Full Stack Experiment 7

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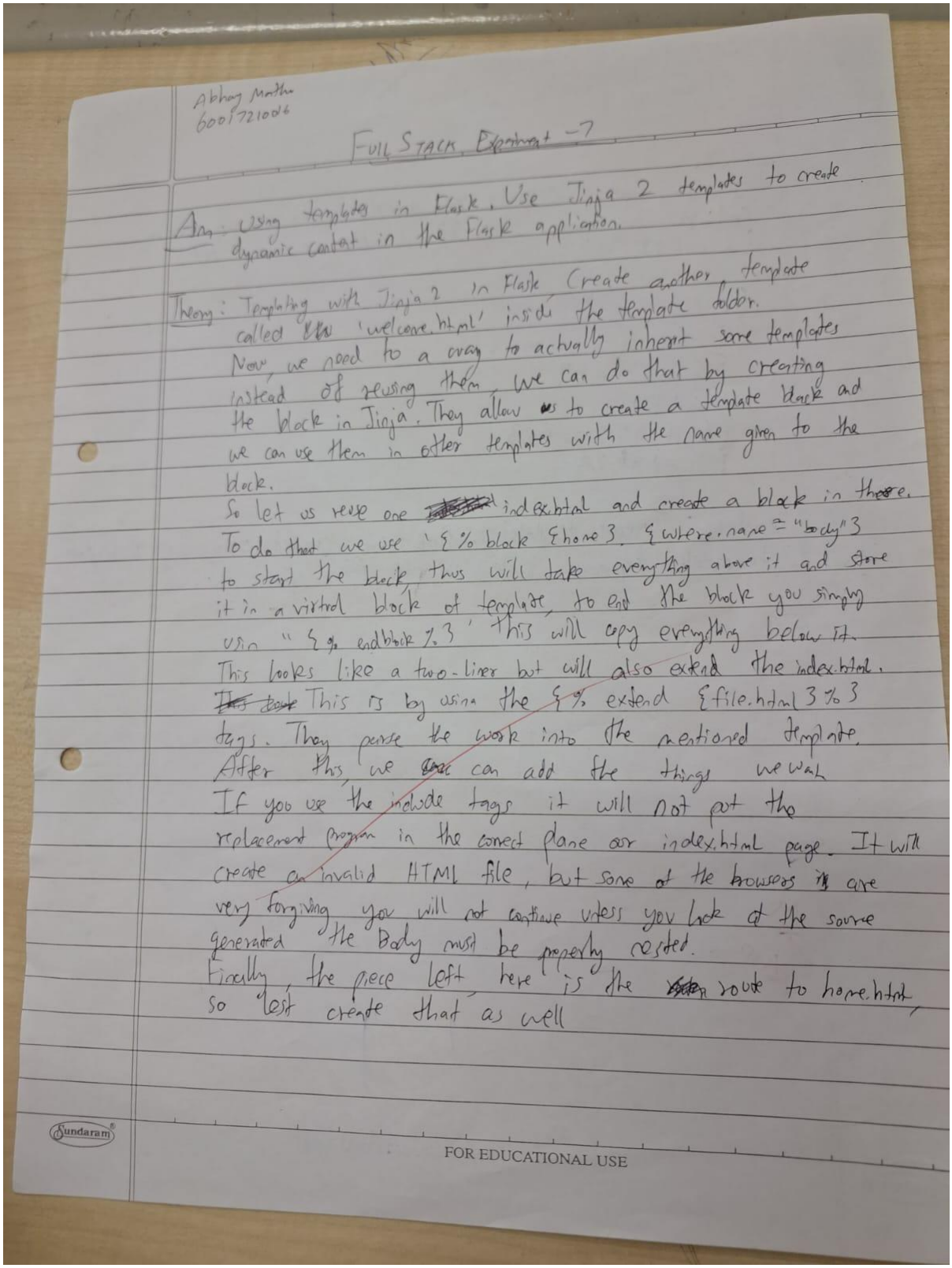
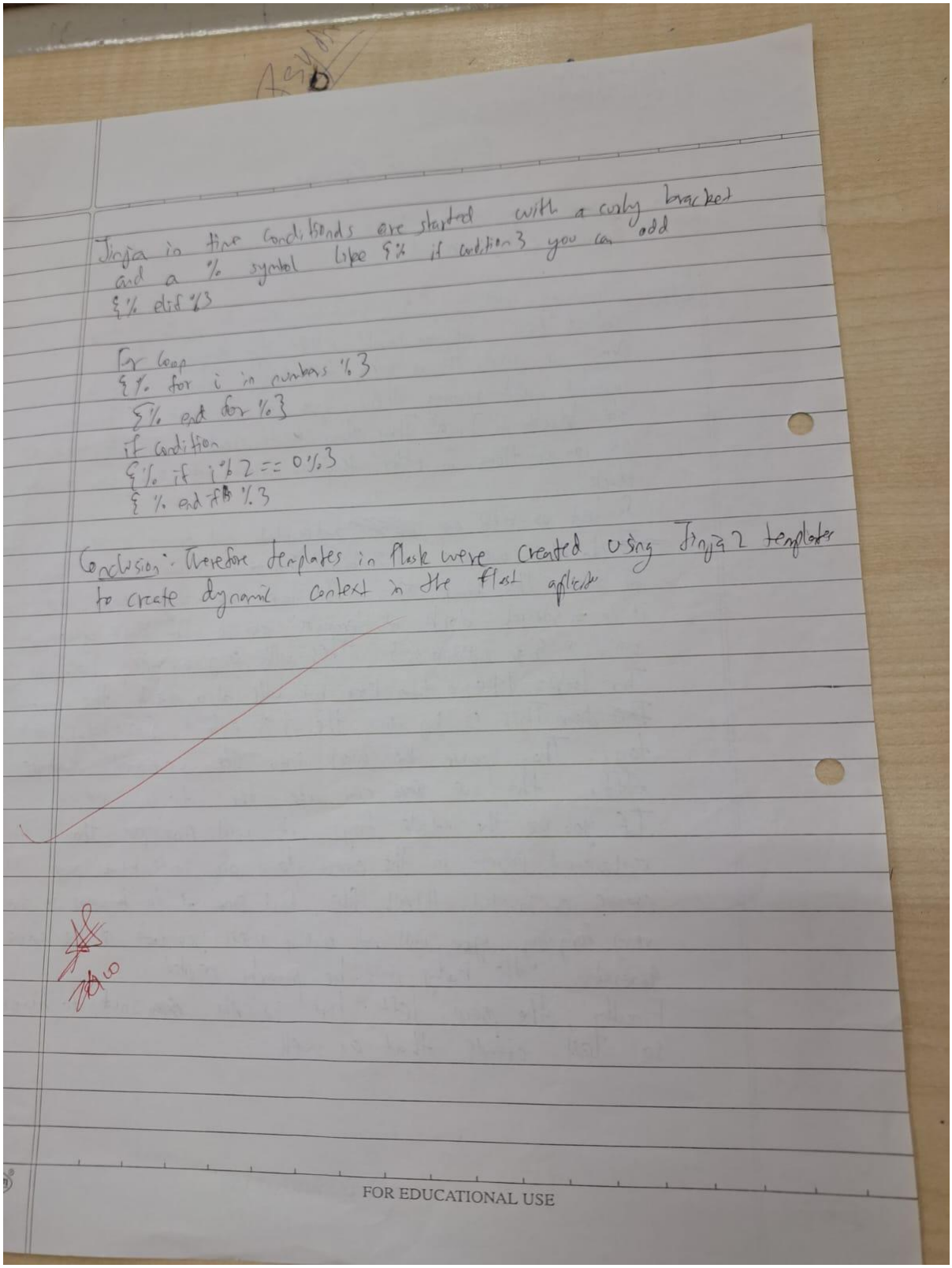
Batch: AIML A1

