



FIELD WORK REPORT

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FIELD WORK REPORT



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FIELD WORK REPORT

Carried out by

**The Department of
Computer Science and Engineering**

Date: 25/05/2023

Organization: SAP Labs, Noida



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Accurate Institute of Management & Technology
Greater Noida



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The Field work was organised for the final year students of CSE branch of Accurate Institute of Management & Technology, Greater Noida. The Field work was conducted in SAP Labs, Noida. The total number of 106 students in CSE have participated in the Field work.

Mr. Aman, Ms. Ananya, Mr. Ravi and Mr. Prince were the coordinators of SAP Labs, who helped in educating the students. Students of CSE Dept. along with Prof. Amit, Dr. Suryakant and Mrs. Ekta (Assistant Placement Officer) visited to the SAP Labs, Noida on 25/05/2023 for field work.

The SAP Labs Provided 17 mentors to the students, who were experts in different fields like Product Design, HR, Enterprise, and others. The students were divided bestowing to their interest and were guided accordingly. Many students faced their Mock interviews and learnt the work culture of the industries. The following are the most common things what every student learnt collectively.

1. Interview Questions
2. Interview Rounds
3. CV writing
4. Time management
5. Goal Setting
6. Long term and short-term goals
7. Communication Skills




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The visit ended with all-round feedback from the mentors, mentees and faculties. Students reached the college by 6.00pm in the evening.

Here are the few testimonies form the students regarding the visit

. Ananya Bhatt



Ananya Bhatt pursuing my 4th year of CSE in AIMT. I am glad to share about the visit to SAP lab which was organized by our collage on 25/05/2023. This was our first Field work to

SAP lab, it was such a marvellous experience. As soon as I entered the campus, I was impressed by the ambience. Each one of us allotted with mentors to guide us to our future improvements. My mentor was Mr. Ravi who had 15 years of working experience in SAP lab and worked in different fields in SAP. He made me very comfortable and shared lot of his experience.

We had a useful talk about entrepreneurs and some more important ethical topics. Spending time with such an expert was so helpful. We had lunch together, took a walk around campus and talked about his all experience. Mentor was very open mind, answered and responded for all my questions. I learnt many useful things for future improvements. Now I am very confident after this session. I learnt key elements of

getting success path to reach my Dreams. I am really thankful to my mentor, SAP and our college organization for this memorable opportunity. I hope we will get some more opportunities like this in future for career growth.

Mr. Prince (CSE Student)

I'm Prince, a fourth-year AIMT student pursuing a B.Tech in the CSE department. I wanted to talk about my SAP lab experience. I made a partial fieldwork visit there. I was ecstatic to begin my fieldwork experience. The ambience and atmosphere of the SAP lab were very striking. We were able to see the entire facility thanks to the generosity of the SAP Lab personnel.



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They asked us to receive career coaching. Normally, I would expect the presentation to take place in a seminar hall with a PowerPoint discussing various topics, but SAP Lab broke with tradition by assigning a mentor to share his experiences with us. And because of their experience, they have sufficient training. knowledge that helped as a lot. my mentor name is Mr. Shiva he thought me very well about his personal experience how to achieve job how to gain the experience and knowledge etc.



I'm very happy to a person with high experience with his experience he shared his knowledge and experience of his life how to manage the things and they common ways that way he thought me my perception has been

changed there he took me to whole over campus he started to interact with me feel so comfortable and easy to talk with him he explained me how to manage my time, how to build my resume, a mini mock interview and the most common questions in interviews those examples helped me a lot and they steps to time management that's so impressive and useful it will help me a lot he explained me do 's and don't in resume and he cleared my all doubts about resume that made me feel I'm confident enough to face an interview or apply for any other jobs the every aspect they taught us will be useful for students like us everyone will be benefited by the program of SAP lab I want to thank SAP lab there team of this program especially my mentor Mr. Shiva I'm really thankful to them and to our CSE Department and college placement department. I expect this type of visits more.



