L D College of Engineering, Ahmedabad

Department of Information Technology

Academic Year :- 2021-22

GTU B.E. 7th Semester

3170001- Summer Internship

Subject / Topic : Python(Django)

INTRODUCTION TO ORGANIZATION

Akash Technolabs

K-6, Shree Krishna Center Above Crossword Library Mithakhali Six Road, Navrangpura Ahmedabad, Gujarat, India – 380009
https://akashtechnolabs.com/

Introduction

- It is a website development company ,with 11 years of experience ,which holds a reputed image among contemporaries. They always try to provide best services to their clients.
- Website development of their firm is completely unique and adorable as well as original. They care for the trust that their clients have in them and so they assure clients to keep their quality up to the mark. They work on various website development projects on an international level too.
- They also hire new developers and give them golden opportunity to show their work and talent.
- They also give SEO services and Social Media Marketing to their clients. At Akash Technolabs they have highly professional and experienced team of developers.

What they do ? :

- Mobile Development
- Dynamic Website Development
- PHP Development
- Laravel Development
- Node JS Development
- Angular JS Development
- React Native Development

On Which Technologies they work most:

- Python
- Angular
- Node Js
- React Native
- Laravel
- Android
- IOS and Flutter
- Php, MongoDB

Week 1

Day 1 :-

What we have learned ?:

- We learned basic Introduction of python programming language. In this we got basic idea about python like it is high-level, interpreted, object-oriented as well as scripting language.
- We also learned the most important and amazing features of python which may be the reason behind of its success at current technology driven.
    1. Easy to learn
    2. Easy to read
    3. Easy to maintain
    4. Portable
    5. Free and open source and object oriented
    6. Extensible and Embeddable
- We also came to know about in which field and which big-tech companies are using python to make their service effective.
- Trainer show how to install python setup and add to environment variable and run first program of hello world using notepad++ and command prompt.
- Then we learned about IDEs and Pycharm which is most usable IDE for python development. We also learned to install it and run our program of hello world in IDE (Pycharm).

Task: Make Simple Registration form in html using div/table tags.

- To complete this task, using div tags
- I also used bootstrap 4 as CSS framework to make this form good looking.
- I put 5 fields in this registration form.
    1. Name
    2. Email
    3. Contact No.
    4. Password
    5. Repeat Password
- Link : https://github.com/prakharninja0927/akash-internship-tasks/tree/main/task%201

Registration Form

Name

Enter name

Email address

Enter email

Contact

Enter contact

Password

Password

Repeat Password

repeat password

Submit

Day 2 :-

What we have learned ? :

- In today's session we get introduced to python variables, comments, and various data types and its methods.
- We learned mainly three ways to write down comments in python.
    1. Using (#)
    2. Using (‘’)
    3. Using (“””)
- Then we perform a task related to comments to make concept more clear practically.
- The we learned how name and declared variable that is used to store data in memory.
- Then we learned how to assign multiple variable and single value to multiple variable in single and perform task related to this.
- Then we get to know about standard data types of python programming language.
- We get small introduction and simple programs of all these datatypes.
- Some of these data types are very important in day to day life of any python developer like List, Tuple, Dictionary.
- Then we learned how to take a input from user with for loop and list method (lst.append(element))
- Then we learned various methods of tuple data type of python like wise we perform practicals of dictionary and its methods

Task: Python CRUD Operation using mysql.

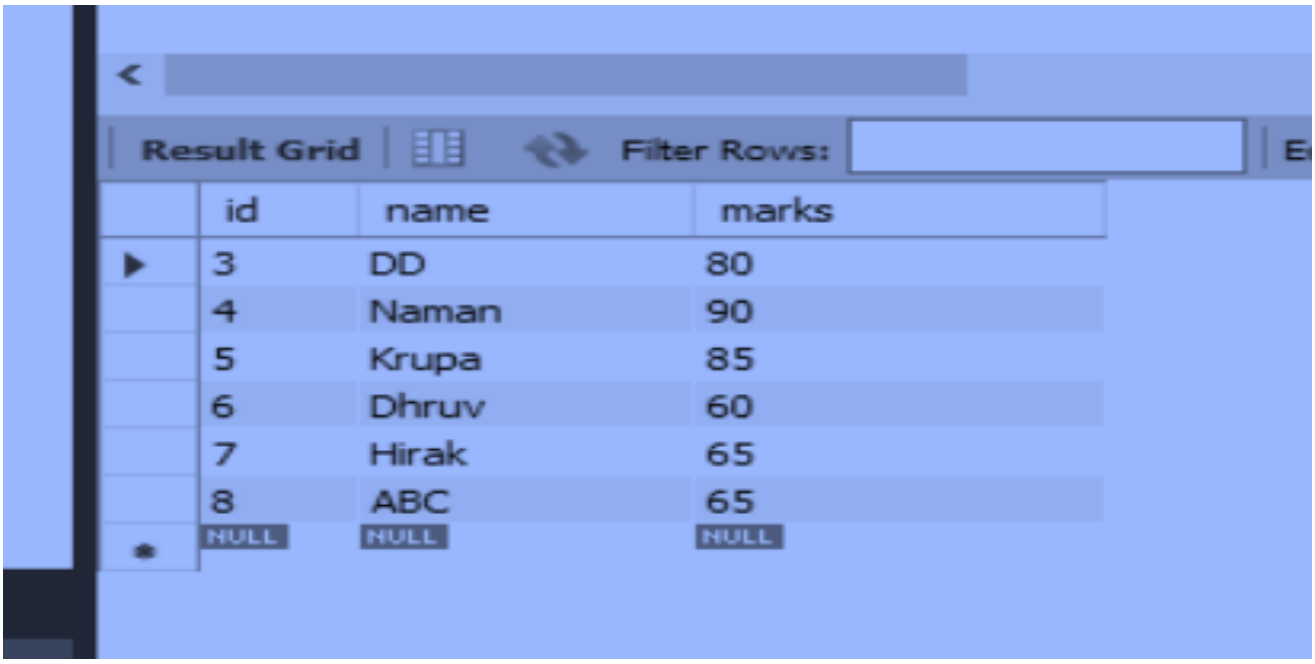
- I used mysql-connector-python library to accomplish this given task.

