

**ONLINE FACULTY DEVELOPMENT PROGRAMME**

*on*

**ROBUST AND SCALABLE WEB APPLICATION DEVELOPMENT USING PYTHON**

**(September 21-25, 2020)**

*Sponsored by*

**AICTE TRAINING AND LEARNING (ATAL) ACADEMY**

AICTE Training and Learning (ATAL) Academy sponsored online Faculty Development Programme (FDP) on “**Robust and Scalable Web Application Development using Python**” is organized by Department of Information Technology, Sree Vidyanikethan Engineering College (Autonomous), Tirupati, Andhra Pradesh, India during September 21-25, 2020. An amount of Rs. 93000.00 (Rupees Ninety Three Thousands only) is sanctioned to **Dr. V. Lokanadham Naidu** on August 08, 2020 (F. No.: AICTE-SCRO/ATAL/2020-21/947(32)) for organizing the FDP.

The online FDP is conducted using the Google meet conference. A total of 177 participants from 15 states of the country participated in the FDP. The participants are the faculty and research scholars of various engineering colleges and government institutions across the country. Further, the participants are trained by the industry experts from IBM, Accenture and Infosys. The experts conducted hands-on based training virtually on various aspects of web application development using Python. The FDP has received an overwhelming response from the participants. A total of 14 sessions are conducted. Out of 14, 13 are technical sessions and one is on “Mental & Emotional Development and Stress Management” to promote the FIT INDIA movement across the country.

The main objective of the FDP is to provide insights and hands-on training for faculty on Python Programming to write server-side scripting; Python template engines to render responses from the server, Python web application frameworks to deploy applications for processing the user requests and data management to develop robust and scalable web applications.

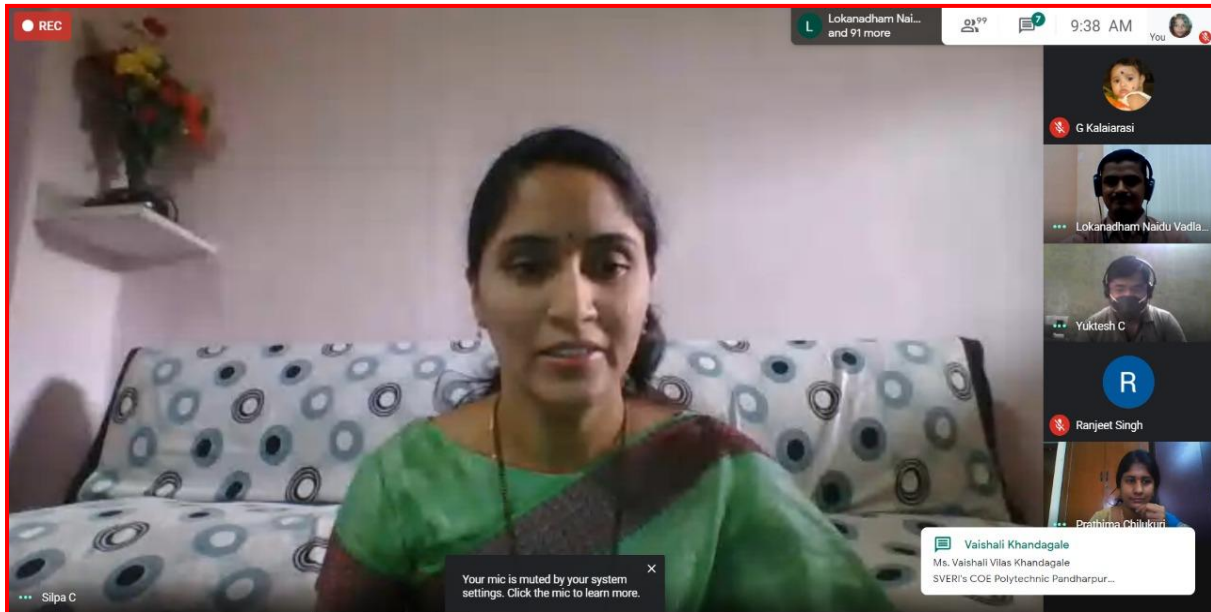
The outcomes of FDP are as follows:

- ❖ Gain knowledge on Python Programming, Python template engines and frameworks.
- ❖ Develop robust and scalable web applications using Python frameworks.
- ❖ Train students by conducting hands-on sessions on web application development using Python and make the students industry ready.

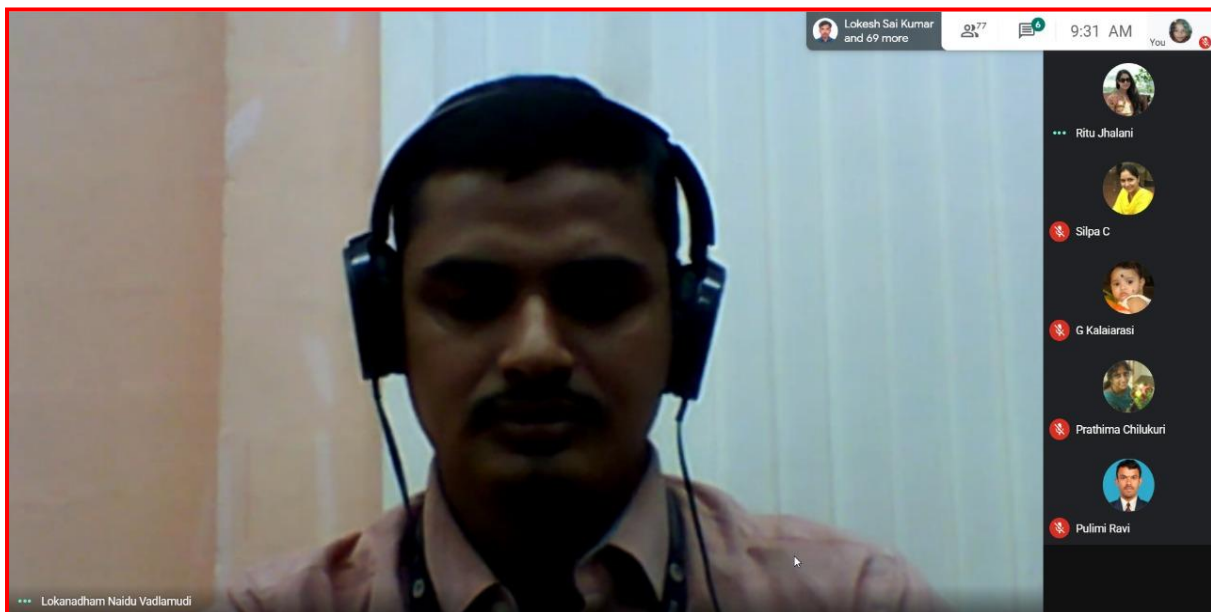
The inaugural function of the online FDP is scheduled on September 21, 2020 at 9:30 AM.

In the inaugural function, **Ms. C. Silpa**, Assistant Professor (SL), Department of Information Technology welcomed the chief guest **Mr. Yuktresh Chintamakada**, Developer Advocate, IBM India Pvt. Ltd, Hyderabad, and all the participants to the online FDP. The event is started with a prayer song.