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Samriddhi, CSE Student

Field work was organized on 25/05/2023 at SAP is nice experience , i learned many new things , mainly regarding interview tips corporate culture, I have explored career opportunities in future, It was like a career guidance for me and I recommend every student to go for Field work. It was a great experience with employees




Ritika CSE Student

The Field work for SAP LAB is a great experience for everyone of us . We have experienced the company environment and the way they behave, the professionalism . And we have learnt how to face the interviews , importance of communication skills, resume building , Gmail writing, mock interviews and many..

Overall we had a great experience.




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FIELD WORK REPORT

Carried out by

**The Department of
Electronics and Communication Engineering**

Date: 07/11/2022

**Organization: BPL- limited,
Ghaziabad, U.P.**



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Report of the field work:

1. BPL has become India's beloved electronic organization which aims at designing premium and reliable products that seamlessly blend into the daily routine of our consumers making their everyday lives easier and happier.
2. Since 1963 BPL have been on a quest to understand consumer needs which in turn influenced our product design.
3. BPL has vast range of products like Television, Audio, Lighting, Fans, Electronic appliances, Air conditioners, Refrigerators, Washing Machines, Personal Care, Kitchen and home appliances.
4. In Doddaballapura division BPL aims at designing PCB's in single layer and multi-layer.
5. PCB stands for printed circuit board which carries electrical circuits and allows signals and power to be routed between devices, PCB consists of several layers of materials.
6. PCB manufacturing process requires a complex procedure to ensure the performance of the finished products, though circuit boards can be single, double or multi-layer boards.

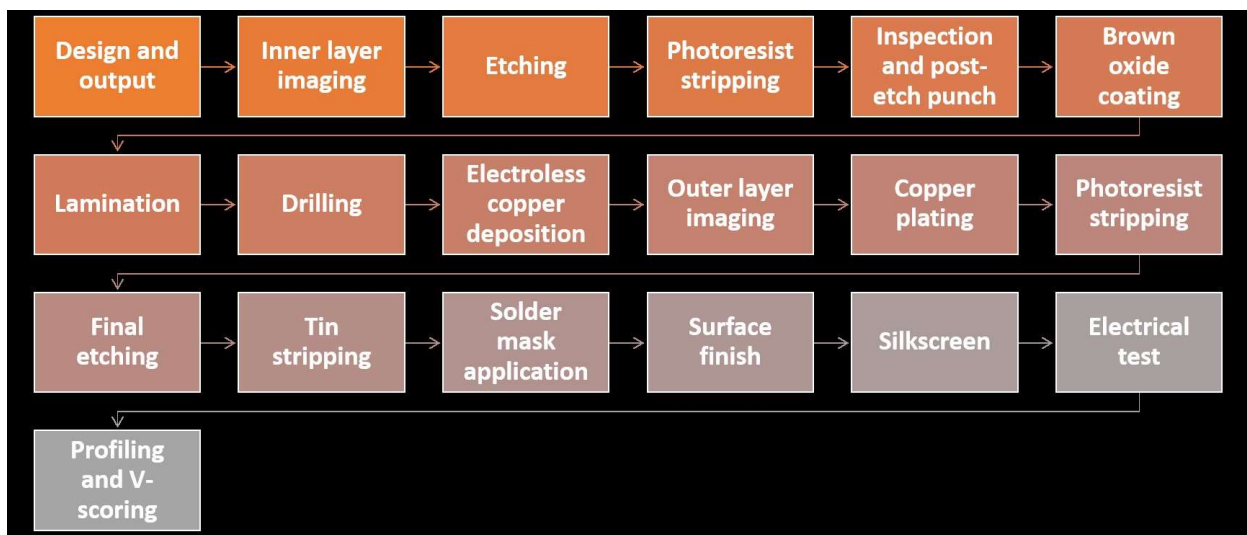


Fig: PCB Design Process

The PCB manufacturing process consists of following steps:

Step1-Designing PCB

Step2-Design review and engineering question

Step3-printing the PCB design

Step4-Printing the copper for the interior layer

Step5-Etch the inner layers to remove the copper

Step6-Layer alignment

Step 7-Automated optical inspection

Step 8-Laminating the PCB layers



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- Step 9-Drilling holes
- Step 10-PCB plating
- Step 11-Outer layer imaging
- Step 12-Outer layer etching
- Step 13-Outer layer AOI
- Step 14-Solder mask application
- Step 15-Silk screen application
- Step 16-Finishing the PCB
- Step 17-Electrical reliability test
- Step 18-Profiling and route out
- Step 19-Quality check and visual inspection
- Step 20-Packaging and delivering