Link: https://github.com/prakharninja0927/akash-internship-tasks/tree/main/task%202

```
C:\Users\patel\Desktop\AkashTech\task 2>python crud.py
DB already exists
table already exists
choose option
1.insert data
2.read data
3.update data
4.delete data
enter your choice:1
-----We are inserting data-----
enter name:ABC
enter marks:65
insert into student(name,marks) values('ABC',65);

C:\Users\patel\Desktop\AkashTech\task 2>python crud.py
DB already exists
table already exists
choose option
1.insert data
2.read data
3.update data
4.delete data
enter your choice:2
-----retrive data-----
id name marks
3 DD 80
4 Naman 90
5 Krupa 85
6 Dhruv 60
7 Hirak 65
8 ABC 65

C:\Users\patel\Desktop\AkashTech\task 2>python crud.py
```



Day 3 :-

What we have learned ?:

- In this session we are introduced to Input/Output functions input() and print() and their syntax.
- Then we learned Conditional Statements.
    1. If statement.
    2. If….else statement.
    3. If…elif….else statement.
    4. Nestef If statement.
- After that we practice some programs of all these conditional statements like check number is even or odd / +ve or -ve.
- After conditional statements we got introduced by for loop and perform task of print 1 to 100 using loop.
- We also learned how to use for loop for range() and lists.
- Before that we learned syntax of range() and for loop.
- Then we got to know about statements used in for loop like continue and break as well as pass.
- While learning them we learned terminologies of these statements for when and why we use these.
- Onward we also learned how to use loop with else. when condition of loop get to false else statement execute.

Task:

1. Calculate average of 5 numbers.
2. Check whether number is even or odd.
3. Take a year and check whether it is leap year or not
4. Take a number and check whether it is zero, positive or negative.
5. Take 2 numbers and display greatest number. (Also check equal number condition)
6. Take a number and find factorial of that number.
7. Write a program to swap 2 numbers using third variable.
8. Take 2 numbers and find smallest number.
9. Take a number check if a number is less than 100 or not. If it is less than 100 then check if it is odd or even.
10. Take a number to print the square of a number if it is less than 10.
11. Take a number and check whether it is zero, positive or negative using nested IF...ELSE statement .
12. Take 3 numbers and find greatest number using nested IF....ELSE statement.
13. Take 3 numbers and find smallest number using logical operator.
14. Write a program to swap 2 numbers without taking third variable.
15. Take starting number and ending number from the user and print following series.

    30 27 24 21 18 15 12 9 6 3 0

Link: https://github.com/prakharninja0927/akash-internship-tasks/tree/main/task%203

```
C:\Windows\System32\cmd.exe

C:\Users\patel\Desktop\AkashTech\task 3>python t1.py
enter number 1 :12
enter number 2 :32
enter number 3 :43
enter number 4 :54
enter number 5 :23
average of numbers :32.8

C:\Users\patel\Desktop\AkashTech\task 3>python t2.py
enter any number20
num is even

C:\Users\patel\Desktop\AkashTech\task 3>python t2.py
enter any number11
num is odd

C:\Users\patel\Desktop\AkashTech\task 3>python t3.py
Enter a year: 2000
2000 is a leap year

C:\Users\patel\Desktop\AkashTech\task 3>python t3.py
Enter a year: 2001
2001 is not a leap year

C:\Users\patel\Desktop\AkashTech\task 3>python t4.py
enter number10
num is +ve

C:\Users\patel\Desktop\AkashTech\task 3>python t4.py
enter number0
num is 0

C:\Users\patel\Desktop\AkashTech\task 3>python t4.py
enter number-10
num is -ve
```

```
C:\Windows\System32\cmd.exe

C:\Users\patel\Desktop\AkashTech\task 3>python t5.py
enter num 1 :10
enter num 2 :20
20 is graterthan 10

C:\Users\patel\Desktop\AkashTech\task 3>python t5.py
enter num 1 :10
enter num 2 :10
both numbers are equal

C:\Users\patel\Desktop\AkashTech\task 3>python t6.py
enter number:5
factorial of 5 is 120

C:\Users\patel\Desktop\AkashTech\task 3>python t7.py
enter num 1 :10
enter num 2 :21
number 1 : 21
number 2 : 10

C:\Users\patel\Desktop\AkashTech\task 3>python t8.py
enter num 1 :10
enter num 2 :2
2 is smaller than 10

C:\Users\patel\Desktop\AkashTech\task 3>python t9.py
enter number :90
90 is even

C:\Users\patel\Desktop\AkashTech\task 3>python t9.py
enter number :87
87 is odd

C:\Users\patel\Desktop\AkashTech\task 3>python t9.py
enter number :121
121 is grater than 100
```

```
C:\Users\patel\Desktop\AkashTech\task 3>python t10.py
enter number :3
square is 3 is 9

C:\Users\patel\Desktop\AkashTech\task 3>python t10.py
enter number :5
square is 5 is 25

C:\Users\patel\Desktop\AkashTech\task 3>python t10.py
enter number :11
num is grater than 10

C:\Users\patel\Desktop\AkashTech\task 3>python t11.py
enter number10
10 is +ve

C:\Users\patel\Desktop\AkashTech\task 3>python t11.py
enter number0
number is zero

C:\Users\patel\Desktop\AkashTech\task 3>python t11.py
enter number-1
{} is -ve -1

C:\Users\patel\Desktop\AkashTech\task 3>python t12.py
enter num 1 :10
enter num 2 :10
Both number are equals

C:\Users\patel\Desktop\AkashTech\task 3>python t12.py
enter num 1 :10
enter num 2 :-21
10 is grater than -21
```

```
C:\Users\patel\Desktop\AkashTech\task 3>python t12.py
Enter num1: 10
Enter num2: 20
Enter num3: 3
Greater  =  20

C:\Users\patel\Desktop\AkashTech\task 3>python t13.py
Enter num1: 10
Enter num2: 20
Enter num3: 3
smallest  =  3

C:\Users\patel\Desktop\AkashTech\task 3>python t14.py
enter num 1 :10
enter num 2 :20
number 1 : 20
number 2 : 10

C:\Users\patel\Desktop\AkashTech\task 3>python t15.py
enter num:10
10,9,8,7,6,5,4,3,2,1,
C:\Users\patel\Desktop\AkashTech\task 3>python t15.py
enter num:10
10,9,8,7,6,5,4,3,2,1,0,
C:\Users\patel\Desktop\AkashTech\task 3>
```