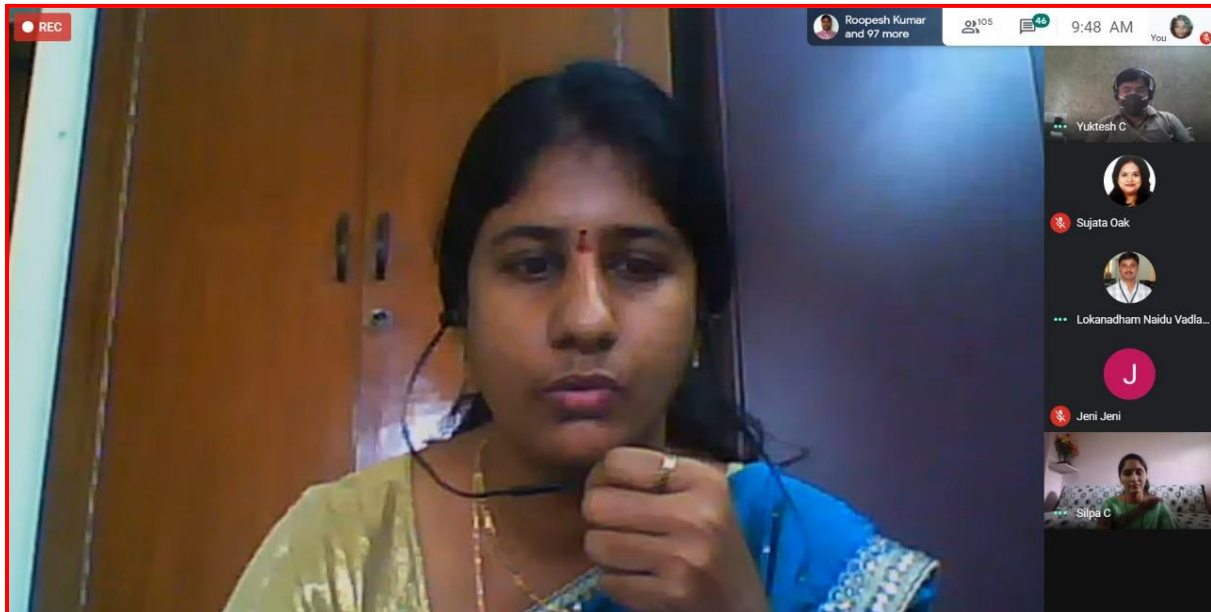
**Dr. V. Lokanadham Naidu**, Coordinator of ATAL FDP given the welcome speech. In the welcome speech, the coordinator welcomed the chief guest, participants and also thanked the ATAL academy for sponsored the FDP. Further, the coordinator highlighted the objectives of the FDP, the topics to be discussed, the various applications of Python programming and the outcomes of the FDP. Later, **Ms. Ch. Prathima**, Assistant Professor, Department of Information Technology introduced the chief guest **Mr. Yuktresh Chintamadaka** to the participants.



**Ms. C. Silpa**, Assistant Professor, Department of IT is welcoming the chief guest and the participants.



**Dr. V. Lokanadham Naidu**, Coordinator of ATAL FDP is giving the welcome speech.



**Ms. Ch. Prathima**, Assistant Professor, Department of IT is introducing the chief guest **Mr. Yuktेश Chintamadaka** to the participants.



**Mr. Yuktेश Chintamadaka**, Developer Advocate, IBM India Pvt. Ltd. is addressing the participants.

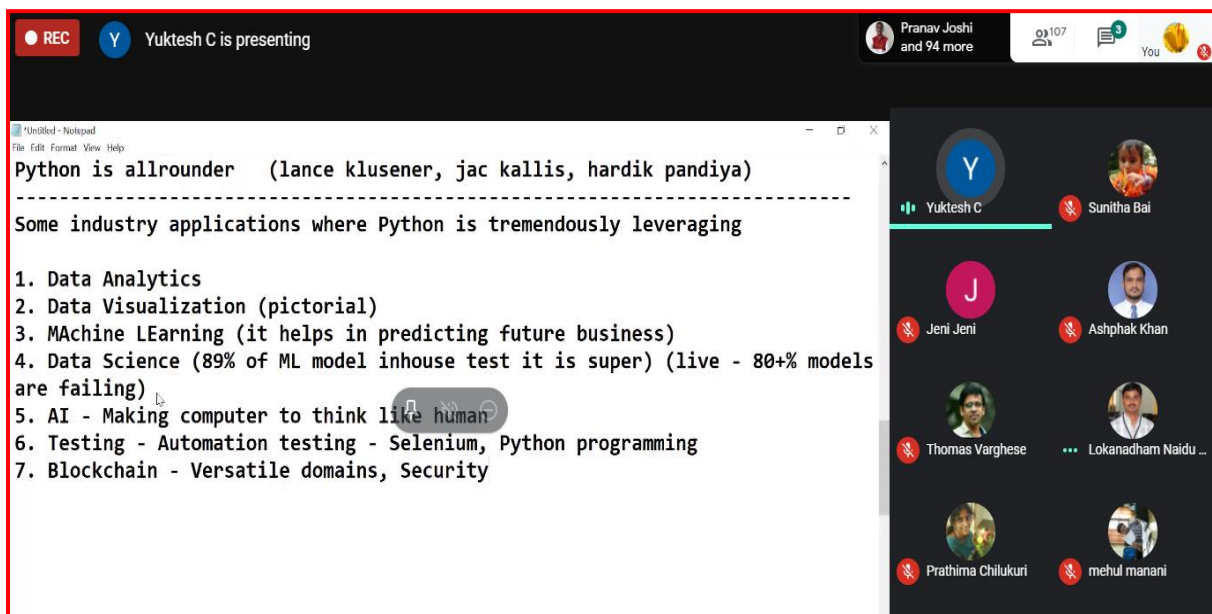
**Mr. Yuktेश Chintamadaka** has emphasized the skills that can gain by the participants after learning the python concepts and the related frameworks such as Flask and Django to develop web applications.

The details of technical sessions are as follows.

### September 21, 2020 (Day – 1, Session – 1)

**Mr. Yuktेश Chintamakada**, Developer Advocate, IBM India Pvt. Ltd, Hyderabad acted as a resource person for all three sessions of Day-1 to deliver the fundamental concepts of Python programming. The first session of Day-1 is started at 10:00 AM. The participants are trained on the following concepts of Python programming.

- History of Python and the features of Python Programming
- Installation, Memory management and Data Storage
- Math for Python
- Input Output operations
- Control Statements

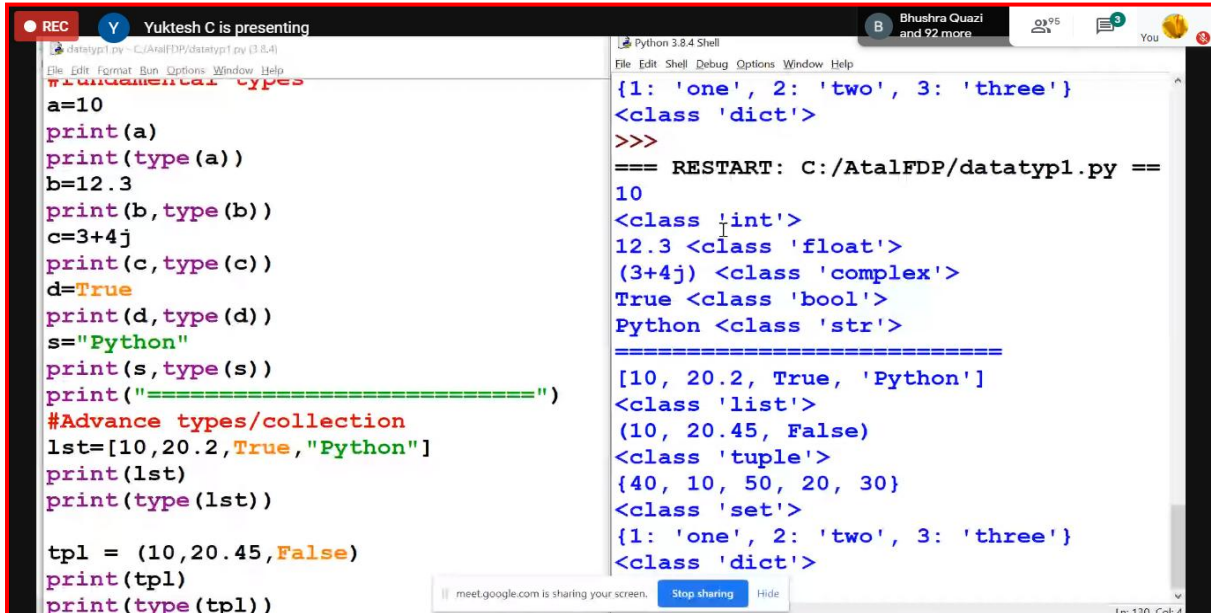


**Mr. Yuktेश Chintamakada** is explaining the applications of Python.

### September 21, 2020 (Day – 1, Session – 2)

The second session of Day-1 is started at 11:30 AM. In this session, **Mr. Yuktेश** discussed the functional programming and data structures of Python. The participants were introduced with the practical examples of the following concepts of Python programming.

