESSAGE:



**Sri. N. Krishna Kumar, M.S (U.S.A)**  
Chairman

The Electronics & Communication Engineering Department has produced many phenomenal students who are at very good positions. Students graduated from our college, come back here and support the institution to the best of their abilities. I advise the students to have a clear vision about what they want to become and plan accordingly at the earliest possible stage. They must gain practical knowledge rather than mere bookish knowledge to reach greater heights in their career. They must convert their ideas into reality and must not refrain from trying out new things. I hope the Department continues to achieve success in every aspect and publish the achievements in this incredible magazine every year.

## MESSAGE:



**Dr. C. Yuvaraj, Ph.D.**  
Principal

The technological information dissemination to public is the key factor in bringing concerned people/Department together. The Department of Electronics and Communication Engineering contributing best of its efforts in development of technical temper by publishing newsletter “POSITRON”. The documentation of different activities and bringing it to relevant technical community is the excellent towards service of society. These activities will help in making the science and technology much stronger towards knowledge bank. I am congratulating all the ECE department staff and students on this occasion.

## MESSAGE:



**Dr. K. R. Kashwan, Ph.D.**

Sr. Professor & Dean,

Department of Electronics and Communication Engineering

It is indeed a great honor for me to congratulate the faculty, students and staff of the department of ECE for compiling newsletter, POSITRON 2K18 edition. This creates an opportunity for all of us to work in a team that adds value for any of the academic processes. The newsletter provides us with an opportunity to demonstrate our competency and creativeness. I am sure there must have happened a lot of learning experience during the process of compilation of newsletter.

The success ladder for our students are conquered with the training and guidance from faculty of ECE who are very important not only from the examinations and placements points of views but also in entirety of successful citizenship throughout students' life. The mentorship goes much beyond classroom boundaries and program tenures. I am sure the teachers must have done justification of their purpose being for the students. I wish every teacher an inner strength to serve the very noble cause of mentoring students for the best. The teachers are lifelong students and thus can understand the significance of updating their knowledge by way of research, publications and patents.

It is imperative on the part of each teacher to involve in active research for value addition. Our students are doing well in the placements and competition examinations. Students have won many awards and appreciations. We wish all the best for more and more laurels in the years to come.

We value our students' capability and interest in activities other than classrooms. The students are the most important visitors to our campus. Our faculty must make teaching very interesting so that students enjoy learning with passion. Only our sincere and consistent efforts will make teaching a very interesting phenomenon. This can only happen if teachers are innovative and creative in classrooms. The biggest challenge of teachers is that how to cope up with fast changing and emerging technologies. A good teacher is a good researcher and a good researcher is a good teacher. The research activities will help us in learning newer trends and creativeness which will also help us transferring the knowledge in classrooms with effectiveness. We have added few classrooms and lab equipment during the year and there are further plans for upgrading laboratory equipment, software and other infrastructural facilities. The management is all out to support the good cause of institutional growth.

I congratulate and appreciate all the efforts to bring out the newsletter for the ECE department. I express my thankfulness to all coordinators and conveners of the program. I, on the behalf of the entire team ECE, express sincere and heartfelt thanks to principal and management of MITS for giving an opportunity. I wish a very successful symposium for the students and faculty where a lot of learning experience should be taking place. All the best.

## PERSPECTIVES FROM THE DEPARTMENT:

Every year of Positron edition brings you brief transcripts of the talk with the entire faculty team of ECE department. The following questionnaire presents a few of the highlights of salient features of day to happening in the department. It also includes our vision for the future planning and expected course of journey we intend to take up.

### **Q. What are the department targets for the year 2018-19?**

Department targets the following:

Improving teaching learning processes and curriculum under outcome-based education system.

Bringing out high quality research publications, patents and technology transfer for product development.

Establishing Center of Excellence in R&D in the frontier areas of research and development such as IOT, embedded systems, wireless communication and intelligent technologies.

Achieving high placement record of at least 90% of enrolled students

Improving R&D consultancy work and funded projects and revenue generation by way of continuing education programs.

