# Dhanekula Institute Of Engineering & Technology

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COMPUTER SCIENCE ENGINEERING


*Tomorrow's World Through Today's Education*

DEPARTMENT OF Computer Science

THE Leaflet

NEWSLETTER

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NEWS LETTER


Dear Parents and Students,

It is with great pleasure that I welcome you to our College (DIET) Newsletter.

As Principal I am hugely impressed by the commitment of the college and the staff in providing an excellent all-round education for our students with our state of the art facilities. We as a team working together, strongly promote the zeal towards academic achievement among our students. The cultural, sporting and other successes of all our students and staff are also proudly celebrated together.

I congratulate the staff and students who brought latest technologies and concepts onto the day to day teaching learning platform. As long as our ideas are expressed and thoughts kindled we can be sure of learning, as everything begins with an idea.

I appreciate every student who shared the joy of participation in co-curricular and extracurricular activities along with their commitment to curriculum. That little extra we do, is the icing on the cake. 'Do more than belong – participate. Do more than care – help. Do more than believe – practice. Do more than be fair – be kind. Do more than forgive – forget. Do more than dream – work.'

With a long and rewarding history of achievement in education behind us, our DIET community continues to move forward together with confidence, pride and enthusiasm.

I hope you enjoy your visit to the website and should you wish to contact us, please find details at the www.diet.ac.in/

Yours in Education,
**Dr.Ravi Kadiyala**
Principal

# Message From HOD


**Dr. S. Suresh Professor & HOD,**
**Computer Science and Engineering**

*Greetings from the Department of CSE, Dhanekula Institute of Engineering & Technology, Vijayawada.!!!!*

"It is a pleasure to be the head of the department of CSE. The department offers B-Tech (CSE) and M-Tech (CSE). The department has a team of highly experienced and motivated faculty members who are in process of tuning the young minds to make them globally competitive. The department is equipped with state-of-the-art laboratories where students can enhance their knowledge and skill. The strength of the department is highly motivated students who understand the dynamics of the industry and upgrade their skills accordingly. The scope of computer science is endless. The students of the computer science and engineering are highly demanded by the recruiters of the top companies. Depending upon the interest of the student, he/she may choose to go for higher studies or if employed can choose to do research, development, design, production, application, testing or management in the Information Technology industry. In our department we not only give emphasis on study but also apply our knowledge in understanding what computers are, how to efficiently program them, different tools and technologies, the interface between the computer and the user, the computer graphics, computer networking, managing the database, software engineering and testing them efficiently and more. Through innovative teaching-learning process a teamwork approach and leadership building experience, our students gain vital communication and critical-thinking skills. Our institution provides a platform for the students to enhance their employability skills through Industry Institute Collaboration."

*I, Congratulate the team of faculty members and the students for their brilliant and original efforts. I wish all the Students and Faculty a great academic career.*

**Dr. S. Suresh Professor & HOD**,
Computer Science and Engineering,
Dhanekula Institute of Engineering & Technology,
Vijayawada - 531 139.

***Department Vision:*** To empower students of Computer Science and Engineering Department to be technologically adept, innovative, global citizens possessing human values.