- Introduction, Functions as objects
- Lambdas, Generators, Decorators
- List, Tuple, Set and Dictionary



```

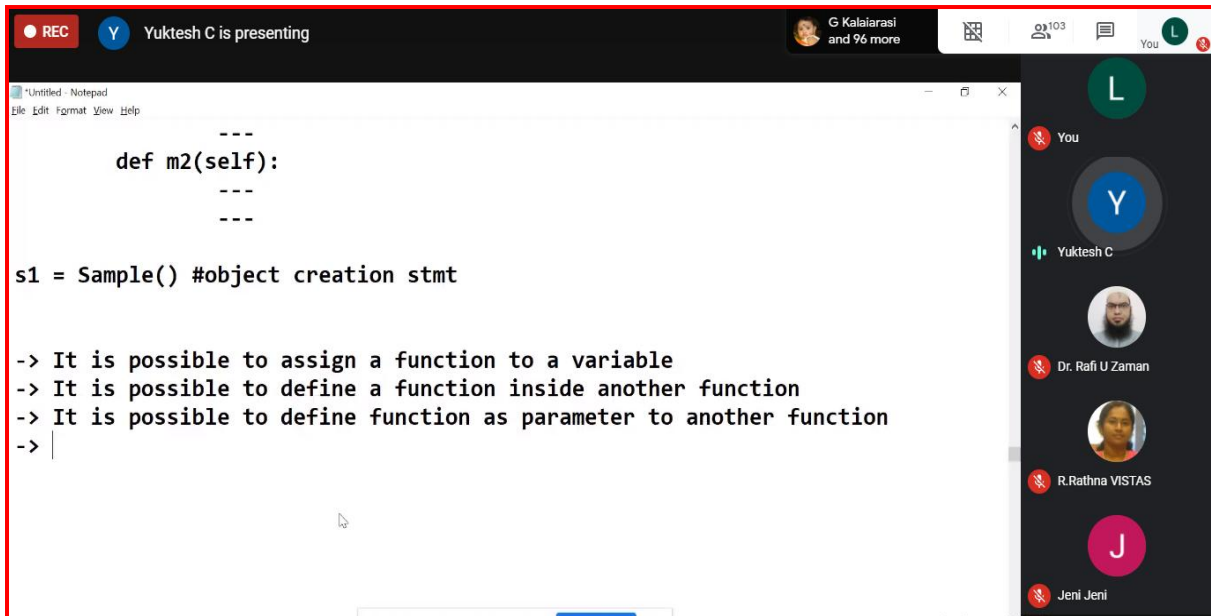
Fundamental types
a=10
print(a)
print(type(a))
b=12.3
print(b,type(b))
c=3+4j
print(c,type(c))
d=True
print(d,type(d))
s="Python"
print(s,type(s))
print("=====")
#Advance types/collection
lst=[10,20.2,True,"Python"]
print(lst)
print(type(lst))

tpl = (10,20.45,False)
print(tpl)
print(type(tpl))
  
```

```

Python 3.8.4 Shell
{1: 'one', 2: 'two', 3: 'three'}
<class 'dict'>
>>>
=== RESTART: C:/AtalFDP/datatyp1.py ===
10
<class 'int'>
12.3 <class 'float'>
(3+4j) <class 'complex'>
True <class 'bool'>
Python <class 'str'>
=====
[10, 20.2, True, 'Python']
<class 'list'>
(10, 20.45, False)
<class 'tuple'>
{40, 10, 50, 20, 30}
<class 'set'>
{1: 'one', 2: 'two', 3: 'three'}
<class 'dict'>
  
```

Mr. Yuktesh Chintamadakais demonstrating the basic types of Python using the IDLE.



```

---
def m2(self):
---
---
s1 = Sample() #object creation stmt
  
```

-> It is possible to assign a function to a variable  
-> It is possible to define a function inside another function  
-> It is possible to define function as parameter to another function  
-> |

Mr. Yuktesh Chintamadakais explaining the functions of Python.

```

#for-else
#search for given element from the list
lst=[12,56,23,98,65,34,13,42,15] #class list
n = int(input("Enter your search element:"))
for i in lst:
    if i==n: #first element is search
        print("Search element found")
else:
    print("Element not found")#no more search
    
```

```

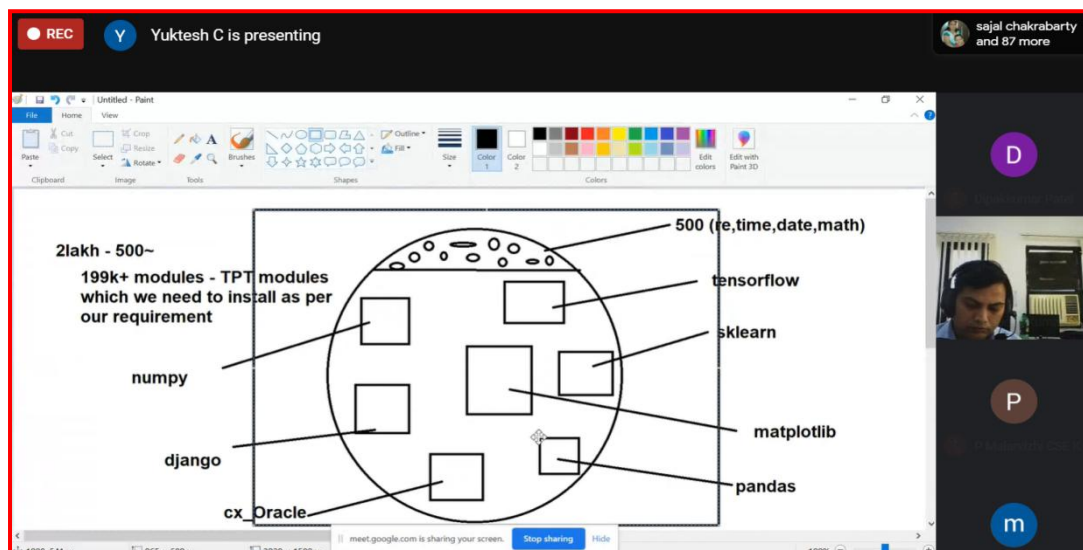
Python 3.8.4 Shell
>>>
Enter your search element:
Enter your search element:1000
Element not found
>>>
Restart: C:/AtalF
Enter your search element:
    
```

Mr. Yuktेश Chintamadaka is showing the practical examples on data structures of Python.

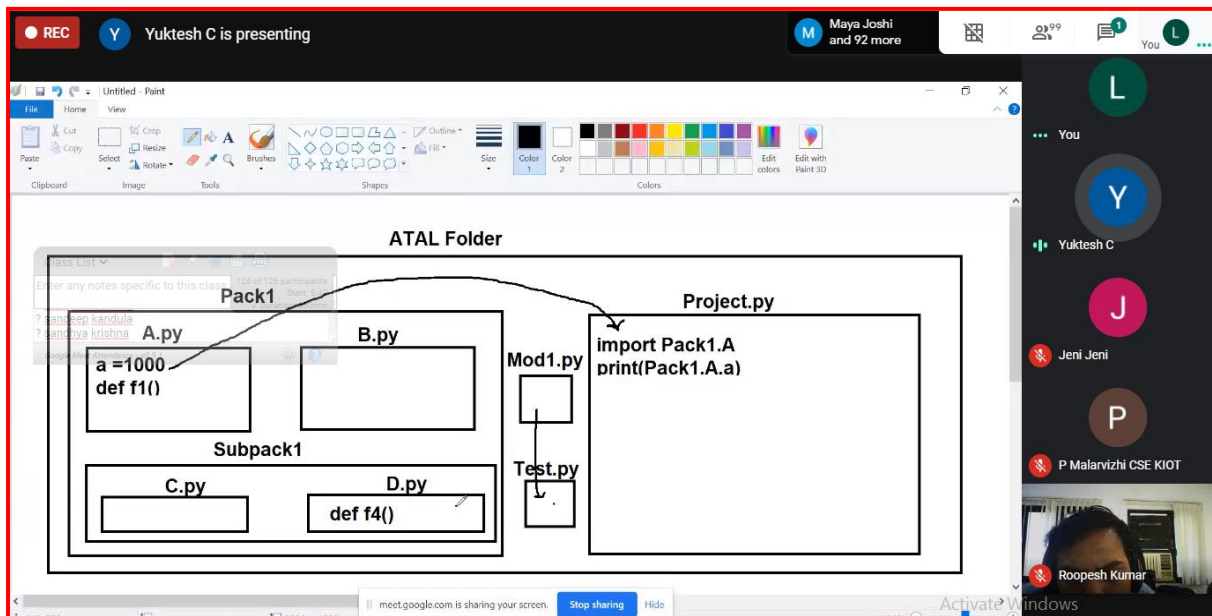
### September 21, 2020 (Day – 1, Session – 3)

The final session of Day-1 is started at 2:30 PM. In this session, **Mr. Yuktेश** explained the creation and usage of modules and packages of Python programming. The participants have gained the practical knowledge on the following concepts.