Day 4 :-

What we have learned ? :

- On this day we learned the most important feature of any programming language which is also extended in Python too which is “Functions”
- In today’s session we get to know about moto behind usage of function which is to perform specific task of any program.
- Then we learned syntax of defining function in python programming language.
- Any function is divided in small parts
    1. “def” keyword
    2. Function name
    3. (arguments)
    4. “:” symbol
    5. Function “body”.
    6. Return statement (optional)
- We also learned about three different types of arguments which can be provided in python function
    1. Default arguments
    2. Keyword arguments
    3. Variable-Length arguments
- We perform all types of arguments program to understand well and this helps us in remembering for long time.
- We also learned about non keyword arguments as well as keyword arguments where in non keyword we provide arguments without using argument name where as in keyword arguments we provide arguments name which is defined in calling function.
- Then after we get the information about Scope of variable which is mainly two typed 1
    1. Global Variable
    2. Local variable
- Variables that are defined inside a function body have a local scope, and those defined outside have a global scope.
- We also get the information about ‘indentation error: expected an indented block’
- After that we get to know about module functionality of python programming.
- That are used to break down big programs in small ones as well as make program or project organized.
- We can define our most used functions in a module and import it, instead of copying their definitions into different programs. We also perform example program.

- Then we dived into operator world and get information about how may type of various operators exists in python programming language.
    1. Arithmetic
    2. Comparison
    3. Logical
    4. Assignment
    5. Membership
    6. Identity
- Arithmetic operators are used to perform arithmetic computing(add, subtract, multiply, Division etc…)
- Logical operators(and,or,not) are used to accomplish logical tasks.
- Like wise we have done all program of these operators.

Task:- Perform all program performed in session

```
C:\Windows\System32\cmd.exe

C:\Users\patel\Desktop\HackerRank>python test.py
----simple function----
hello
----function with arguments----
Hello World
----function with return----
a+b=30
---function with multiple return---
College = LDCE
Department = IT(7th sem)
---Default arguments---
default() : 30
default(4,5) : 9
---Keyword arguments---
keyargs(a=10,b=20) -10
keyargs(b=10,a=20) 10
---Var-length(non-keyword) arguments---
varlength(10,20) :  [10, 20]
varlength(10,20,30) :  [10, 20, 30]
varlength(10,20,30,40) :  [10, 20, 30, 40]
---Var-length(keyword) arguments---
varlengthk(car="BMW",price=2500000) ::: {'car': 'BMW', 'price': 2500000}
varlengthk(car="BMW",price=2500000,country="india") ::: {'car': 'BMW', 'price': 2500000, 'country': 'india'}
----Scope of Variable----
Value inside function :  10
value outside function: 20
----Module Function----
120
```

```
C:\Windows\System32\cmd.exe

C:\Users\patel\Desktop\HackerRank>python operators.py
------------------Operators--------------------
x: 10
y: 6
z: 20
lst: [10, 20, 30, 40, 50, 60, 'hello', 'Guys']
-----------------------------------------------
<-----Arithmetic operators----->
x+y= 16
x-y= 4
x*y= 60
x/y= 1.6666666666666667
x//y= 1
x%y= 4
<-----Comparision Operators----->
 x>y = True
 x<y = False
 x==y = False
 x>=y = True
 x<=y = False
 x!=y = True
<----Logical Operators---->
-----and-----
z is the largest
----or----
enter char:a
a  is Vowel
<----Membership Opearator---->
x in lst: True
y in lst: False
y not in lst: True
<----Identity Opearator---->
x is y: False
x is not y: True
```

Day 5:-

What We have learned ? :

- In today's session of python for Django we learned about class concept in object oriented programming language.
- Firstly we learned 'what is class and why it is so important for any OOP languages?'. Which help us to make ourselves comfortable before diving more deeply in it.
- Then we learned how to define any class in python and basic syntax of defining class in python programming language.

  Syntax: "class Myclass:"
- Classes are mostly used to contain data field to store the data and defining various useful methods'.
- Then we learned how to access class field like variables and it defined methods to perform any according tasks. This requirement is fulfilled by Object of that class which is also known as instance of class which provide access for any element or method of that related class.

  Syntax: "object = Myclass()"
- Then we perform our first program of this session related to class to understand well practically.
- Then we differentiate method and function and understand what are various difference between methods and functions.
- Then we get to know about 'self' argument which are mostly used in method of class call initializer this method is also known as '__init__' method its work is to initialize the variable of class.
- This __init__ method is also called constructor of class. There are mainly two type of constructor in python.
  1. **Default Constructor**
  2. **Parameterized Constructor**
- Then we learned how to use and when to use these above mentioned constructors by taking one example.
- Then we got introduced to the most important and enrich concept of OOP known as 'INHERITANCE' and its various types. It allows user to make general class and then extend that class in more specialized class (parent-child class concept).