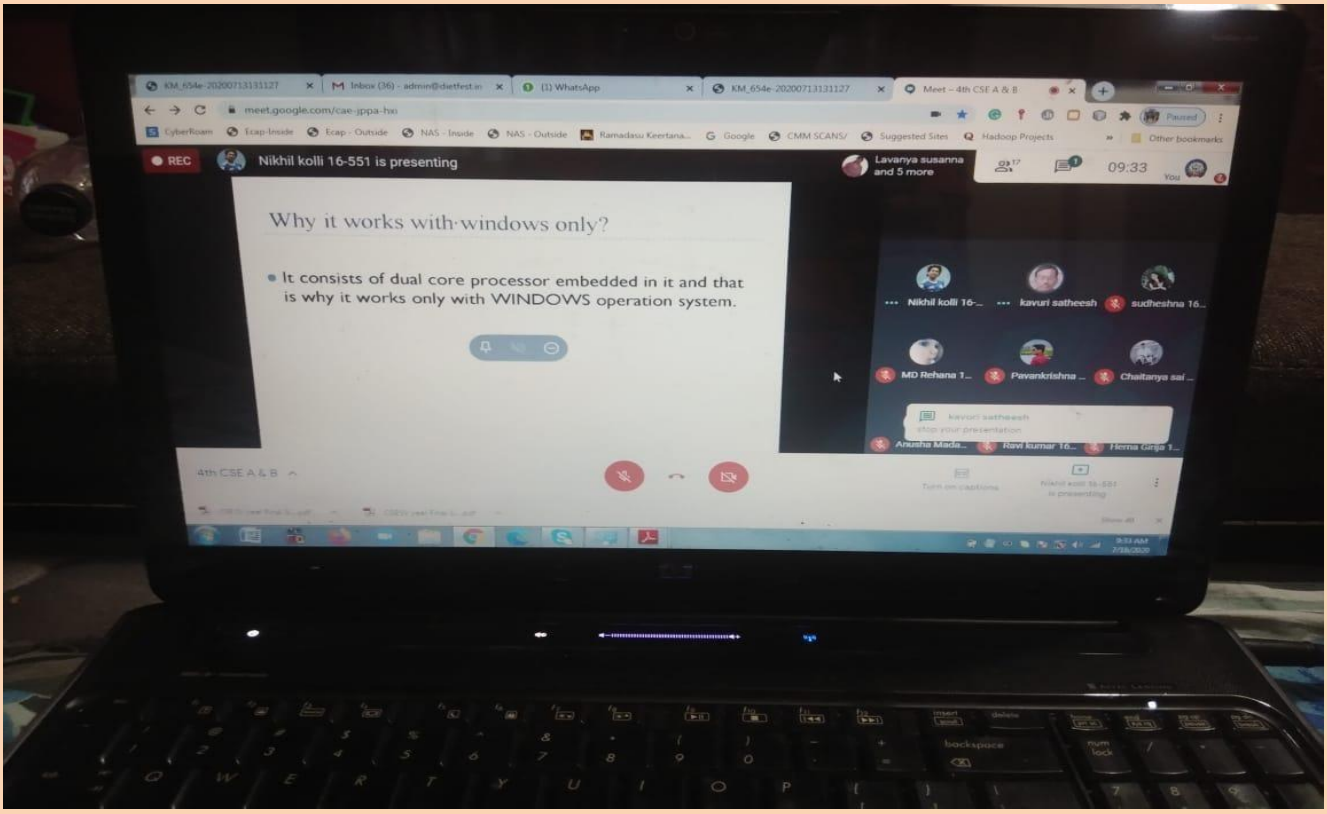
***Department Mission:*** To Encourage students to become self-motivated and problem solving individual To prepare students for professional career with academic excellence and leadership skills. To Empower the rural youth with computereducation. To Create Centre's of excellence in Computer Science and Engineer

**Program Educational Objectives(PEOs)**

**PEO1:** Excel in Professional career through knowledge in mathematics and engineering principles.
**PEO2:** Able to pursue higher education and research.
**PEO3:** Communicate effectively, recognize, and incorporate societal needs in their professional endeavors.
**PEO4:** Adapt to technological advancements by continuous learning

# DEPARTMENT ACTIVITIES:

The department of CSE has utilized the Lockdown period for effective implementation of various academic activities through online mode of teaching. The Faculty have completed the pending syllabus in the lockdown period using online teaching methods.