- How Module is different from Program
- Module Properties and Import types
- Installation of External Modules and packages



Mr. Yuktेश Chintamadaka is explaining the Python modules.



**Mr. Yuktesh Chintamadaka** is explaining the creation of packages and importing the packages.

### **September 22, 2020 (Day – 2, Session – 1)**

**Ms. Pradeepthi Duggaraju**, Sr. AI Developer, SmartBridge Pvt. Ltd., Hyderabad acted as a resource person for the first two sessions of Day-2. **Ms. C. Silpa**, Assistant Professor, Department of IT introduced **Ms. Pradeepthi Duggaraju** to the participants. **Ms. Pradeepthi** has conducted the sessions on advanced concepts of Python Programming. The first session of Day-2 was started at 9:30 AM. In this session, **Ms. Pradeepthi** explained the implementation of object oriented programming concepts using Python. The participants have gained the practical knowledge on the following concepts.

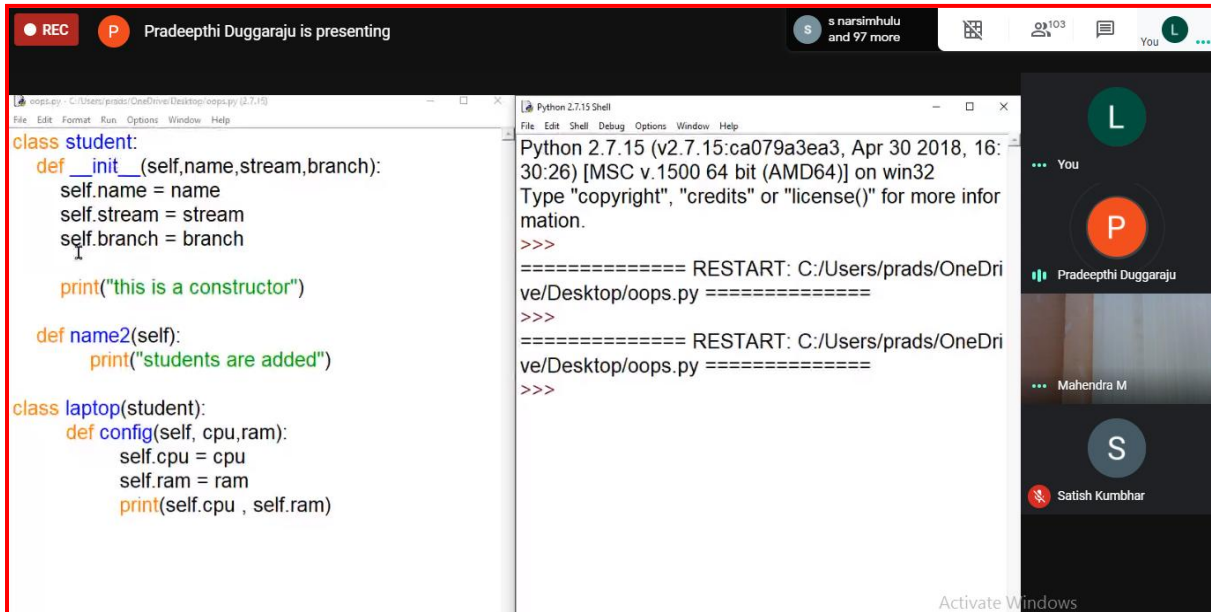
- Encapsulation, Inheritance
- Polymorphism, Abstraction

### **September 22, 2020 (Day – 2, Session – 2)**

The second session of the Day-2 was started at 11.30 AM. In this session, **Ms. Pradeepthi** has demonstrated the following concepts.

- Working with Files – file types, modes, read and write operations
- Exception Handling
- Data analysis using Pandas





```

class student:
    def __init__(self,name,stream,branch):
        self.name = name
        self.stream = stream
        self.branch = branch

        print("this is a constructor")

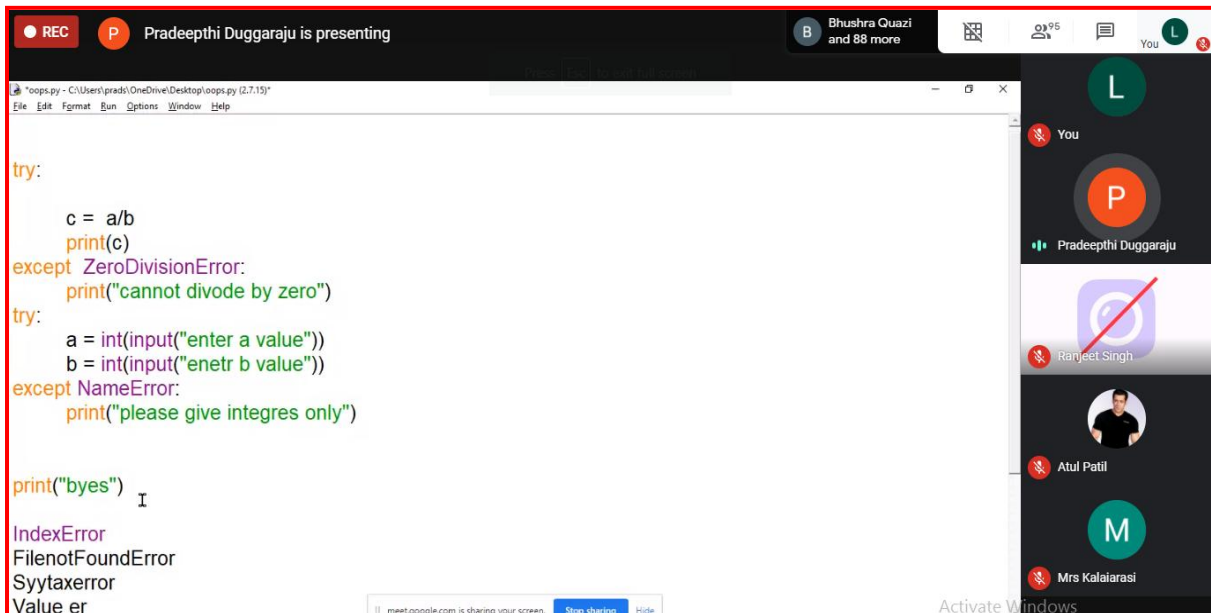
    def name2(self):
        print("students are added")

class laptop(student):
    def config(self, cpu,ram):
        self.cpu = cpu
        self.ram = ram
        print(self.cpu , self.ram)

```

Python 2.7.15 Shell  
Python 2.7.15 (v2.7.15:ca079a3ea3, Apr 30 2018, 16:30:26) [MSC v.1500 64 bit (AMD64)] on win32  
Type "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: C:/Users/prads/OneDrive/Desktop/oops.py =====  
>>>  
===== RESTART: C:/Users/prads/OneDrive/Desktop/oops.py =====  
>>>

**Ms. Pradeepthi Duggaraju** is showing the practical examples on Python classes.



```

try:
    c = a/b
    print(c)
except ZeroDivisionError:
    print("cannot divide by zero")
try:
    a = int(input("enter a value"))
    b = int(input("enetr b value"))
except NameError:
    print("please give integres only")

print("byes")