### **Q. What are main objectives of setting up of center of excellence in R&D and how is this going to be helpful?**

Setting up of center of excellence in R&D in the current technological trends as mentioned above will provide opportunities to students and faculty to undertake research in these areas. The center will be equipped with latest equipment and software. The department faculty will be able to publish quality papers and industry standard technology transfer for commercialization. It serves individual faculty's and institutional benefits simultaneously. Students can do their projects in the center.

### **Q. What are the areas of research that the department is currently focusing on?**

Presently the department is focused in active research in the field of IOT, big data, wireless communications, microstrip and patch antenna, embedded systems, smart sensor technology, image processing, cognitive radio, VLSI design and cryptography.

### **Q. What were the major outcomes of the workshop on Smart Antenna Design and Analysis of MIMO wireless systems conducted in September 2016?**

Major outcomes of the workshop are as follows:

Participants got benefited by gaining know-how on design of MIMO antennas and real time applications of MIMO systems.

The program disseminated well documented knowledge on the smart antennas design for MIMO environment and other applications.

It created an opportunity for networking and mutual interaction among faculty and student participants

### **Q. Were there any changes made in the teaching learning process to benefit the students?**



Students are encouraged to take MOOCS online course in each semester. This is helpful for students to learn via online platform. It is also an opportunity for learning by novel method compared to the conventional class room teaching.

The students are encouraged to undertake multi-disciplinary projects in latest fields of technology within the campus.

Students are encouraged to take summer internships for practical exposure.

A full semester industry internship projects are optionally available for the students of IV Year II Semester, if they desire or they get opportunity

The internship is essential for students to learn what is happening in industries.

The students also design real time application solutions for engineering solutions.

**Q. What is going on in the present electronics industry and how is MITS preparing its students for that?**

Electronics industry is all set to rapid changes and newer technology is invented frequently. Coping with this fast change is really big challenge for students. MITS is, however, well prepared to handle the fast-changing technology. Our faculty undertakes various courses and training on new trends in the industry. Our focus is on IOT, embedded system, VLSI design and communication systems. This helps students for better placement opportunities. Apart from that, placement training sessions are conducted for students to improve their aptitude and reasoning skills. All faculty member of ECE provide technical training to students to improve fundamental and core subject knowledge.

**Q. Where is the department heading for and what are its current strengths?**

The ECE department has well experienced faculty with 14 of them having doctorate degrees in various specialization and another 13 faculty members are pursuing PhD. Faculty members have currently funded research projects of worth Rs. 34.90 lakhs from funding agencies such as DST and UGC etc. The department has taken up interdisciplinary research in collaboration with other department for meaningful and real time projects. The department has well-equipped laboratories and software facilities available for the students and faculty for research and teaching learning process.

**Q. What innovative and creative work can be expected from the department in the current academic year?**

Actually, a lot can be expected from the department in the current academic year as faculty are actively involved in research and development. There is a plan to start in-house practice school training for students. This training will improve student's practical knowledge in real time application system design capability. Also, the faculty are encouraged to teach using multi-media techniques. Also in-house mentoring and guidance is provided to the students by the department faculty for improving placement efforts.

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## FACULTY PUBLICATIONS:

1. K. Mohan, P. Chandrasekhar, S. A. K. Jilani, "Object Face Liveness Detection with Combined HOG local Phase Quantization using Fuzzy based SVM Classifier", *Indian Journal of Science and Technology*, Vol: 10, Issue: 3, Jan 2017.
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# CHIEF EDITOR'S PAGE:

## CONGRATULATIONS OF BECOMING AN ECE ENGINEER. WHAT NEXT?

Parents of our students expect a better life after their children graduate with a B.Tech. degree in ECE at MITS.

After graduation, students usually choose either (i) to work in public/private service sector, (ii) to set up a startup company AND/OR (iii) to pursue higher studies.

MITS students have been getting good placements every year [This year 180 students of ECE department got placed in leading companies]. Further, students interested in higher studies have been going abroad for fulfilling their dreams. Recently, MITS has signed a Memorandum of Understanding (MOU) with Ming Chi University of Technology, New Taipei City, a leading University in Taiwan. This initiative will enable MITS students to pursue higher studies in Taiwan with Scholarships.