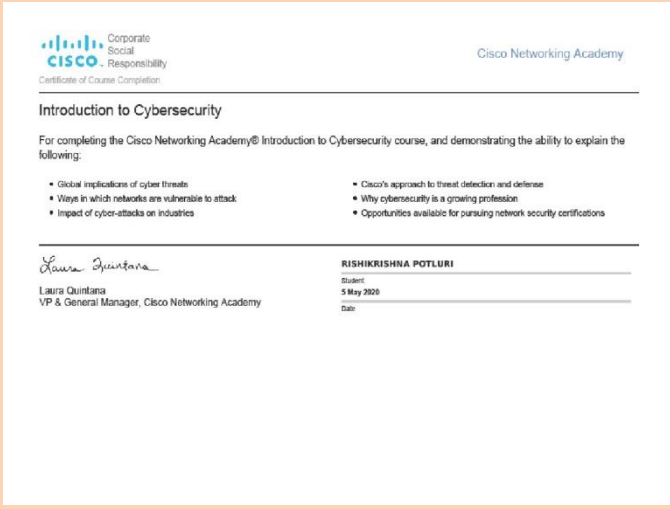

## STUDENT acTIvITIEs:

Most of the students were actively participated in the learning activities and in doing assignments. Faculty and students also participated and completed in various MOOCS courses like COURSERA, SPOKEN TUTORIAL, NPTEL, 360DigiTmg, APSSDC, TCSION, CISCO, ACCENTURE, UDEMY, INTERNSHALA, etc and received certificates during the lockdown period.

| Title | II/IV | III/IV | IV/IV |
|---|---|---|---|
| Total No.of certification courses done | 262 | 230 | 154 |