```

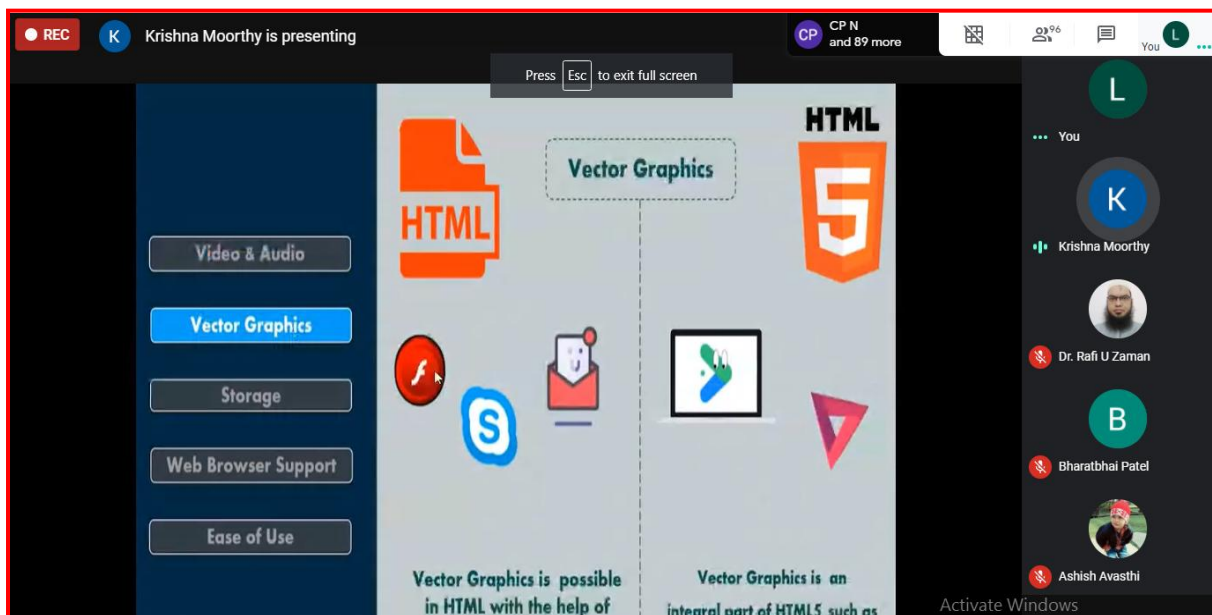
IndexError  
FileNotFoundError  
Syytaxerror  
Value er

**Ms. Pradeepthi Duggaraju** is exhibiting the practical examples on exception handling using Python.

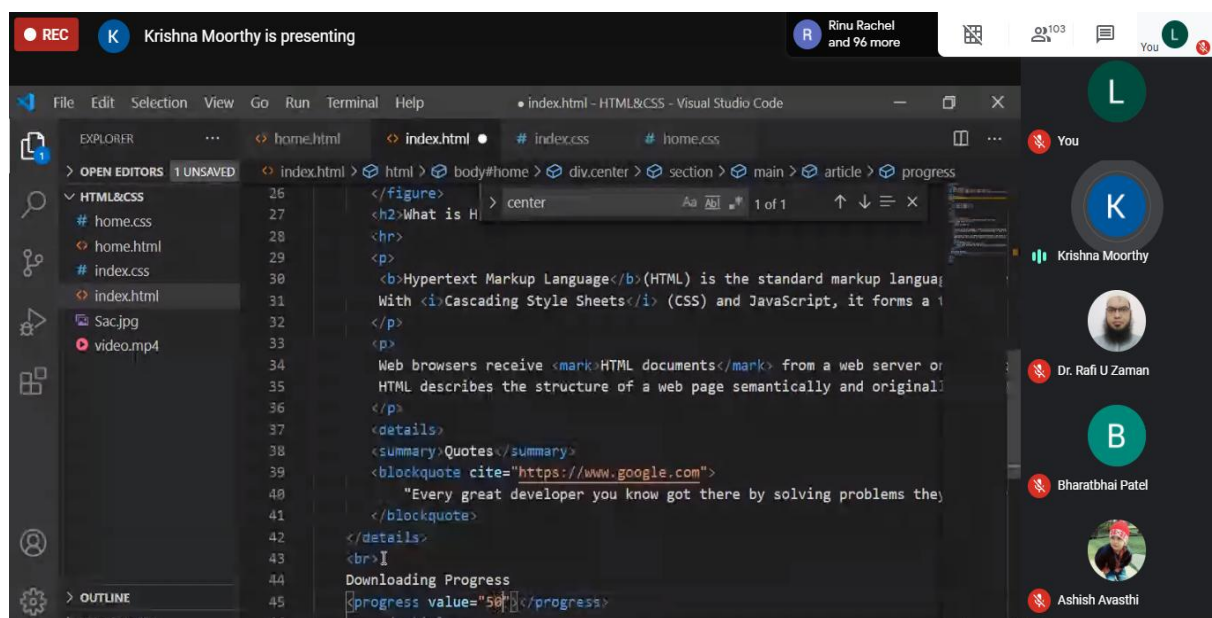
### September 22, 2020 (Day – 2, Session – 3)

**Mr. Krishna Vankatraman**, Application Development Sr. Analyst, Accenture, Chennai acted as a resource person. The session was started at 2.00 PM. **Ms. Ch. Prathima**, Assistant Professor, Department of IT introduced the resource person to the participants.

In this session, **Mr. Krishna** has delivered a lecture on HTML5 and CSS3. He explained the various tags and styles that are used to design the static web pages. In addition, **Mr. Krishna** practically shown the design of a simple web page that include forms, styles, Google map view and other controls that help the participants to gain practical knowledge on HTML5 and CSS3.



**Mr. Krishna Vankatramanis** explaining the features of HTML5.



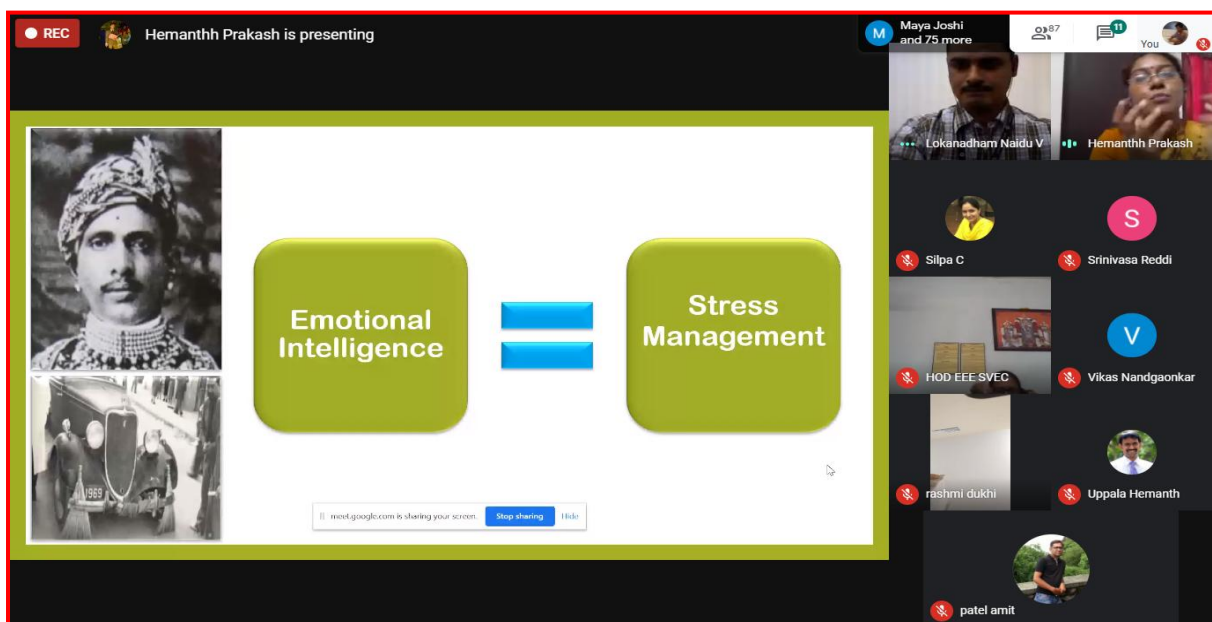
**Mr. Krishna Vankatramanis** demonstrating the web page design using HTML and CSS.