To start with the PCB design process following are the very important:

1. **Substrate** is a base material for PCB designing. Traditional boards use a fiber class material called FR4, other boards may use Aluminium, Ceramic or polymer substrate.
2. **Copper**-The substrate of the PCB is covered with a thin copper and laminated with heated adhesive
3. The number of layers in a board is determined by the number of copper lines.

EX: Double sided PCB's will have copper applied to both sides of substrate and a 4-layer board will have 4 layers of copper. Most of the PCB's contain 1 ounce of copper per sqft, though high power of PCB's uses more than 2 or 3 ounces.

These materials are combined in the fabrication process to create the bare PCB. This bare PCB is then sent through the assembly process or PCBA, to apply solder, and the electronic components ending in a fully functioning PCB.

4. **PCB fabrication:** PCB fabrication is the process by which the above mentioned materials of a board are combined into functional layers to form the bare PCB. The fabrication of bare PCB board is as follows

- Design review
- Film application
- Copper etching
- Layer stack up and lamination
- Drilling
- Plating
- Solder mask application



A handwritten signature in green ink.

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Design review:

The fabrication process does not start until the engineering reuse the design this is called a design for manufacturability check, which ensures the design is valid and fulfills the tolerances and specifications that can be met during manufacturing

Film application: The PCB design is printed on the films using laser direct imaging which provides photo negatives of the board layout

These films are applied to the material layers and used as a guide for each manufacturing process

Copper Etching: It is a process of removing unwanted or excess copper to create traces and pads. This process usually involves multiple rounds of cleaning to remove excess material and unwanted chemicals.

Layer stack up and lamination for multi-layer boards the inner and outer layers are aligned with one another after the copper etching process.

The process is accomplished using alignment holes in the board itself. After inspecting the layers, an epoxy based prepregment is placed between each layer and the board is laminated together by applying heat , where heat melts the epoxy and adheres the layers together.

Drilling: After the board layers are laminated to gether , a drill is used to create holes through the board. These holes are used for mounting holes, through holes and vias.

Plating: After drilling is completed the board is plated with a micron thick layer of copper which coats the inside if the drilled holes, creating plated through holes.

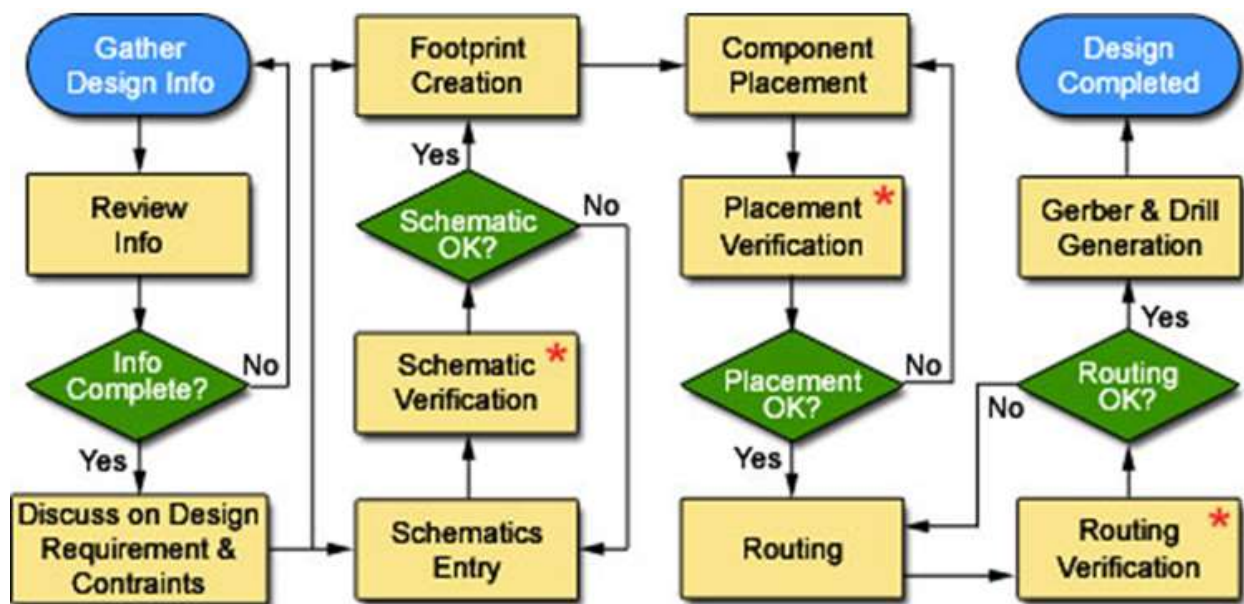
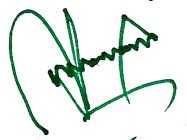