Some sample certificates of Final Year



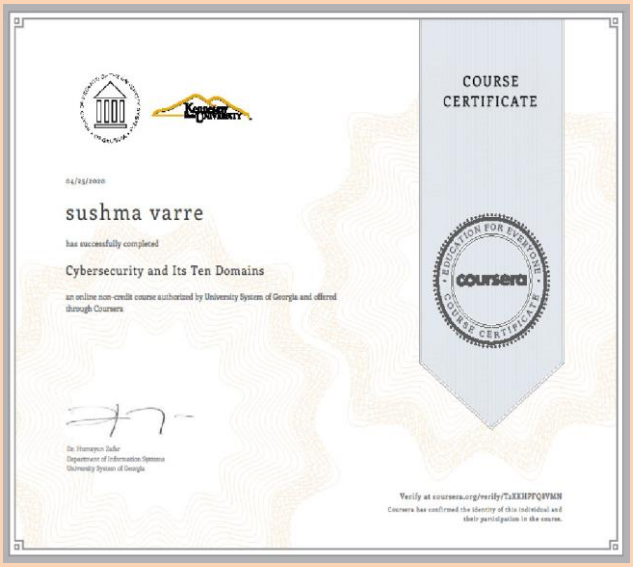





Some sample certificates of 3rd year







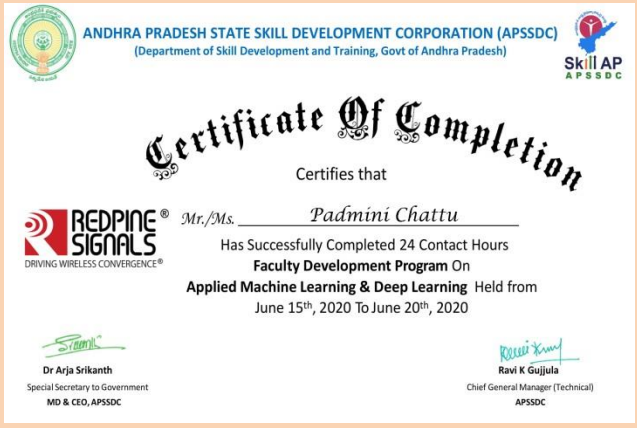

Some sample certificates of 2nd year

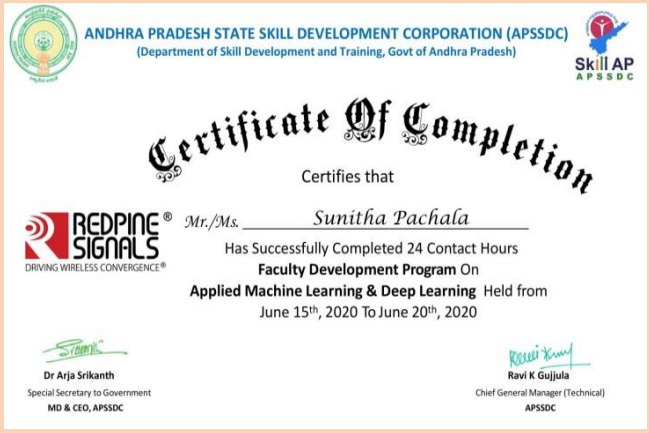





Faculty Achivements:

The Faculty have completed the pending syllabus in the lockdown period using online teaching methods. Most of the Faculty were actively participated in the learning activities like attending fdp programs and completed in various MOOCS courses and received certificates during the lockdown period. Sample certificates of faculty…….








## Student articles

# CloudDrops

## Abstract

CloudDrops is a pervasive awareness platform that integrates virtual information from the Web more closely with the contextually rich physical spaces in which we live and work. CloudDrops consists of many interactive stampsized displays, each showing a tiny bit of digital information. The large number of displays and their small size allows the user to flexibly instrument, orchestrate and reconfigure her personal information environment. We show different form factors for stamp-sized displays, provide a device concept and a first implementation.

We propose lightweight visualizations and interaction techniques that are tailored to the tiny device form factor. Moreover, we contribute techniques for associating these small displays with content that the user wants to stay aware of, including Web pages, contacts, and places. To demonstrate the capabilities of the platform, we present several application examples. A user study provides first insights into how CloudDrops enable users to create a personalized information environment by distributing stamp-sized displays over the entire architectural space.

INTRODUCTION:

People intensively use physical space for accessing and remembering paper-bound information [9]. Transforming large parts of our formerly physical information environment into the digital realm has its obvious advantages that cannot be underestimated; but this also comes at a cost: we are giving up the notion of having an information item at a meaningful place and of using our entire surroundings for managing information. Recent advances in pervasive display technologies enable high-resolution yet tiny, stamp-sized touch-displays that include processing power and networking capabilities. These self-contained devices are capable of displaying tiny information bits while being tangible and highly mobile, such that they can be situated at virtually any location.


This opens up a physical design flexibility for awareness systems, which largely overcomes the possibilities of using a handheld device (such as a smartphone) or a static installation (such as a large screen or a projector). The enduser can flexibly arrange the set of stamp-sized displays, locate them at meaningful places and thereby easily instrument, orchestrate and reconfigure his or her personal information environment, to stay aware of digital information. However, making use of such tiny displays for awareness applications poses various challenges.

This includes the questions of how content should be mapped to displays, how it should be visualized on the tiny displays, and how the user can interact with content. It is also unclear how several displays can be used in concert and how displays can be combined with physical artifacts to support situated awareness. We address these challenges and contribute CloudDrops, an interactive awareness platform that consists of many stampsized displays, which provide awareness of websites, contacts and places. The end-user can scatter the displays throughout the architectural space, to ensure each piece of information is available at a meaningful physical location.

Each display represents one user-defined digital entity: a Web page, contact or place. CloudDrops provide visualizations that can be perceived at a glance such that the user can skim changes of Web pages, contacts and places by visually browsing through physical space.

In addition, CloudDrops provide lightweight interactions. Based on a 6-dimensional holistic view on the platform, we provide the following contributions:

- We propose different form factors for stamp-sized pervasive displays, provide a device concept and a first implementation.

- We provide visualizations and interactions for Web pages and Web applications that are tailored to the tiny display size. In addition, we show how CloudDrops can support synchronous and asynchronous communication with remote persons.