"Business incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by helping them to survive and grow through the difficult and vulnerable early stages of development."



For students interested to become an entrepreneur, MITS is striving to provide a pathway which is in line with our PM's "make in India", Skill Development and Startups programme. We all must feel proud to know that MITS has been short listed by NITI AAYOG (the new avatar of previous Planning Commission of Central Govt) to establish an ATAL INCUBATION CENTRE (AIC) at MITS Madanapalle. If selected, MITS would get a grant of nearly 9 Crores. Two faculties from ECE Department are actively involved in this endeavour to foster the mission. Also, MITS has approached the DST with a proposal to set up TBI (Technology Business Incubation) centre with an estimated cost of Rs.17.5 Crores. If MITS gets the funding from either AIC or TBI, we will open a Business Incubation Centre I MITS. Such a facility will certainly provide valuable training to our students for becoming successful entrepreneur.

We are constantly putting efforts to make each student to excel in their interesting field.

With best wishes to all,

**Dr. Remashan Kariyadan,**  
**Sr. Professor**  
**Department of Electronics and Communication Engineering**



## ARTICLE:

### **COMMUNICATION IN ENGLISH IS EXTREMELY IMPORTANT FOR PLACEMENT**

We are faced with challenge to speak and communicate in English as effective as possible. All of us have English an acquired language which poses a steep challenge of speaking effective English in a day to day life at industry and educational institutions. The inherent requirement arises from the facts that engineering educational contents and literature are available only in English. This is also a mandatory requirement for delivery of contents in classrooms, knowledge transfer and placement efforts. We also know that all examinations and interviews for placement are conducted only in English.

The industry speaks only in English. This leads to a twofold challenge for a teacher. First understanding contents of standard text books authored by world class experts and second to transfer the contents from these books to the students' community in an effective manner. The second part is an essential requirement if teachers want to be successful at all. The knowledge transfer is the sole objective of any given classroom environment. A quality educational institution is always concerned about how much knowledge transfer takes place in a given classroom combination of teacher-students at any time. The medium of instructions for transferring knowledge is only and only in English. Done well everything else but for the want of English, knowledge transfer will adversely be affected. This also leads to impacting placement adversely. One can assume how critical is the English for a teacher in classroom.

For the students, there are two essential needs of English as well. The first is indeed the same as of teachers' requirement of learning from text books and to comprehend the same in the class during a teacher's lecture. The second one is related to how to express what has been learnt. This is the most critical as it makes to job market or ruins the hopes of students' getting job in dream companies. Many companies have expressed, during feedback sessions, that student aren't able to communicate effectively, though they may have reasonably good subject knowledge. The English communication has again, in the case of students, done in for the good and for the bad.

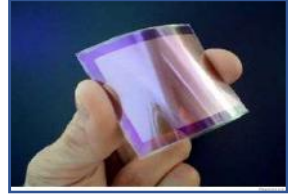
The teachers and students must realize that English speaking is something indispensable. Now, therefore, comes a question of how to improve English speaking. It's all about long patience and perseverance with focused attention all the times that one should start speaking right now and continue for the rest of the life. The biggest hurdle of speaking English comes from peer-pressure. One has to handle this effectively. Normally, the most of the students stop speaking English with their classmates, except when it is formally required, such as during interviews, viva and may be to answer a question in classroom. This is not sufficient.

If one wants to master English communication then, there is only one way of speaking all the times with everyone else who understand and follow English. The best way to counter the peer comments is to ignore the same. If one reacts to it, then there is a hurdle. And, if one ignores it, then there is hurdle on the other side, making comment. This is because, they feel that there is no reaction from target and hence they are probably wasting their time. This will work in to help one. By now, one has crossed hurdle for oneself and created a hurdle for commenters. This is sure way to improve English. Not only this, a few other students will also follow the same path. This will have a cumulative effect and improve exponentially.

To sum up the theme of how to improve English communication, one must start speaking it. There is a good opportunity for the students during their college years where all of them can reasonably follow English. The students, staff and faculty must take a pledge of MITS, that we will speak only and only in English during college hours no matter how wrong or right our English is. Let us not be conscious about that. The more we speak, the more we learn it and the more we improve upon mistakes.