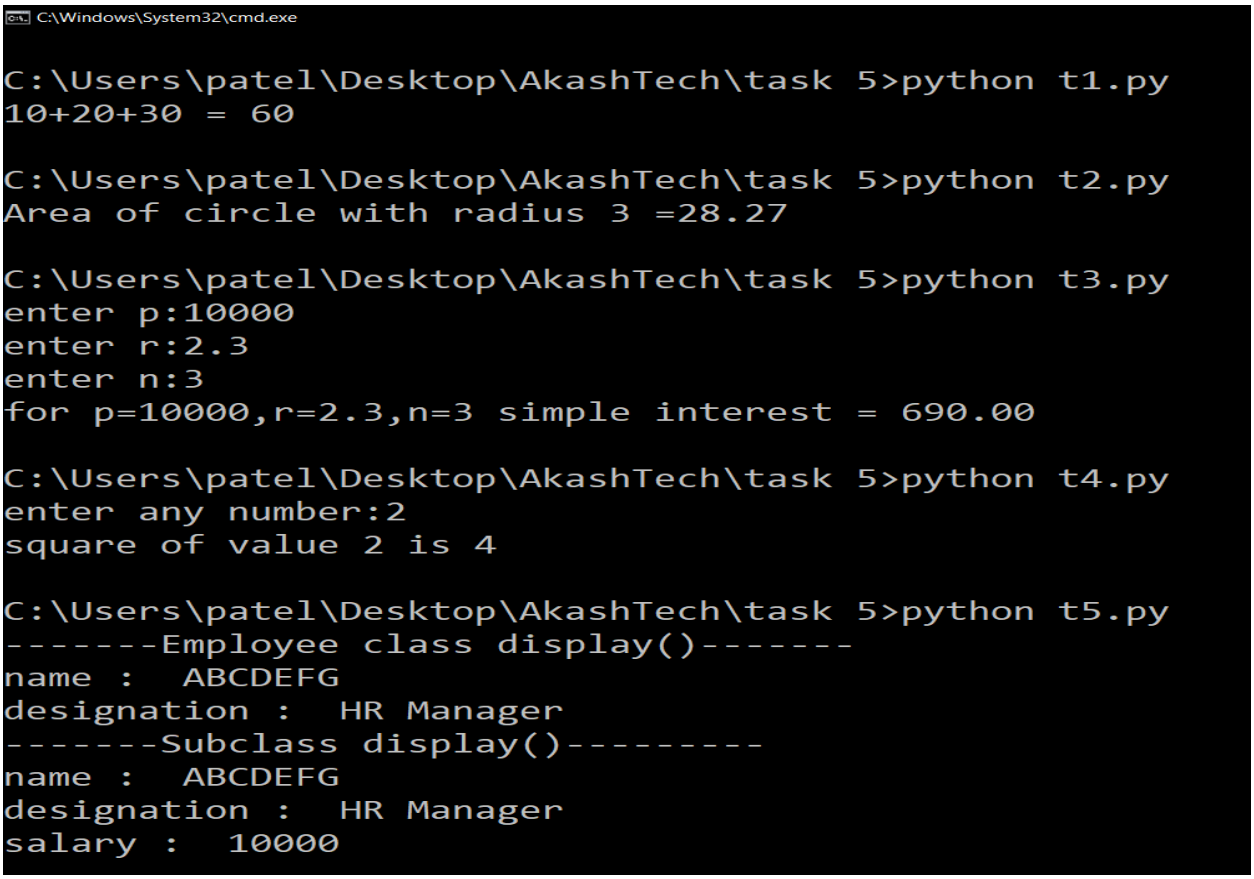
  Syntax: **class Subclass(Superclass):**

  #body

- Types:
    1. Single-Level Inheritance
    2. Multi-level Inheritance
    3. Multiple Inheritance
    4. Hierarchical Inheritance
    5. Hybrid Inheritance
- The we learned these types of inheritance deeply with example of each type which help use to make understand very well and conceptual way.
- Then we learned 2nd most important topic of OOP called '**Polymorphism'.** Which is ability to use common interfaces for multiple form
    1. **Overriding Methods**
    2. **Overloading Methods**
- We performed some example related to both type of polymorphism. And dive into base of OOP.

Task :We are given several task based on class and inheritance here are their output

Link : https://github.com/prakharninja0927/akash-internship-tasks



```
C:\Windows\System32\cmd.exe

C:\Users\patel\Desktop\AkashTech\task 5>python t6.py
enter length:12
enter width:21
Area of rectangle with length=12 and width =21 is 252

C:\Users\patel\Desktop\AkashTech\task 5>python t7.py
enter length:2
Area of square with length = 2 is 4

C:\Users\patel\Desktop\AkashTech\task 5>python t8.py
----Publisher display()----
Name :  John Carter
----Book display()----
Name :  John Carter
Pages: 200
----Tape display()----
Name :  John Carter
Pages: 200
time :3 hrs

C:\Users\patel\Desktop\AkashTech\task 5>python t9.py
Scheme id      :  1
Scheme name    :  ABC
Outgoing rate  :  20.4
Message Charge :  10000
Customer id :  10
Customer name :  PQR
Customer mobile :  1234569878

C:\Users\patel\Desktop\AkashTech\task 5>python t10.py
enter a: 12
enter b: 21
230
12 + 21 = 33
12 - 21 = -9
12 * 21 = 252
```

Day 6:-

What we have learnt?