Fig: PCB Verification process.

This is usually followed up with more etching and copper removal on the outer l ayer of the board.




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The solder mask gives the PCB in green color, which insulates copper traces from accidental contact with other conductive materials that could create functional issues and helps during assembly, so that solder is applied to the correct location

Once applied, unwanted areas of solder mask are removed in the PCB's placed in the oven to cure the solder mask layer

Silk screen: The next step is the application of the silk screen after which the board undergoes the final curing stage

The silk screen is applied on the top of the solder mask layer.

Silk screen is usually white in color and adds letters, numbers and symbols to the PCB.

This silk screen layer helps assist with component type and location during the assembly of the PCB.

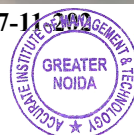
Surface finishing: After the solder mask the screen are cured the PCB may be plated with gold or silver or other surface finish to ensure protection and functionality.

After the boards complete these steps will undergo electrical reliability testing to ensure they are functional.

After that if the boards are produced in a panel they are cut apart, inspected as needed.



FIELD WORK TO BPL ON 07-11-2022




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Indian Institute of Astrophysics (IIA)

The main focus of the radio astronomy facilities at IIA is on the observations of the sun. The early observations date back to the 1950s at the kodaikanal observatory of the institute. Continuous recording of the solar radio noise flux commenced in 1952 using a 100 MHz interferometer with Yagi antennas. A 20 feet paraboloid for observations at frequencies in the decimeter and meter wavelength range was set up on an equatorial mount in 1961. Under the kodaikanal-Yale project, recording of radio radiation from Jupiter at a frequency of 22.2MHz was started using a phase switching interferometer.


Aerial view of the East-West arm of the GEETEE



Since 1976, the Institute operates a decameter wave radio telescope jointly with the Raman Research Institute at Gauribidanur (Latitude:13.60° N; Longitude:77.44° E), about 100 km north of Bangalore. The GEETEE consists of 1000 dipoles arranged in a 'T' configuration, with a 1.4 km East-West arm and a 0.5 km South arm. It has been engaged in the study of radio waves at 34.5 MHz emanating from the Sun and various other diverse objects in the sky. The most notable observations with the array till date are: (i) first two-dimensional images of the radio emission associated with slowly varying discrete sources in the outer solar corona, (ii) all-sky survey of radio sources at 34.5 MHz in the declination range $\sim 30^\circ$ S to 60° N, and (iii) low frequency carbon recombination lines in the astrophysical sources. Observations of gaseous remnants of exploding stars and the apparently vacant space between members of a cluster of galaxies have also been obtained. The main studies at present pertain to pulsars with a new and sensitive backend receiver. A small broadband array in the frequency range 35 - 70 MHz was also operated during mid 1980s at this Observatory.