**Dr. K. R. Kashwan**  
**Sr. Professor & Dean**  
**Department of Electronics and Communication Engineering**

## Nanotechnology's: Today & Future



After more than 20 years of basic nanoscience research and more than fifteen years of focused R&D under the NNI, applications of nanotechnology are delivering in both expected and unexpected ways on nanotechnology's promise to benefit society. Nanotechnology is a progressive branch of science and engineering dealing with dimensions of nanoscale in different fields of research i.e. semiconductor material science, organic chemistry, surface science etc

"Everything, when miniaturized to the sub-100-nanometer scale, has new properties, regardless of what it is". This is what makes nanoparticles the materials of the future. They have strange chemical and physical properties compared to their larger-particle kin. The thing that matters about nanoparticles is their scale. Advances in nanotechnology offer an unprecedented ability to study and manipulate molecular interactions at a sub-cellular level leading to the development of new strategies to image but also treat human disease including cancer.

Nanotechnology has greatly contributed to major advances in computing and electronics, leading to faster, smaller, and more portable systems that can manage and store larger and larger amounts of information. These continuously evolving applications include:

- Transistors, the basic switches that enable all modern computing, have gotten smaller and smaller through nanotechnology. At the turn of the century, a typical transistor was 130 to 250 nanometers in size. In 2014, Intel created a 14-nanometer transistor, then IBM created the first seven nanometer transistor in 2015, and then Lawrence Berkeley National Lab demonstrated a one nanometer transistor in 2016!
- Flexible, bendable, foldable, rollable, and stretchable electronics are reaching into various sectors and are being integrated into a variety of products, including wearables, medical applications, aerospace applications, and the Internet of Things.
- Nanotechnology can be incorporated into solar panels to convert sunlight to electricity more efficiently, promising inexpensive solar power in the future. Newer research suggests that future solar converters might even be "paintable."

- Nanoparticles are being developed to clean industrial water pollutants in ground water through chemical reactions that render the pollutants harmless.

Nanotechnology offers the promise of developing multifunctional materials that will contribute to building and maintaining lighter, safer, smarter, and more efficient vehicles, aircraft, spacecraft, and ships. In addition, nanotechnology offers various means to improve the transportation infrastructure:

- Nanoscale sensors and devices may provide cost-effective continuous monitoring of the structural integrity and performance of bridges, tunnels, rails, parking structures, and pavements over time. Nanoscale sensors, communications devices, and other innovations enabled by nanoelectronics can also support an enhanced transportation infrastructure that can communicate with vehicle-based systems to help drivers maintain lane position and improve drivers' interfaces to onboard electronics.

- Nano-engineered materials in automotive products include polymer nanocomposites structural parts; high-power rechargeable battery systems; high-efficiency/low-cost sensors and electronics; thin-film smart solar panels; and fuel additives and improved catalytic converters for cleaner exhaust and extended range.

Mr. Lucky Agarwal  
Asst. Professor  
Department of ECE, MITS

## UNIVERSITY INNOVATION FELLOWS (UIF):

Below mentioned list of students from ECE got selected for the program:

S. Vishnu Sai: BSNL inplant training, ECLATECS 2K17 - IOT Jntu kalikiri

Veerendra prasad: Unamnned ground vehicles

S. Tabraiz Hussain: Unamnned ground vehicles

V.Vijay Krishna: Unamnned ground vehicles

B. Yamuna : Latex, design thinking

P Arjun Chakravarhti: BSNL inplant training, ECLATECS 2K17-IOT, Tech Quiz.

S Yuvamanjunath Reddy: Photon, ECLATECS 2K17-IOT, Tech Quiz.