- From Today's session we started our main agenda of this amazing internship program which is **Django.**
- Today we didn't begin programming. This was just theoretical session of python framework Django.
- We begin with little introduction of all web based python frameworks some of them are following
    1. Django
    2. Web2py
    3. Flask
    4. Tornado
    5. Cherrypy and many more …
- Then we dived in to our main topic Django deeply and understand
    1. what it is?
    2. Why it is so popular in market?
    3. Which are the amazing features those Django provide?
- We learn moto of Django framework or we can say we learn principle behind Django which is DRY (Don't Repeat Yourself)
- We also get to know about Django has an inbuilt supportive library for multiple databases,
    1. MySQL
    2. PostgreSQL
    3. SQLite3
    4. Oracle
- Then we are got aware about what we are going to learn about Django in this internship like Internship Highlights
    1. Authentication support
    2. Database schema migrations
    3. Object-relational mapper (ORM)
    4. Support for web servers
    5. Template engine
    6. URL routing
- Then we suddenly jumped into history of Django like who made it and how they named this framework "Django' and we also gathers info about version time line of Django which shows version and its release dates.

- Features:
    1. It's fast and simple
    2. Open Source
    3. It's secure
    4. It suits any web application project
    5. It's well-established
- After that we get an information about which companies are using Django in this contemporary world to grow their business and marketing
- The we learned MVT structure which are used by Django to develop any Django project in organized way.

  Model
    - Defines the data structure.
    - Takes care for querying the database.

  View
    - Defines what data should be presented
    - Returns HTTP response

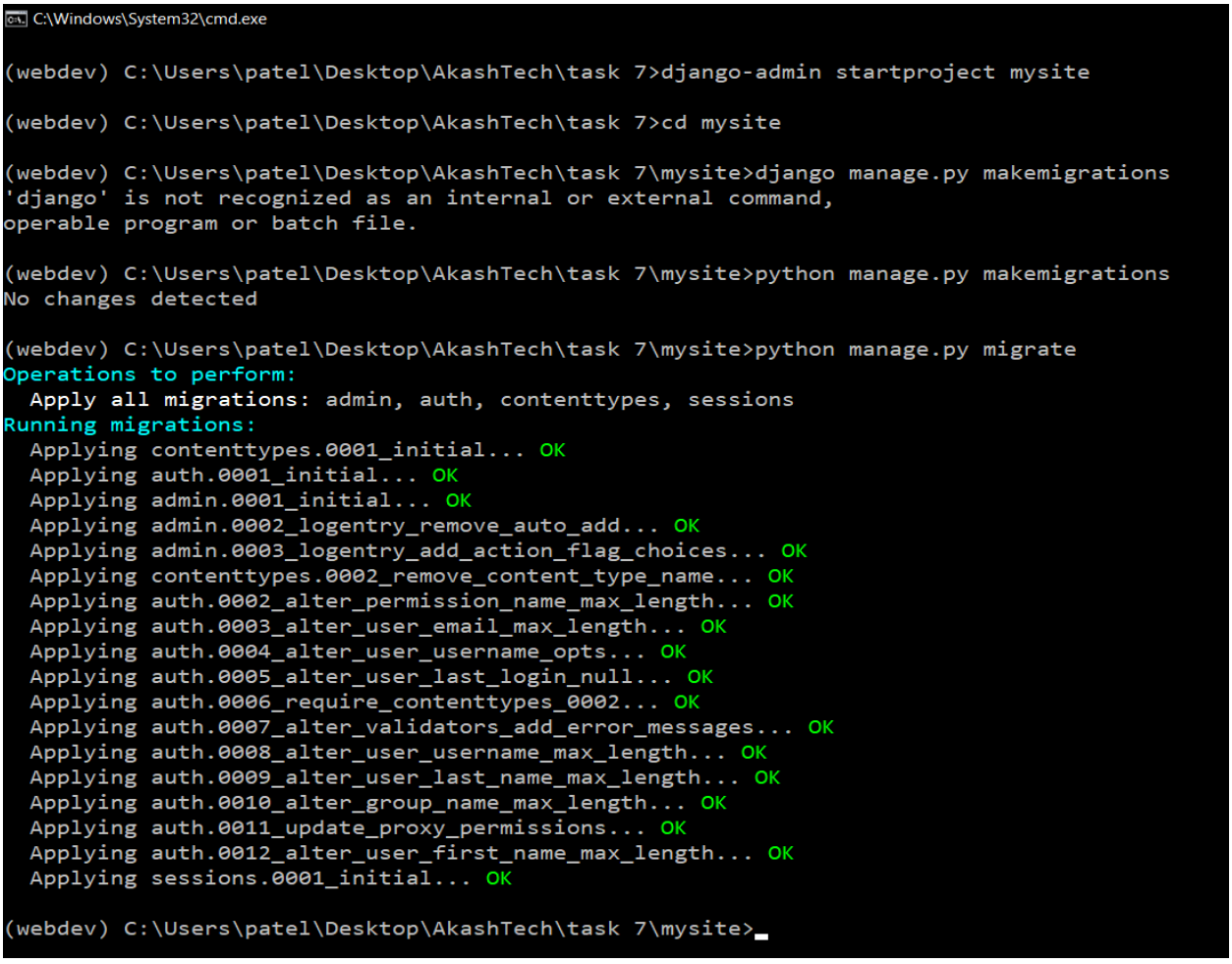
  Template
    - Renders the data in suitable format – HTML/XML/etc…
- After that which know what are prerequisites of learning Django which include basic of python and its functionalities.
- Then we choose our code editor(VS Code) for programming in Django and installed it.
- Then using 'pip' we install Django into our system but before that we set out python path to environment variable.
- Then we learn about 'pip' command also called 'Pip Installs Packages'.
- Then we learned some basic command like how to download, upgrade, and uninstall any python library using "pip" command.
- We also learned how to find version of any installed python libraries using "pip". As well as we learned how to see all installed python libraries in our system.
- Then we visited Django official website where all documentation of Django is already there.
- Then we learned how to start Django project using Django-admin startproject command.
- This command will generate some base file of Django in your working directory. Then we run our first program of Django in this internship using **python manage.py runserver.**