**September 23, 2020 (Day – 3, Session – 1)**

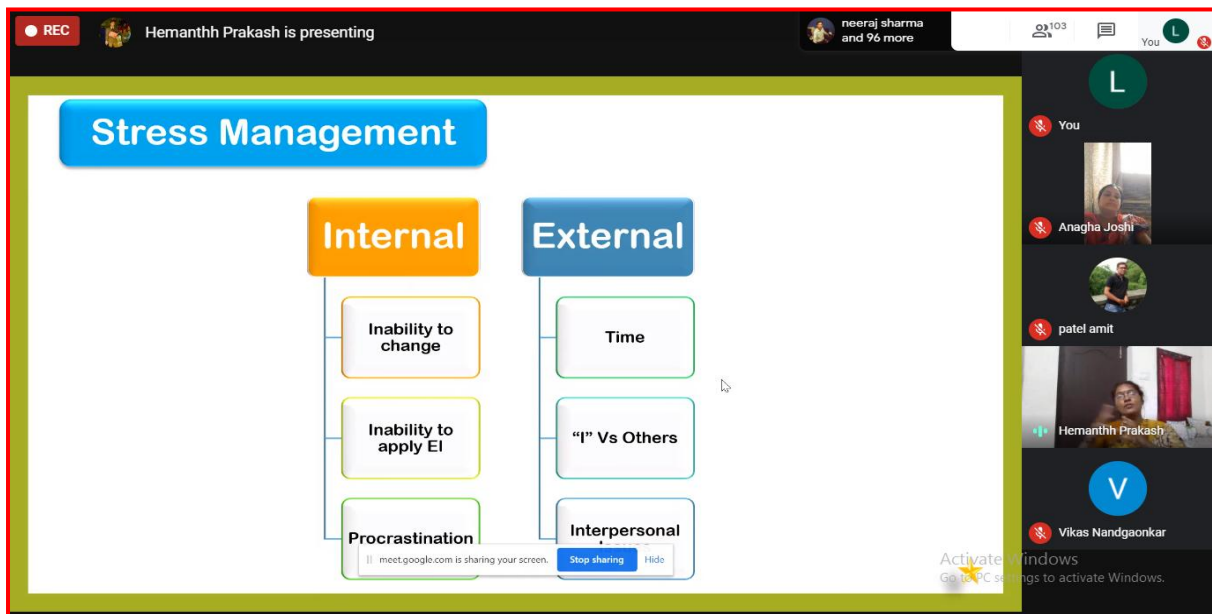
The first session of the Day-3 was started at 10:00 AM. As a part of FIT INDIA movement and to promote it across the country, the session on “**Mental & Emotional Development and Stress Managent**” is conducted. This session was delivered by **Dr. B. Anitha**, Assistant Professor (SL), Department of BS and H, Sree Vidyanikethan Engineering College (Autonomous), Tirupati. **Ms. C. Silpa**, Assistant Professor, Department of IT introduced the resource person to the participants.

**Dr. B. Anitha** explained the following:

- Strategies of emotional intelligence include self-awareness, self-management, social awarness and relationship management.
- Positive and negative emotions.
- Stress management strategies include controlling thoughts, goal setting, time management, task priority and realistic deadline settings, regular excercises and relaxing techniques.



**Dr. B. Anitha** is explaining the emotional intelligence.



Dr. B. Anitha is explaining stress management.

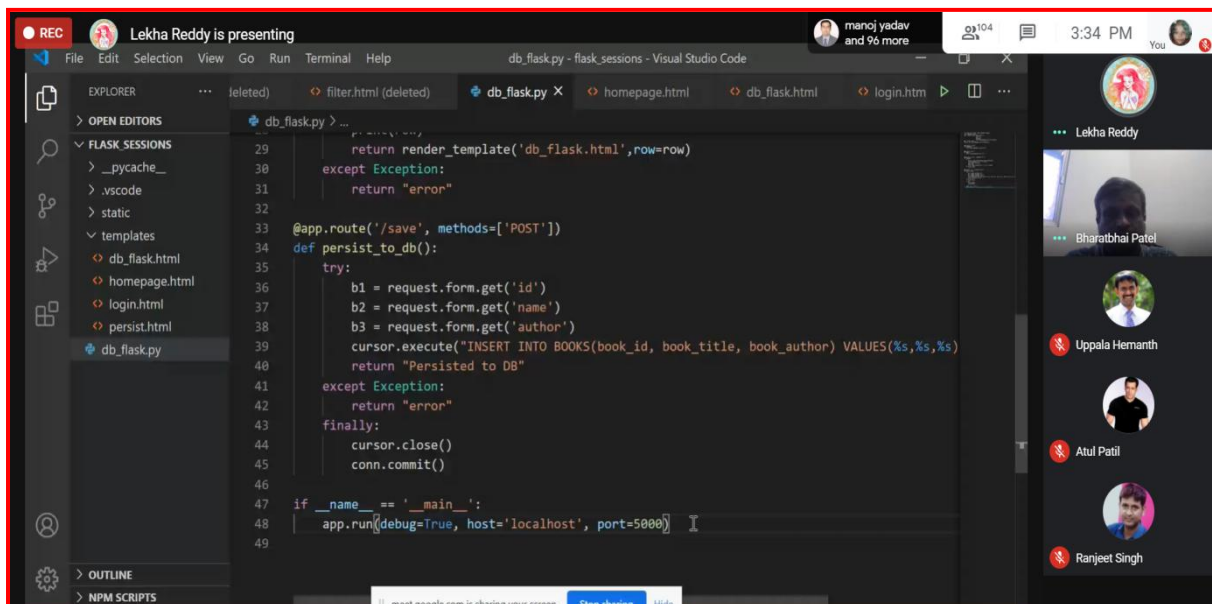
### September 23, 2020 (Day – 3, Session – 2)

The session 2 of the Day-3 was started at 2:00 PM. **Ms. Sushma Madduluri**, Application Development Team Lead, Accenture, Hyderabad acted as a resource person. She delivered a session on "JavaScript, AZAX and Bootstrap". **Dr. V. Lokanadham Naidu**, Coordinator of ATAL FDP introduced the resource person to the participants. **Ms. Sushama** shown practical examples on JavaScript, AZAX and Bootstrap to validate the web pages, execution of some part of the web page and setting page resizes to display web pages based on the device screen resolution respectively.

### September 24, 2020 (Day – 4, Session – 1)

**Ms. P. SreeLekha**, System Engineer, Infosys, Bangalore acted as a resource person for all three sessions of Day-4 to deliver the Flask – a web micro framework and Jinja2 template engine for developing/deploying web applications and redering the server response respectively. The first session of Day-4 was started at 9:30 AM. **Dr. V. Lokanadham Naidu**, Coordinator of ATAL FDP introduced the resource person to the participants. In this session, the participants have gained the partical knowledge on the following:

- Flask Installation and environment setup.
- Creation of Flask application structure
- Routing, URL Building, Rendering Templates Accessing the Request Data, Request Object, Redirects
- Develop/Deploy a simple web application using Flask