A section of the Graph




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A radioheliograph to obtain two dimensional images of the solar corona simultaneously at different frequencies in the range 40 - 150 MHz is also functional here since 1997. The basic receiving element used is a log-periodic dipole (LPD), and the array consists 384 of them configured as 64 groups. The dipoles are arranged in a 'T' configuration similar to the GEETEE. The present spatial and temporal resolution of the GRAPH are ~ 3 arc min (@ 150 MHz) and ~ 256 msec, respectively. The array is in regular operation and the observing period is ~ 9 AM - 5 PM (03:30 - 11:30 UT), every day. A 4096 channel digital correlator is used as the back end receiver to extract the strength and positional information of the radio emission from the solar corona and the various discrete structures there. The frequency coverage of GRAPH is unique that it provides useful information on the solar corona in the height range $\sim 0.2 - 0.8 R_s$ above the solar surface ($R_s =$ radius of the Sun = 696000 km), which at present is difficult to observe at other frequencies in the electromagnetic spectrum. No other radio telescopes, dedicated for solar observations, are presently operational in the above frequency range anywhere in the world. Some of the notable observations with GRAPH till date are: (i) density / temperature diagnostics of pre-event structure of a CME, (ii) velocity / acceleration of a CME close to the solar surface, (iii) 'true' speed of a CME in the three-dimensional space, (iv) estimation of the parameters of a CME at $\sim 40 R_s$ from the Sun through angular broadening observations of a distant cosmic radio source, (v) seismology of the solar corona using radio burst emission as tracers, (vi) coronal electron density gradient in the height range $\sim 0.2 - 0.8 R_s$ above the solar surface, and (vii) plasma characteristics of the radio emission associated with emerging magnetic flux from the sub-surface layers of the solar photosphere.

A high resolution radio spectrograph is used in conjunction with the GRAPH for obtaining dynamic spectrum of the transient emission from the solar corona. The antenna system consists of 8 log periodic dipoles. Presently spectral information is obtained with an instantaneous bandwidth of ~ 250 KHz, and a temporal resolution is ~ 43 msec. The GLOSS and the GRAPH together provide spectral and positional information on eruptive solar activity, again an unique combination. The observations so far have provided clues to: (i) electron acceleration associated with small scale non-thermal energy releases in the solar atmosphere, (ii) occurrence of radio bursts associated with successive magneto hydrodynamic shocks in the solar corona, and (iii) source region of a CME through observations of transient 'absorption' bursts.



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Gauribidanur Radio Interferometric Polarimeter (GRIP)



Based on the theoretical formulations for the response of a correlation interferometer to polarized radiation, an east-west one-dimensional array of 40 log periodic dipoles have been set up to probe the coronal magnetic field in the height range $\sim 0.2 - 0.8 R_s$, above the solar surface. The dipoles are arranged as 3 groups oriented at 0° & 90° with respect to the terrestrial north. This helps in capturing the polarization state of the incident radiation with good accuracy. The idea is to get information on the coronal magnetic field through observations of circularly polarized radio emission from the discrete sources in the corona. The spectral dependence of the observed emission in the above height range is derived through simultaneous multi-frequency observations.