In contrast to static installations, tangible tokens do not suffer from high initial costs and can easily be moved around. There is a variety of work in this area. Passive tokens were used as tangible bookmarks, as reminders or for physically representing data. Plink uses passive paper and a digital pen for creating written links to digital data. Other work proposed tokens that can give visual feedback using a lowresolution display (max. 8x8 pixels). A class of work even proposed high-resolution displays. However these only work on surfaces with a small surface area (e.g. tables) and cannot be used in the entire architectural space. To overcome this limitation, previous work suggested projection based solutions and wall-sized displays. Inspired by Mark Weiser's vision of populating rooms with inch-scale, interconnected displays [29], CloudDrops integrate the physical flexibility of tiny, tangible displays into awareness systems, supporting flexible physical orchestration of Web-based information.

## DESIGN CONSIDERATIONS

The design of an awareness platform consisting of stampsized displays that are situated in architectural space offers degrees of freedom in various dimensions. In this section, we provide an overview of the main design dimensions, which are used as the foundation for the CloudDrops platform. The design considerations are illustrated in Fig. 2.

### Shape & Size

CloudDrops can come in a variety of shapes and sizes. The size of the display results as a trade-off between mobility and the amount of content that needs to be displayed. Custom shapes for CloudDrops allow for novel affordances (e.g., a round shape supports interactions based on rotation) but can also provide a symbolic meaning. Consider for instance a CloudDrop in the shape of a heart to indicate that the display shows content related to a loved one. In order to make CloudDrops attachable to a wide variety of surfaces with different material characteristics, we propose their backside to be magnetic, sticky or pinnable.

### Dynamic Content

CloudDrops represent dynamic digital content, such as websites and documents or contacts. Thereby, each individual content is represented as a separate CloudDrop. This allows the user to flexible attach each item on a physical place. In the other direction, it makes a physical place accessible remotely to provide situated messaging and communication

### Association with Content

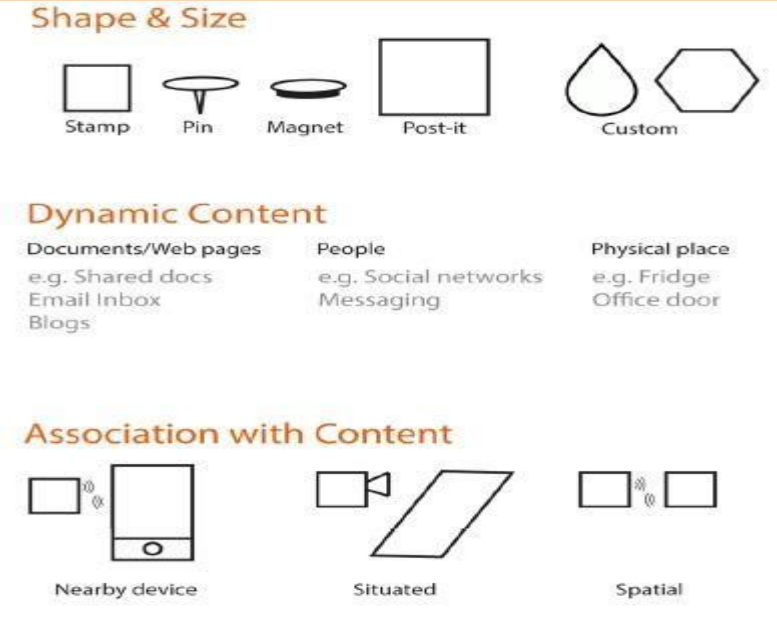
A CloudDrop is associated with a piece of dynamic digital data and shows its dynamics. Bringing this information onto the CloudDrop is somewhat challenging, since the tiny display size makes conventional information search hard if not impossible. Inspired by previous work [9, 33], we propose three ways in which CloudDrops can be associated with content:

(1) Content from a nearby device with a larger screen (e.g., a PC, tablet, or smartphone) is associated with a CloudDrop by using a simple gesture.

2) The CloudDrop recognizes the object or surface it is attached to and displays dynamic situated information related to this object or surface.

(3) Content is defined by one or more CloudDrop in the proximity, which together form a group.