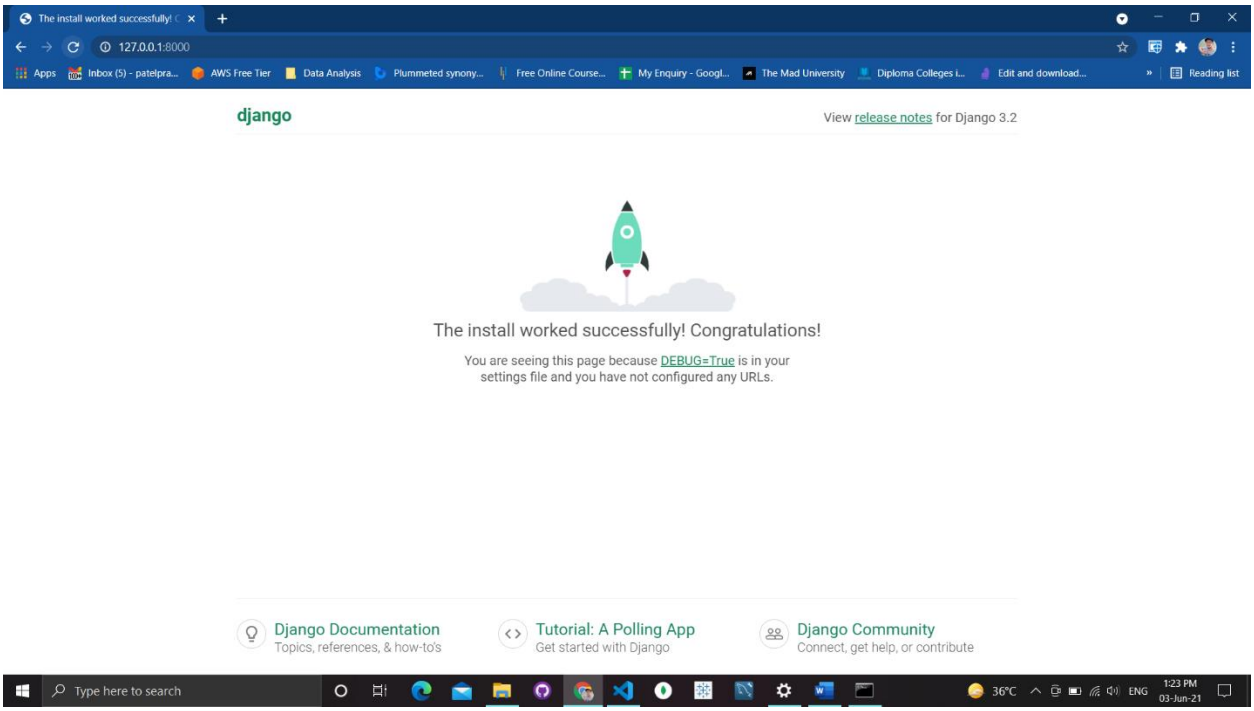
- Then we understood all file provided inbuilt by Django one by one .And learned Django project life cycle.
- We run program of Django in VS Code as well as Pycharm.

Day 7:-

What we have learnt?

- Our today's was completely practical based on Django framework. We first created new Django project using **Django-admin startproject** command and again revised file structure and standard flow of Django project.
- Then we learned about makemigrations in Django which is mainly used to migrate created model and tables to connected database.
- For today's session we used SQLite database and to see database we used SQLite viewer Software.
- Then we created our first app in our Django project using **"Python manage.py startapp myapp".**
- Then we configure all requirements for start our project on local host using **"python manage.py runserver".**
- Then we created our first function in views.py to redirect project to HttpResponse and run project to chrome browser and print hello world.




The install worked successfully!
127.0.0.1:8000
Apps
Inbox (5) - patelpra...
AWS Free Tier
Data Analysis
Plummeted synony...
Free Online Course...
My Enquiry - Googl...
The Mad University
Diploma Colleges i...
Edit and download...
Reading list
django
View release notes for Django 3.2
The install worked successfully! Congratulations!
You are seeing this page because DEBUG=True is in your settings file and you have not configured any URLs.
Django Documentation
Topics, references, & how-to's
Tutorial: A Polling App
Get started with Django
Django Community
Connect, get help, or contribute
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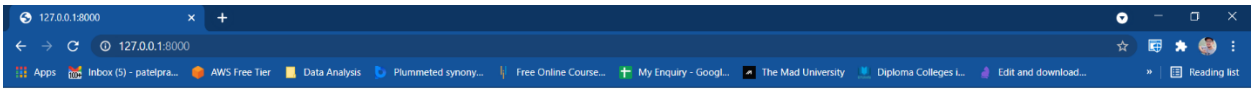
03-Jun-21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Apps
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AWS Free Tier
Data Analysis
Plummeted synony...
Free Online Course...
My Enquiry - Googl...
The Mad University
Diploma Colleges i...
Edit and download...
Reading list

Hello World !!!!!