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FIELD WORK PHOTOGRAPH

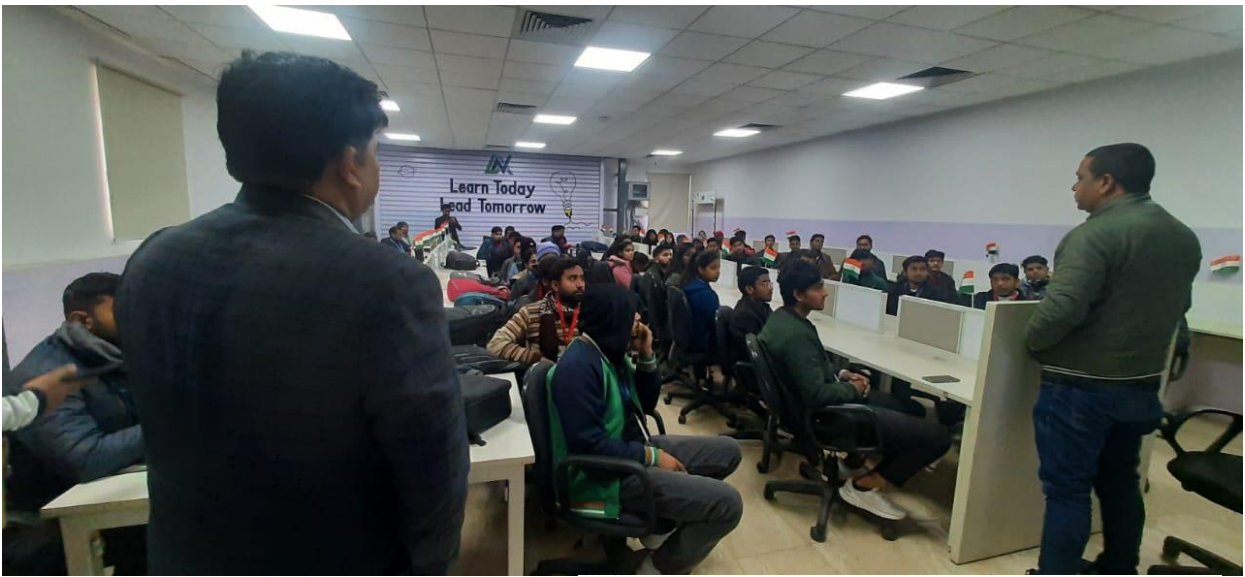


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PERMISSION LETTER

Request for Field Visit

Vineet Verma <vineet.verma@cloudanalogy.com>

Fri, Jan 19, 2023 at 11:52 AM

To: "Dr. Yogesh Bhomia" <dr.yogeshbhomia@accurate.in>, Vivek Sharma <sharma.vivek@cloudanalogy.com>

Dear Sir,

Thank you for reaching out and expressing your interest in an Field visit for the 2nd-year students from Accurate Institute of Management & Technology. We appreciate your commitment to providing students with valuable real-world experiences.

In this regard, I am adding **Mr Vivek Sharma**, as the designated coordinator to conduct the visit and facilitate the Student Tech Meetup program. Mr. Vivek will be the point of contact for coordinating the visit and ensuring a seamless experience for the students.

Please coordinate with Mr. Vivek, who can be reached at 7417234212, to finalize the details and ensure a smooth and enriching experience for the students.

We look forward to hosting the students and faculty from Accurate Institute of Management & Technology and trust that this visit will be beneficial for all involved.

Best Regards,



Vineet Kumar

Tech Training Head

Cloud Analogy CRM Specialist Limited | Learnowx

Skype: Vineet Verma

Email: vineet.verma@cloudanalogy.com

IN: +91 09911483519



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Permission Letter from Competent Authority

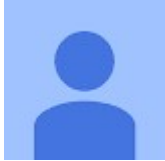
Permission for Field work for ECE Students
Accurate Institute of Management & Technology
on 07.11.2022

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manohar ramaswamy <manohar@bpl.in>

Mon,05/11/2022
4:13 PM

Dear Dr. Lalit Kaushal

Greetings of the day!

We are happy to give permission to the Final year students of ECE of your esteemed Institution.

On behalf of BPL-PCB DIVISION, Ghaziabad, U.P., we will take your students to the various Units of PCB manufacturing and we will educate them on Design and Development process of PCB, so that students will gain knowledge on the design, development and production process.


Kindly Contact our HR Dept. Mr. Abhishek Gowda for further assistance in this regard.

Thank You & Best Regards

Manohar Ramaswamy
Project Manager,
BPL India Pvt Limited.
Email: manohar@bpl.in

Website: www.bpl.in




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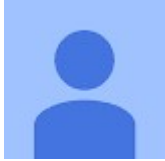
Permission from the competent Authority for the Field work :

Permission for Field work for CSE and ECE Students
Accurate Institute of Management & Technology
25.5.2023

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Surbhi Gupta <surbhi@sap.com>

Tue, April 19, 2023,
4:13 PM

Dear, Dr. Suryakant,

As per your permission request letter for the Field Work at SAP Labs, Noida , We are happy to give permission to the Final year students of CSE and ECE Students of your esteemed Institution.

On behalf of SAP, we will take your students to the various Units of SAP and we will train them on Software Development process and students will gain knowledge on the development of Software life cycle .

Kindly Contact our HR Dept Ms.Roshini for further assistance in this regard.

Thank You & Best Regards

Surbhi Gupta
HR Executive,
SAP Labs India Pvt Limited.

Email: surbhi@sap.com

Website: www.sap.com



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