## STUDENT ARTICLES:



### **CICRET BRACELET**

With wearables gaining some traction, smartphones and tablets are by no means the only mobile devices around nowadays. Now, though, Cicret is looking to take things a step farther and turn your arm into a smartphone. Conceived 12 months ago and designed over the course of 6 months, the Cicret Bracelet is a small wristband that looks like the Jawbone Up. The Bracelet comprises a Pico projector and a row of eight proximity sensors that point towards the user's forearm. It operates as a standalone device and, when activated with a twist of the wrist, projects an Android interface onto the users arm, much like Chris Harrison's Skinput research. The proximity sensors detect where the user's finger or fingers are and allow them to interact with the interface as they would any other Android device. There are potential advantages to turning ordinary objects (or, in this case, limbs) into mobile devices, but projected touch screens typically lack the responsiveness and visual clarity of the glass screens we're used to. This projected keyboard, for example, delivered a poor typing experience. It should be interesting to see if the Cicret Bracelet can improve on the technology, to make something we did actually to use. Elsewhere, the Cicret Bracelet features an accelerometer and a vibration module, along with an LED for notifications. Connectivity is provided by way of WIFI, Bluetooth and a Micro USB port. It is expected to be made available in 16 GB and 32 GB models. The device will allow users to send and receive emails, browse the web and play games. It will also be possible for users to pair it with an existing smartphone, answer incoming phone calls and activate the speakerphone functionality on their smartphone.

T.LEELABHISHEK REDDY  
III<sup>rd</sup> ECE-B

## The Coolest Thing I've Found in Google GOOGLE LENS

Google Lens is a set of vision-based computing capabilities that allows your smartphone to understand what's going on in a photo. The Google Lens technology relies upon your smartphone's camera to "see" what's around you and give you contextual information about your surroundings.

Using the camera on your handset, Google Lens can scan a product, animal, text or something else in your environment and tell you what that object is. The service relies on information sourced from Google and other places to give you accurate information about the subject.

Briefly we can say that, lens uses the camera on a phone to scan various items, text, and documents and reveal the information about what it sees.

**Conclusion:** Lens will scan photos you've snapped or saved and provide additional information about what is in the photo.

***"Any sufficiently advanced technology is indistinguishable from magic."***

By K.PRATHAP REDDY  
II Year ECE - B

## **WEARLEBANDAGE FOR HEALTH MONIT**

Japanese researchers at the Takao Someya Research Group and the University of Tokyo have recently invented ultrathin, stretchable rubber sheets that can adhere to your skin. An electronic skin-like sheet, it monitors your crucial vital signs. It will monitor important health data and as well as send and receive messages include emojis. This wearable rubber sheet is loaded with 16-by-24 micro-LED lights and stretchable wiring that acts like a LED display. It is also incorporates a lightweight sensor composed of a breathable "nanomesh" electrode and a wireless communication module. It is hooked to an electrocardiogram machine that tracks and displays your heartbeat. The outcome: you can see your vital signs on your skin. When you have messages sent to your hand, you would feel emotional closeness to the sender. A red thumbs up will indicate a stable heartbeat. This "skin" can stretch up to 45 percent of its original length, and can be worn for up to one week. It can be placed for a week without causing skin inflammation, and is light enough that users might forget they are wearing it. The skin is connected to a wireless communication module that stores the data in an electronic cloud. By using this joggers to monitor heart rates or checking running routes and non-invasive monitoring of patients of the sick and frail. The idea behind it is that a doctor can monitor your vital signs no matter where you are. "In the future we envision human friendly skin electronics that will lead to improving the quality of human life"



M.V.SAI SANDEEP  
3RD ECE-B

## How To Beat The Odds And Make Your First Project A Success

### why projects are not successful

- long completion times
- poor quality of the data collection
- lack of internal expertise
- budget overruns

### How to make project successful

Solve a problem that someone cares about.

Plan realistically, don't try to change the world.

Obtain partners for success.

Augment your capabilities with outside resources.

Address resistance to changes. Define extended projects success and goals.

Drive shared ownership and accountability.

Establish a learning culture, be flexible and adapt.