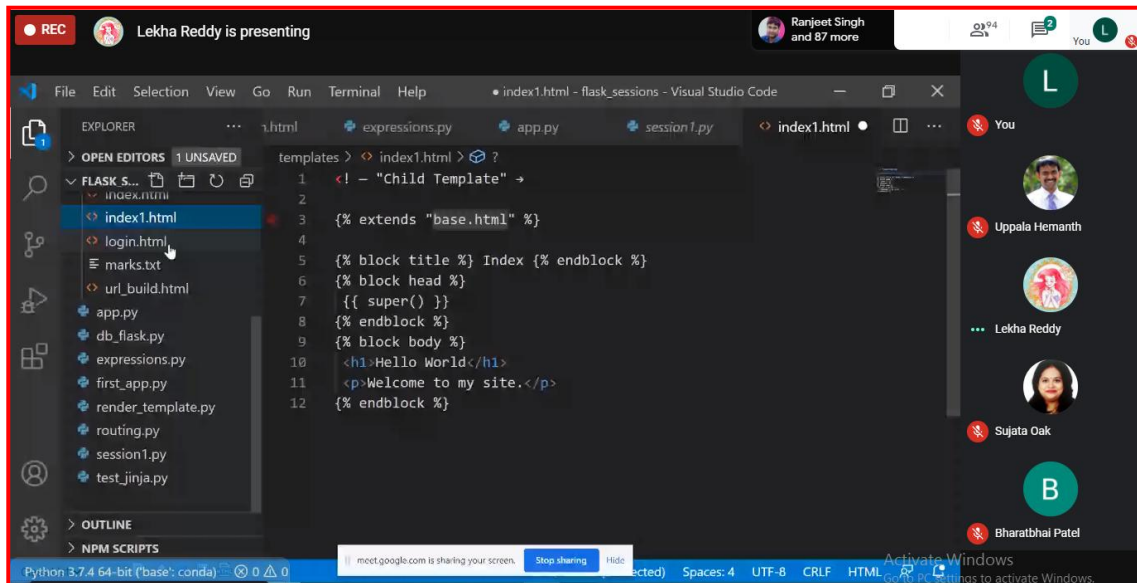


The screenshot shows a Zoom meeting interface. On the left, a code editor displays Python code for a Flask application. The code includes a route for '/save' that uses request.form to get 'id', 'name', and 'author' fields, and then inserts them into a database table named 'BOOKS'. The code also includes error handling and a main function to run the application on localhost. On the right, a list of participants is visible, including Lekha Reddy, Bharatbhai Patel, Uppala Hemanth, Atul Patil, and Ranjeet Singh. The meeting title is 'Lekha Reddy is presenting' and the time is 3:34 PM.

**Ms. P. Sree Lekha** is explaining the request object to access the user data.

The session 2 of the Day-4 was started at 11:30 AM. In this session, the participants have introduced the concepts of Jinja2 template engine. The resource person demonstrated the practical examples using Jinja2 for rendering the server response in the form of HTML. The topics that are discussed in this session are:

- Delimiters, expressions, objects
- Conditional and looping statements.
- Rendering of responses from the server Jinja filters, super blocks and Template inheritance



**Ms. P. Sree Lekha** is explaining the concepts of Jinja2 template engine.

The session 3 of the Day-4 was started at 2:00 PM. In this session, the resource person explained the database concepts to store and retrieve the data. **Ms. Sree Lekha** demonstrated the connection establishment to the MySQL database server using the Python code. And also, she demonstrated the creation of database tables, data insertion and data access. The topics that are discussed in this session are:

- Connection establishment
- Data storing and accessing
- Rendering of database data using Jinja2 templates

### **September 25, 2020 (Day – 5, Session – 1)**

**Mr. YuktेशChintamakada**, Developer Advocate, IBM India Pvt. Ltd, Hyderabad acted as a resource person for all three sessions of Day-5 to demonstrate the Django web framework concepts for the development of web applications. The first session of Day-5 was started at 9:30 AM. In this session, **Mr. Yuktेश** explained the following concepts of Django to the participants.

- Pre-requisites for Django
- Introduction of Django
- Django Installation and Configuration
- Django Architecture
- Create your First Project in Django
- Understanding Project Directories

REC Yuktesh C is presenting

Untitled - Notepad

Web Application building using Django: (D is Silent)

-----

-> Prerequisites to build a web app using Django

1. Python programming (Django is a Python web framework)
  - Basics
  - Functions
  - Modules & Packages (Directories)
  - Class & Object (OOPS)
  - Installing 3rd party modules (pip install pandas)
2. A Client side technology - HTML
3. Working with a Database. (Mysql (opensource), Oracle (large Marketshare))

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Activate Windows

Mr. YukteshChintamakada is explaining the pre-requisites that are required to develop the web applications using Django.

REC Yuktesh C is presenting

Ms. Minal D. Shahakar D... and 79 more

django

Web Browser

Caching Framework URL Dispatcher

Template

View

Model

Database

1. The URL dispatcher (urls.py) maps the requested URL to a view function and calls it. If caching is enabled, the view function can check to see if a cached version of the page exists and bypass all further steps, returning the cached version. Instead, note that this page-level caching is only one available caching option in Django. You can cache more granularly, as well.
2. The view function (usually in views.py) performs the requested action, which typically involves reading or writing to the database. It may include other tasks, as well.
3. The model (usually in models.py) defines the data in Python and interacts with it. Although typically contained in a relational database (MySQL, PostgreSQL, SQLite, etc.), other data storage mechanisms are possible as well (XML, text files, LDAP, etc.).

5. Templates typically return HTML pages. The Django template language offers HTML authors a simple-to-learn syntax while providing all the power needed for presentation logic.

4. After performing any requested tasks, the view returns an HTTP response object (usually after passing the data through a template) to the web browser. Optionally, the view can save a version of the HTTP response object in the caching system for a specified length of time.

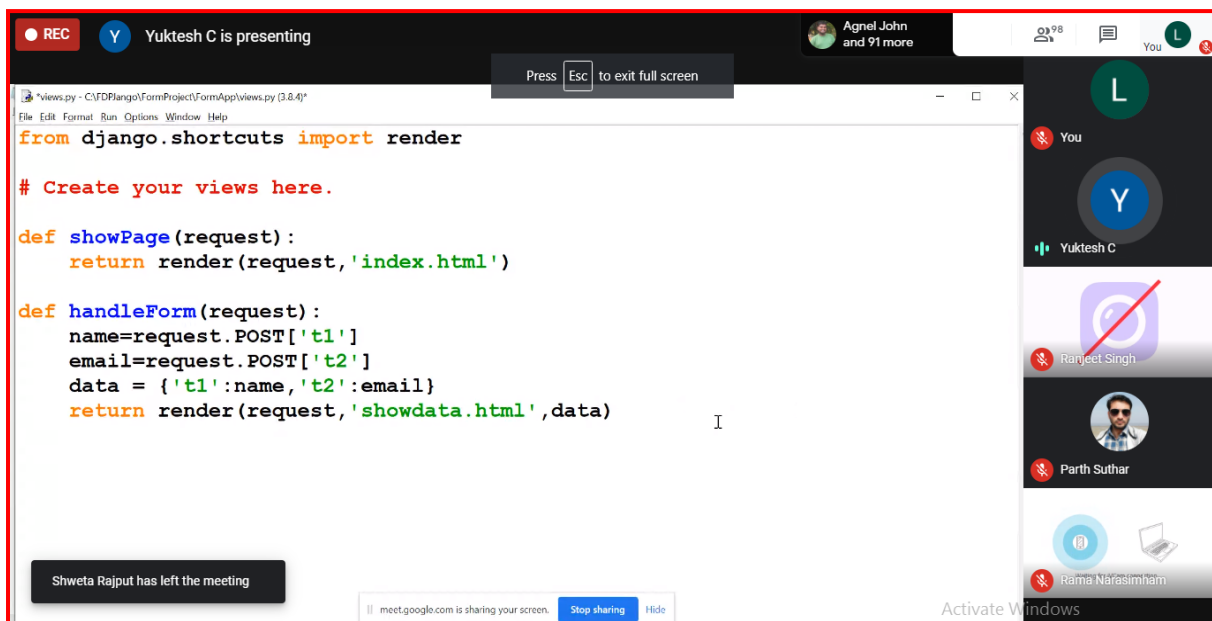
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Mr. YukteshChintamakada is explaining the architecture of Django.

### September 25, 2020 (Day – 5, Session – 2)

The second session of Day-5 was started at 11.30 AM. In this session, the participants have gain the knowledge on the folloiwng concepts of Django forms.