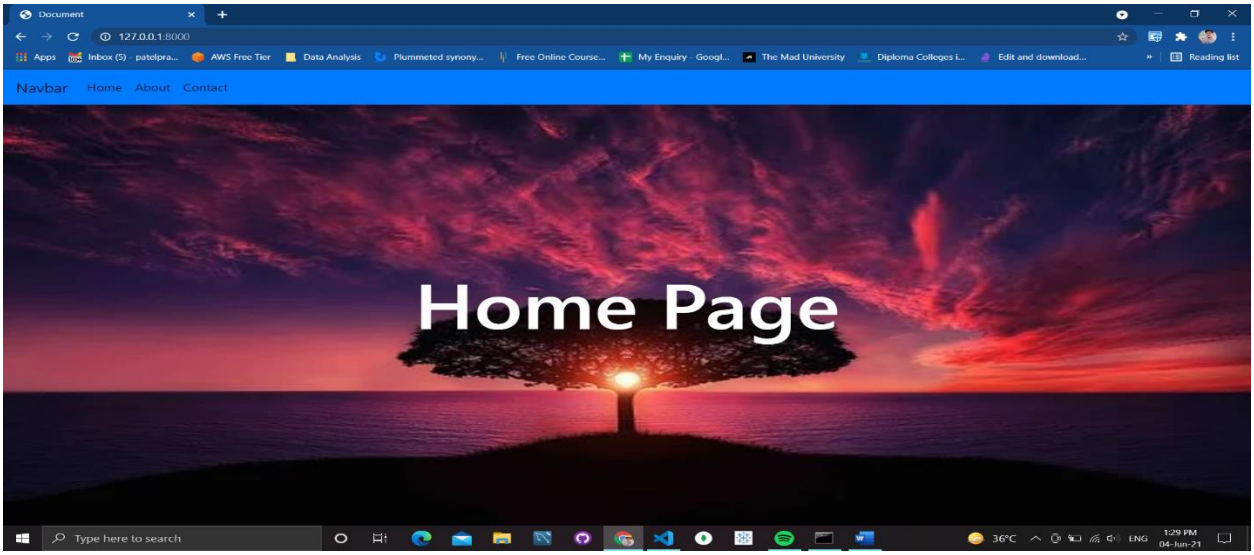

Type here to search
36°C
ENG
1:25 PM
03-Jun-21

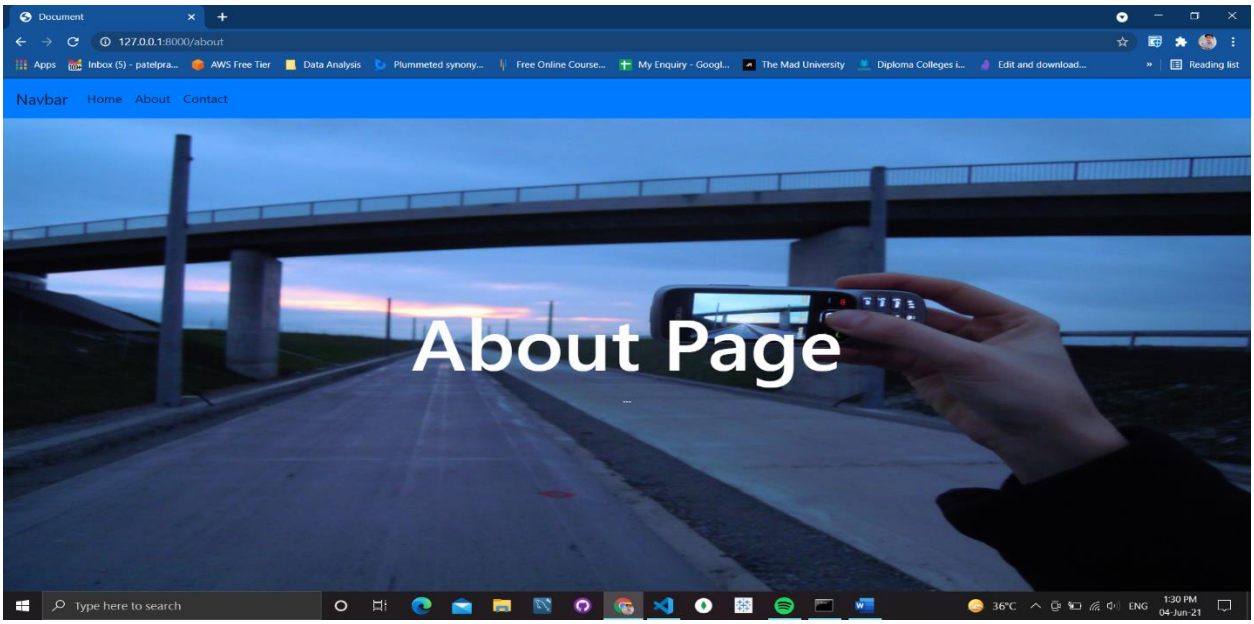
Week 2

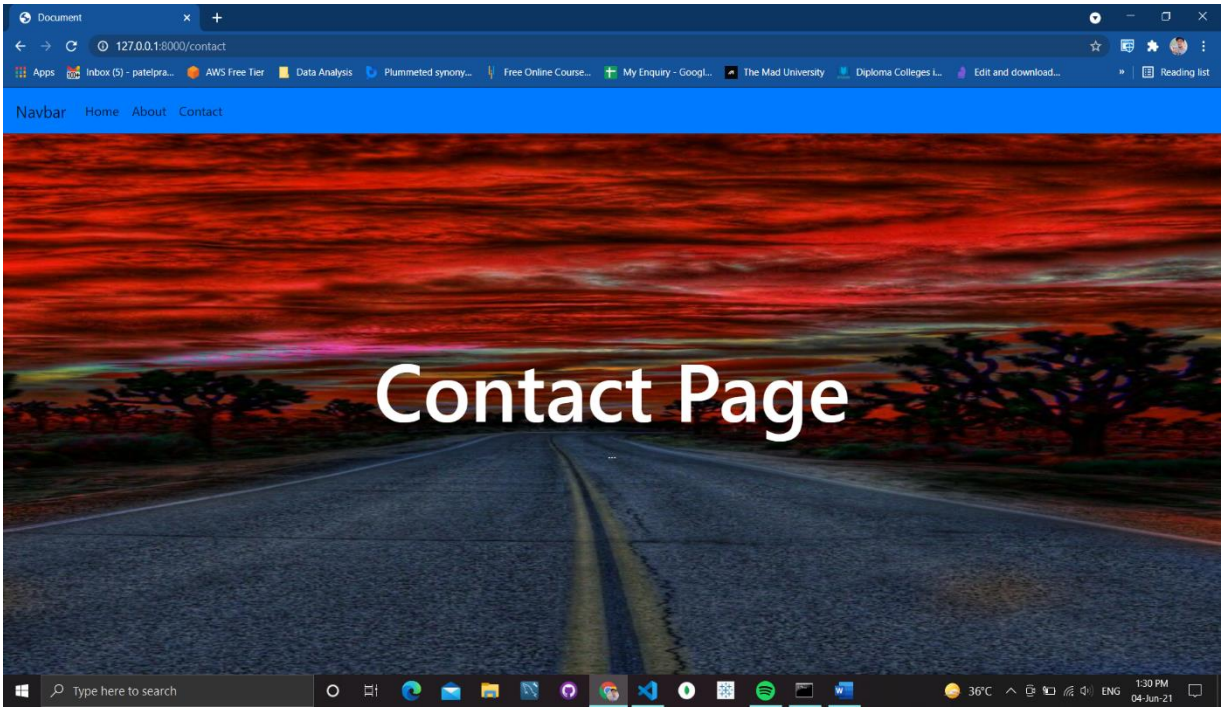
Day 8:-

What we have learnt?

- In today's session we learned how to navigate through multiple pages using various urls and its associated functions of views.py.
- We also learned how to setup path for templates and static file which are most useful features of Django we import images for static folder using different syntax of jinja2 than regular html syntax for importing CSS,JS, Images files into html page.



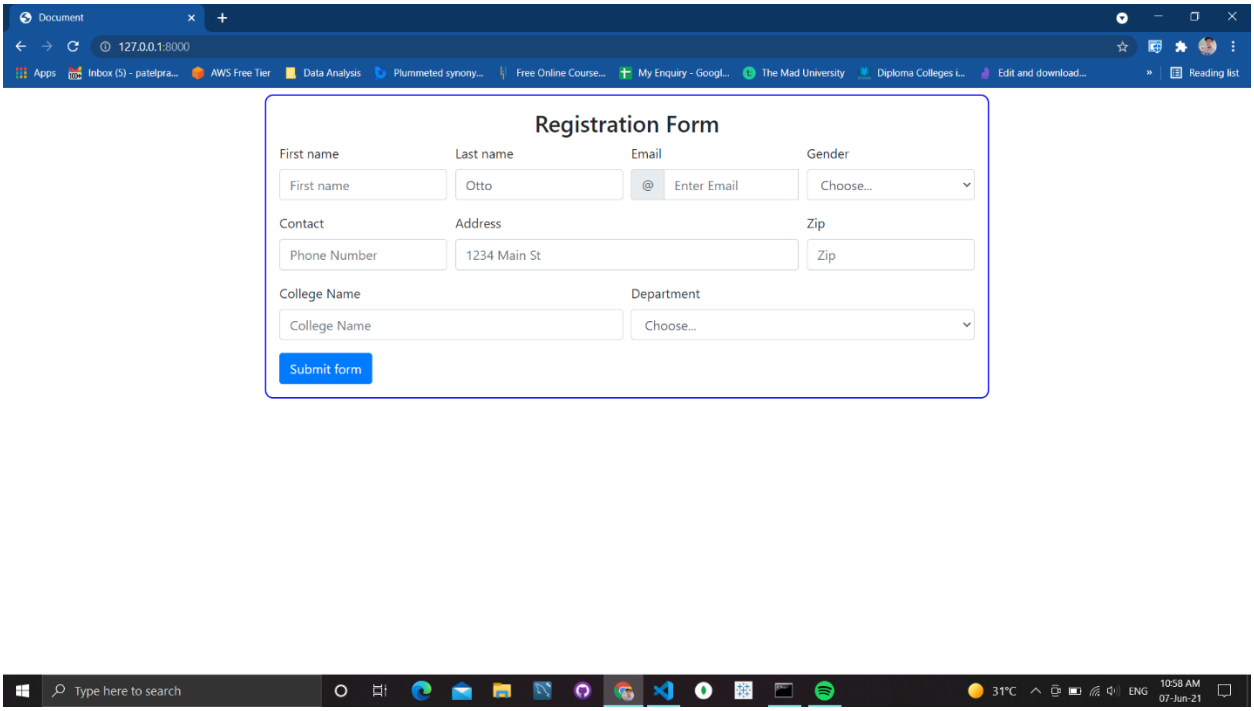


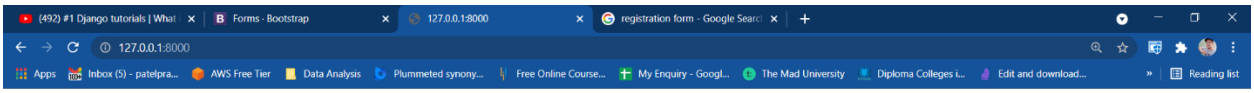

Document
127.0.0.1:8000/contact
Navbar
Home
About
Contact
Contact Page
Type here to search
36°C
ENG
1:30 PM
04-Jun-21

Day 9:-

What we have learnt?

- This session was also completely based on practical. In this session we learned how to get data from html form and print them in console as well as transfer them to another html page using “context” variable which is passed through render() which used to render template.
- Then we learned a bit about {% csrf_token %}. The **CSRF token** only ensures that only forms that have originated from trusted domains can be used to POST data back.
- Then lecturer made basic form with some fields and showed us how’s that working in real life.





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