***“you know what you know, but  
you don't know what you don't know,  
if you know what you don't know it will be the first  
step for your 'Success' .....*”**

Y.Samyuktha  
ECE-B(2<sup>nd</sup> year)

### **STUDENT'S CELL PHONE ADDICTION AND THEIR OPINIONS**

People are prisoners of their phones, that's why they are called cell phones. Cell phone plays an essential role in communication throughout the world. The technical revolution that many Americans have experienced has drastically changed the way humans interact and communicate with one another. The observations in and out of the campus suggest the addiction of students is about 90percent interacting with the device in one way or other. Nevertheless, a survey of students found that they believe that the need of self-gratification achieved through excessive cell phone use has negative psychological effects on them. Overall, this paper would show the addicted world of technology, and the impacts of phones have on student's behavior.

By K.MADHAVI ECE-B

# **ROBOTICS**

## **THE RISE OF ROBOTICS**

By 2050 almost 90% assembly line jobs will be done by Robots.



Now, scientists are concentrating more on Artificial intelligence. In recent years the mushrooming power, functionality and ubiquity of computers and the Internet have outstripped early forecasts about technology's rate of advancement and usefulness in everyday life.

Alert pundits now foresee a world saturated with powerful computer chips, which will increasingly insinuate themselves into our gadgets, dwellings, apparel and even our bodies.

Yet a closely related goal has remained stubbornly elusive.

In those days experts who were dazzled by the seemingly miraculous calculational ability of computers thought that if only the right software were written, computers could become the artificial brains of sophisticated autonomous robots. Within a decade or two, they believed, such robots would be cleaning our doors, mowing our lawns and, in general, eliminating drudgery from our lives.

Obviously, it hasn't turned out that way. It is true that industrial robots have transformed the manufacture of automobiles, among other products.

But that kind of automation is a far cry from the versatile, mobile, autonomous creations that so many scientists and engineers have hoped for. In pursuit of such robots, waves of researchers have grown disheartened and scores of start-up companies have gone out of business. Nevertheless, I am convinced that the decades-old dream of a useful, general-purpose autonomous robot will be realized in the not too distant future.



By 2010 we will see mobile robots as big as people but with cognitive abilities similar in many respects to those of a lizard. The machines will be capable of carrying out simple chores, such as vacuuming, dusting, delivering packages and taking out the garbage. By 2040, I believe, we will finally achieve the original goal of robotics and a thematic mainstay of science fiction: a freely moving machine with the intellectual capabilities of a human being. Fourth-generation universal robots with a humanlike 100 million MIPS will be able to abstract and generalize. They will result from melding powerful reasoning programs to third-generation machines. These reasoning programs will be the far more sophisticated descendants of today's theorem provers and expert systems, which mimic human reasoning to make medical diagnoses, schedule routes, make financial decisions, configure computer systems, analyse seismic data to locate oil deposits, and so on.

Properly educated, the resulting robots will become quite formidable. In fact, I am sure they will outperform us in any conceivable area of endeavour, intellectual or physical. Inevitably, such a development will lead to a fundamental restructuring of our society. Entire corporations will exist without any human employees or investors at all. Humans will play a pivotal role in formulating the intricate complex of laws that will govern corporate behaviour. Ultimately, though, it is likely that our descendants will cease to work in the sense that we do now. They will probably occupy their days with a variety of social, recreational and artistic pursuits, not unlike today's comfortable retirees or the wealthy leisure classes.

The path I've outlined roughly recapitulates the evolution of human intelligence—but 10 million times more rapidly. It suggests that robot intelligence will surpass our own well before 2050. In that case, mass-produced, fully educated robot scientists working diligently, cheaply, rapidly and increasingly effectively will ensure that most of what science knows in 2050 will have been discovered by our artificial progeny!

**P. Afzal ali zaheer**  
**III<sup>rd</sup> B.Tech, Dept. Of ECE**

# PLACEMENT UPDATES:

Roll No	Student Name	Company Name	Designation
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14691a04d8	C.Priyanka Raj	Alliens Group	Sales Executive
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14691a0490	K.Mahitha	Alliens Group	Sales Executive
14691a04a9	V.Nagasai Harshitha	Alliens Group	Sales Executive
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15695A0440	Venkata Krishna	Caliber Technologies Pvt Ltd	Developer/Support Engineer
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14691A0482	Kusuma	DIVUM CORPORATE SERVICES LTD	software engineer
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