We will provide more details and examples for each of these associations below.




We realized the concept of a CloudDrop in two working prototype versions (Fig. 3). Each emphasizes different aspects of the concept of a CloudDrop. In order to visualize and interact with information from the cloud, a CloudDrop contains a small touch-sensitive display. The display is big enough to show a small piece of information, which can be consumed at a glance. Users can personalize the appearance of a CloudDrop with custom casings. As examples, we chose a drop shape and a more neutral square shape. Similarly to how magnets are used on whiteboards or fridges, a CloudDrop can be attached to various objects, sticking to them with its magnet and adding additional information to those objects.


**Figure 3: CloudDrop prototypes.**

Our prototype B has a camera on the backside (see Fig. 3 reverse side), which is used for easy association between the CloudDrop and the underlying object by taking a picture of the object. While a CloudDrop can be used on its own, as a tiny drop, CloudDrops are often used in groups. A "puddle" of CloudDrops can act as a bigger, coherent entity, for instance to provide more detailed information or to provide increased visibility for notifications. Our prototype B is capable of recognizing nearby CloudDrops.

## Implementation

In our prototypical implementation, each CloudDrop has a full-color touch-sensitive screen with a diagonal of 1.5 inches and a resolution of 160x160px. It features a 600Mhz processor, a built-in accelerometer and WIFI connectivity, and an RFID tag attached. Prototype A weighs 32 grams and measures 2.1x2.9x0.5 inches. Prototype B weighs 73 grams and measures 2.1x2.1x1.25 inches. It features an infrared sensor on each side with a maximum range of 4cm for neighbor detection. Once a neighbor is detected, they exchange their ID and the side along which they are facing each other via a custom infrared protocol. All CloudDrops are connected to a central server. Other computing devices recognize a nearby CloudDrop using an RFID

reader. The rechargeable battery lasts for approx. 8 hours during typical usage. Our implementation is compatible with standard Web protocols and major application platforms. CloudDrops can display and interact back with content from Web pages, Gmail, GoogleDocs and Skype. For associations with the Google Chrome browser and Skype, the nearby computing device runs a client application that communicates with the CloudDrops web server.

## CONCLUSION

We presented a platform for situated awareness of and interacting with Web-based information. Our findings show that by scattering CloudDrops throughout the architectural space, people design a highly personalized and highly localized physical/digital information environment that supports awareness of persons, websites and applications, as well as interpersonal communication. Future work should examine in more detail how people use tiny displays in architectural space over extended periods of time.

MD.Rehana,168T1A0561,

IV/IV B.Tech

# Rover Mission Using JAVA Technology

Man who is a good explorer by nature is trying to invade his next planet, the Mars, with the help of JAVA enabled rovers. Both JAVA and rovers are wonders created by man.

Java technology today is good for general purpose computing and GUIs, but it was not ready for use with control systems like the software on the Rover. The Golden Gate project seeks to use RTSJ (Real Time Specification for JAVA) to develop a system of control software that can be used on a Rover.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control.

Java RTS enables developers of real-time applications to take full advantage of the Java language ecosystem while maintaining the predictability of current real-time development platforms. Java RTS also brings the world of real-time programming to developers currently using Java technology to create applications that reach into the physical world.

Golden Gate project is being worked on which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Java 3D and Java Advanced Imaging technology are also key to the software JPL (Jet Propulsion Laboratory) is using to render and interpret real time images captured by the Rover.

JAVA, due to its unique features like, platform independency, rich set of API libraries such as 3-D modeling APIs, Advanced Imaging APIs and its Mission Data System to control physical systems fuelled the Mars exploring rover mission.