- Working with templates
- Working with login module
- performing client side validations



The screenshot shows a Google Meet window with a code editor open. The code editor displays the following Python code for Django views:

```
from django.shortcuts import render

# Create your views here.

def showPage(request):
    return render(request, 'index.html')

def handleForm(request):
    name=request.POST['t1']
    email=request.POST['t2']
    data = {'t1':name, 't2':email}
    return render(request, 'showdata.html', data)
```

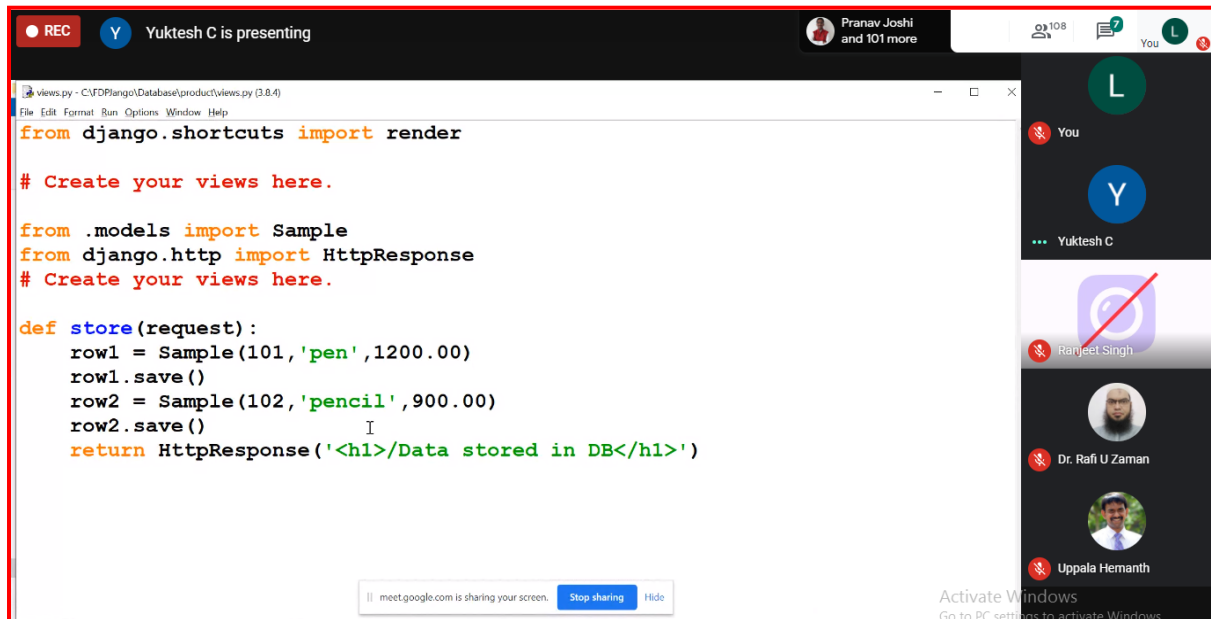
The meeting interface includes a top bar with 'REC', 'Yuktesh C is presenting', and 'Agnel John and 91 more'. A right sidebar shows participant avatars for 'You', 'Yuktesh C', 'Ranjeet Singh', 'Parth Suthar', and 'Rama Narasimham'. A bottom status bar indicates 'Shweta Rajput has left the meeting' and 'meet.google.com is sharing your screen'.

Mr. YukteshChintamakada is showing the practical example to access the form data using Django framework.

### September 25, 2020 (Day – 5, Session – 3)

The last session of Day-5 was started at 2:00 PM. In this session, the resource person given inputs to the participants about oracle database configuratoin, Object Relationship Mapping and performing CRUD (Create, Read, Update and Delete) operations on Database models that help to develop web applications to store the data into the database and for retrieval.





```
views.py - C:\VDP\django\Database\product\views.py (3.8.4)
File Edit Format Run Options Window Help
from django.shortcuts import render

# Create your views here.

from .models import Sample
from django.http import HttpResponse
# Create your views here.

def store(request):
    row1 = Sample(101, 'pen', 1200.00)
    row1.save()
    row2 = Sample(102, 'pencil', 900.00)
    row2.save()
    return HttpResponse('<h1>Data stored in DB</h1>')
```

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Activate Windows  
Go to PC settings to activate Windows.

Mr. YukteshChintamakada is showing the practical examples on Django models.

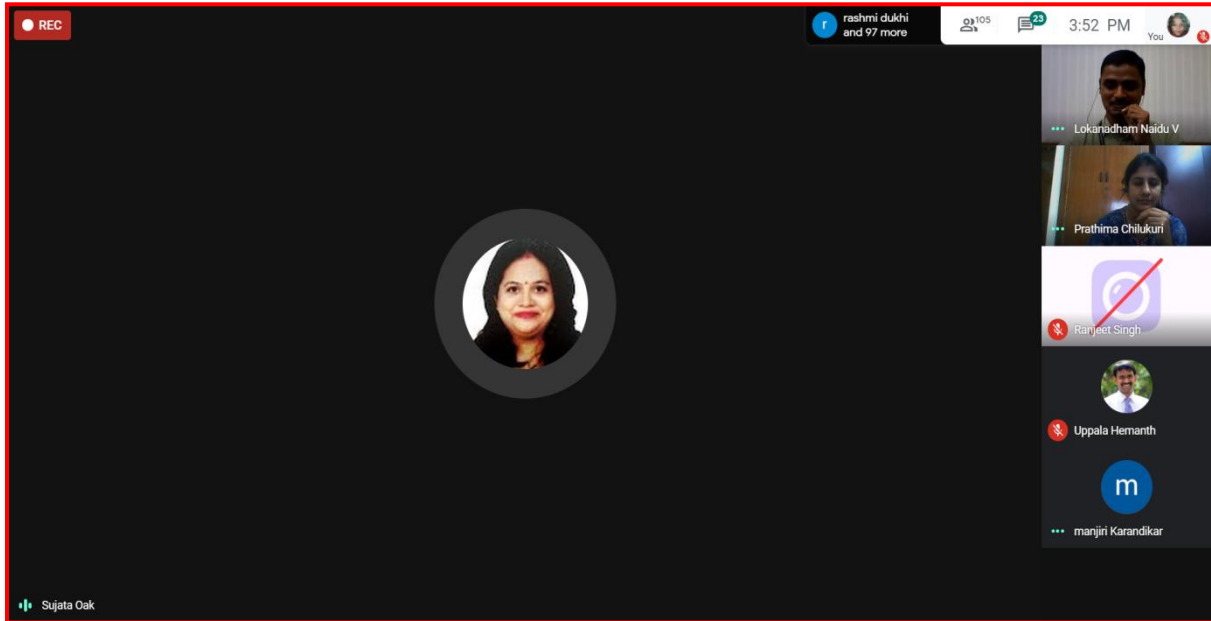
The valedictory function of AICTE Training and Learning (ATAL) Academy sponsored online Faculty Development Programme (FDP) on “**Robust and Scalable Web Application Development using Python**” was started at 3.45 PM on September 25, 2020. In the valedictory function, **Ms. Ch. Prathima** invited the chief guest **Mr. YukteshChintamakada**, Developer Advocate, IBM India Pvt. Ltd to share his views about the FDP. **Mr. Yuktesh** suggested the participants to practice the concepts that are learnt in the FDP which help in improving the personal skills as well as to train students. Further, he advised the participants to join in developers groups like meetup.com to improve the skills on various modules of Python to build efficient machine and deep learning models and also for a global exposure.



**Mr. Yuktेश Chintamakada** is sharing his views with the participants in the valedictory function.




**Mr. Bharatbhai Bhulabhai Patel** from G. H. Patel Post Graduate Department of Computer Science and Technology, Sardar Patel University, Gujarat is sharing a valuable feedback on the FDP.



**Ms. Sujata Oak** from Ramrao Adik Institute of Technology, Maharashtra is sharing valuable feedback on the FDP.

**Dr. V. Lokanadham Naidu**, Coordinator, ATAL FDP has proposed a Vote-of-Thanks. Initially, the coordinator thanked the Core team of ATAL for sponsoring the FDP to organize at national level and also for their suggestions, support and guidance to conduct the FDP. Later, he thanked the participants of various engineering colleges and government institutions across the country for their enthusiastic participation. At the end, he conveyed his heartfelt thanks to the management, Sree Vidyanikethan Engineering College (Autonomous), Tirupati, Andhra Pradesh, the Principal, Head of the Department, Information Technology, Mr. Mahendra, Co-coordinator for their constant support to make this event a grand success.

  
**Dr. V. Lokanadham Naidu**  
Coordinator, ATAL FDP (online)  
**Dr. V. LOKANADHAM NAIDU, M.E., Ph.D.**  
Associate Professor  
Dept. of Information Technology  
Sree Vidyanikethan Engineering College  
TIRUPATI - 517 102, A.P., India.