NASA's twin Mars rovers, Spirit and Opportunity, are exploring opposite sides of the Red Planet to search for evidence of past or present water and to map its geological and climate history. On Jan. 3, 2004, the Spirit rover landed in Gusev Crater on Mars, kicking off a mission planned to last 90-days. Two years later, Spirit and fellow robotic explorer Opportunity, which landed Jan. 24, 2004, are still going strong. Each Martian morning, the rovers receive a full day of instructions. They operate autonomously all day, and transmit the resulting images and data back to earth at the end of the day. The operations staff lives on "Mars time", each day is approximately 24 hours, 40 minutes. Planning is done during the Martian night, and there are strict deadlines for the uplink of new rover instructions.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control. In the current mission, the software used on the ground to create commands to send to the Rover, and the control software that actually sits on the Rover, are two very different systems with nothing in common whatsoever. What's being used up on the Rover is a well-known real-time operating system from Wind River Systems. Golden Gate is being worked upon which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Sun Labs, Carnegie Mellon-West, a campus of Carnegie Mellon located near Sun Labs in Silicon Valley, and the Jet Propulsion Labs (JPL) are working together on this project.


Work is being done on implementation of a software architecture developed at JPL calledMDS, or Mission Data System. Greater commonality is being created between the flight system on the Rover and the ground system -- all essentially using Real-Time Specification for Java (RTSJ), and a more seamless development environment for the entire system. Java language pioneer James Gosling calls the ground-side control system that sent signals to the Mars Rover," the coolest Java app ever".

Mars Exploration Rovers Mission

## CONCLUSION

We all know how JAVA emerged from the hands of Gosling's team who were trying to program an application which could work efficiently on electronic devices. It was a success and soon java spread over the world due to its unique feature, platform independency to be used in web applications. Now JAVA and its rich set of API are even helping us drive to our next planet MARS.

Now we have two rovers on mars each exploring the red planet. These are working efficiently since January 2004 only with the help of the best ground control system powered by JAVA.

Sun is working to implement java in physical systems like rovers and power plants .Sensing plays a key role in these projects. This could be considered a mile stone in the fields of Artificial Intelligence and Robotics.

N.Gayatri,168T1A0545,

IV/IV B.Tech

## SNIppETs IN pyThON prOGraMMING:

Q 1 - What is the output for −S = [['him', 'sell'], [90, 28, 43]]

S[0][1][1]

A - 'e'

B - 'i'

C - '90'

D - 'h'

Answer : A

Explanation

List can contain other list values.

So, in this question S[0] gives ['him', 'sell'], S[0][1] gives ‘sell’ and S[0][1][1] gives ‘e’.

Remember, the index in python starts with ‘0’.

Q 2 - Which of the following is false statement in python

A - int(144)==144

B - int('144')==144

C - int(144.0)==144

D - None of the above

Answer : D

Explanation

The built-in int() type constructor converts string and floating value to integer.

Q 3 - When the given code is executed how many times ' 'you are learning python ' ' will be printed.

```
a = 0
while a<10:
... print("you are learning python")
... pass
```

A - 9

B - 10

C - 11

D - Infinite number of times.

Answer : D

Explanation

The loop will execute infinite number of times because there is no statement specified for end of loop and pass indicates nothing is to be done.

Q4.-Suppose we have a set a={10,9,8,7}, and we excute a.remove(14) what will happen

A - We cannot remove an element from set.

B - Method is executed but no exception is raised.

C - Key error is raised.

D - There doesn’t exist such method as remove.

Answer:C

Explanation:

since there is no such element in the set, so key error is raised

Q 5 - What is output of following

print("abbzxyzxzxabb".count(‘abb’,-10,-1))

A-2

B-0

C-1

D-Error

Answer:B

Explanation:

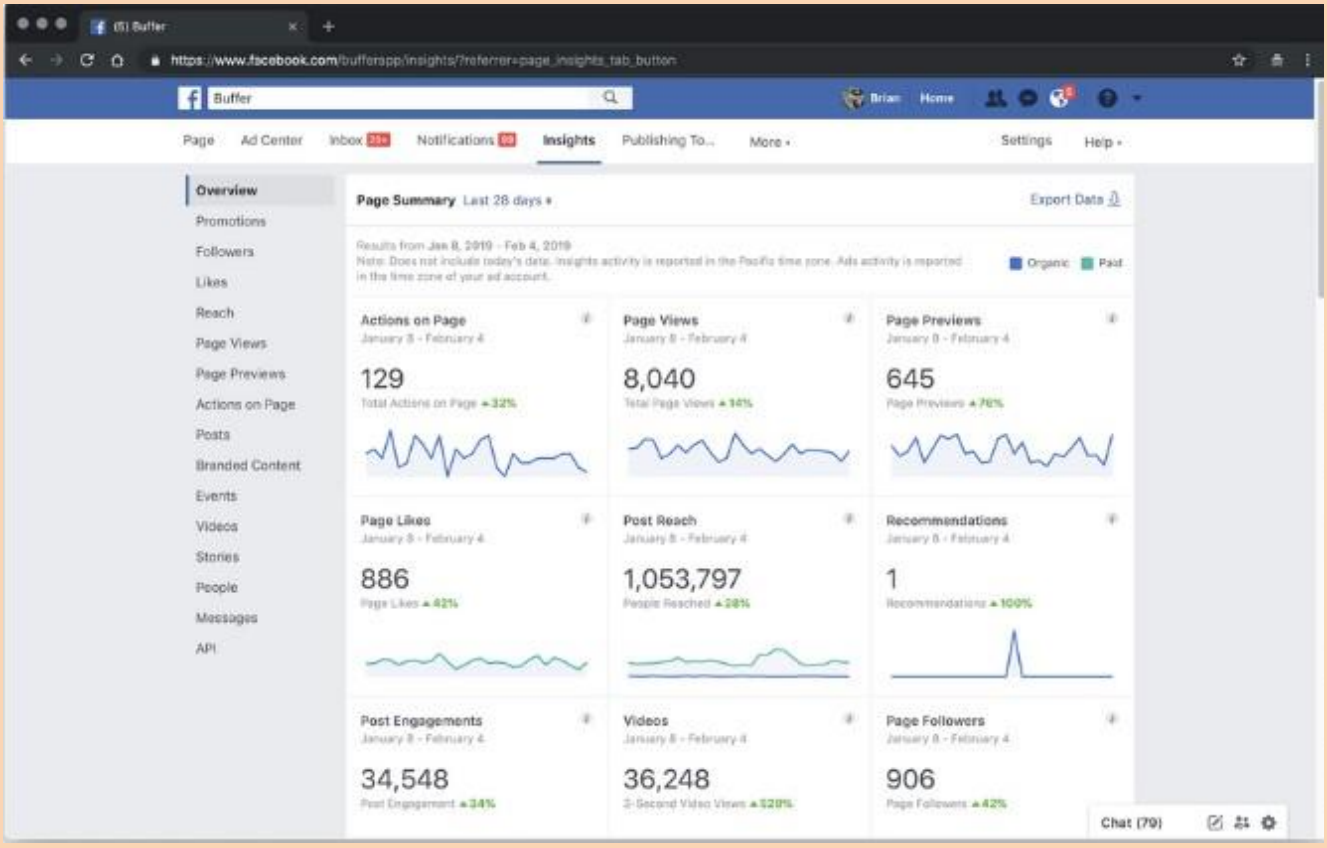
It Counts the number of times the substring ‘abb’ is present starting from position 2 and ending at position 11 in the given string

oll no:188T1A0521

II/IV B.Tech

# SOcIaL MEDIa TOOLs

# FacEbOOK aNaLyTIcs



Under the Insights tab on your Facebook Page, there is just so much information. Everything you ever wanted to know about your engagement, number of likes and followers, how your posts are doing, and, of course, Facebook’s Pages to Watch which lets you compare the performance of your Page and posts with similar Pages on Facebook.

You also get insights for Facebook Groups so if you run a Group definitely check those out

Roll no:188t1a0522

II/IVB.Tech

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