Theory:





Code:

Server.py:

```
from flask import Flask
app = Flask(__name__)
print("Initialized the app! With a name of: ",__name__)
```

```
@app.route('/string/<variable>')
def string(variable):
    return f'''
    <h1>Hi {variable}!</h1>
    <h1>Hi %s!</h1>
''' % variable

@app.route('/int/<int:id>')
def int(id):
    return f'''
    <h1>This POST request has the id: {id}!</h1>
    <h1>This POST request has the id: %d!</h1>
''' % id

@app.route('/float/<float:balance>')
def float(balance):
    return f'''
    <h1>This POST request has the id: {balance}!</h1>
    <h1>This POST request has the id: %f!</h1>
''' % balance


def extra(username):
    return f'''
    <h1>Hi {username}!</h1>
    This is to show how to add a url route to a function using the
add_url_rule method.
    <br><br>
    This approach is mainly used in case we are importing the view function
from another module.
    '''

app.add_url_rule('/extra/<username>', 'extra', extra) #'extra' is the name
assigned to the url route '/extra/<username>' and is used to call the view
function extra

from flask import render_template

@app.route('/index')
def index():
    return render_template('index.html')

@app.route('/welcome')
def welcome():
    return render_template('welcome.html')

@app.route('/home2')
def home2():
    return render_template('home2.html')
```

```
@app.route('/about')
def about():
    sites =
['https://www.google.com','https://www.youtube.com','https://www.facebook.com'
]
    return render_template('about.html',sites=sites)

@app.route('/contact/<role>')
def contact(role):
    return render_template('contact.html',person=role)

if __name__ == '__main__':
    print("App is starting...I think?")
    app.run(debug=True, use_reloader=True) #this will autoreload the server on
reloading website when you start app using flask run. IF you run each
individual .py file with python only then in that case the server
automatically reloads every time a change is masde, no need for using auto
reloader
    print("Umm...no idea what/how this message will be seen")
```

welcome.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>FlaskTest</title>
</head>
<body>
    <h1>Flask Rendering Templates</h1>
    <a href="{{ url_for('index') }}">Index</a>
    {% block body %}
    <a href="{{ url_for('home2') }}">Home2</a>
    <p>This is a flask application</p>
    {% endblock %}
</body>
</html>
```

index.html:

```
<!DOCTYPE html>
<html>

<head>
    <title>FlaskTest</title>
</head>
```

```
<body>
    <h2>Welcome To GFG</h2>
    <h4>Flask: Rendering Templates</h4>
    <a href="{{ url_for('welcome') }}">Welcome</a>
</body>

</html>
```

home2.html:

```
{% extends 'welcome.html' %}
{% block body %}
<h4>Flask Rendering Template Extended From <a href="{{ url_for('welcome')
}}">'welcome.html'</a></h4>
<p>This is a flask application</p>
{% endblock %}
```

contact.html:

```
{% extends 'welcome.html' %}
{% block body %}
    {% if person == 'admin' %}
    <p>Admin Section</p>
    {% elif person == 'maintainer' %}
    <p>App Source for page maintainer</p>
    {% elif person == 'member' %}
    <p>Hope you are enjoying our service</p>
    {% else %}
    <p>Hello {{ person }} </p>
    {% endif %}
{% endblock %}
```

answer.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Answer Page!</title>
</head>
<body>
    <h1>Keep Learning Maths!</h1>
    <h2>Square of number {{num}} is :{{squareofnum}}</h2>
</body>
</html>
```

about.html:

```
{% extends 'welcome.html' %}
{% block body %}
<ul>
    {% for site in sites %}
    <a href="{{ site }}">{{ site }}</a>
    <br>
    {% endfor %}
</ul>
{% endblock %}
```

squarenum.py:

```
from flask import Flask, render_template, request

app = Flask(__name__)

@app.route('/sqGET',methods=['GET'])
def squarenumberGET(): #Changing the url and then geting the data out of that
url
    # If method is GET, check if  number is entered or user has just requested
the page.
    # Calculate the square of number and pass it to answermaths method
    if request.method == 'GET':
        # If 'num' is None, the user has requested page the first time
        if(request.args.get('num') == None):
            return render_template('squarenumGET.html')
          # If user clicks on Submit button without entering number, display
error
        elif(request.args.get('num') == ''):
            return "<html><body> <h1>Invalid number</h1></body></html>"
        else:
          # User has entered a number
          # Fetch the number from args attribute of request accessing its 'id'
from HTML
            number = (request.args.get('num'))

            print(number)
            sq = int(number) * int(number)

            # pass the result to the answer HTML
            # page using Jinja2 template
            return render_template('answer.html',
                                   squareofnum=sq, num=number)


@app.route('/sqPOST',methods=['GET','POST'])
```

```
def squarenumberPOST():#No change in url, data is gotten from from POST
request sent
    # If method is POST, get the number entered by user
    # Calculate the square of number and pass it to answermaths
    if request.method == 'POST':
        if(request.form['num'] == ''):
            return "<html><body> <h1>Invalid number</h1></body></html>"
        else:
            number = request.form['num']
            sq = int(number) * int(number)
            return render_template('answer.html',
                                   squareofnum=sq, num=number)
    # If the method is GET,render the HTML page to the user
    if request.method == 'GET':
        return render_template("squarenumPOST.html")


if __name__ == '__main__':
    app.run(debug=True)
```

squarenumGET.html:

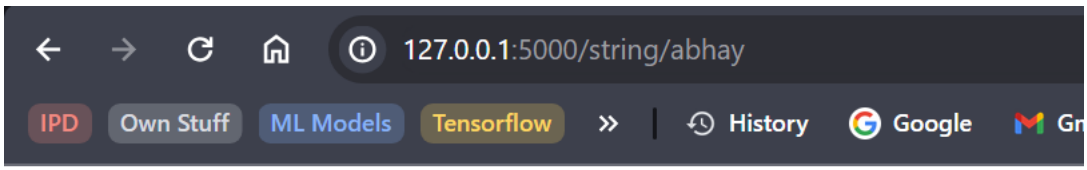
```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>Square Of Number!</title>
</head>

<body>
    <h1><i> Welcome to the Maths page!</i></h1>
    <p>Logic shapes every choice of our daily lives.<br>
        Logical thinking enables someone to learn and
        make decisions that affect their way of life. !</p>
    <form method="GET" action="/sqGET">
        Enter a number (GET) :
        <input type="text" name="num" id="num">
        <input type="submit" name="btnnum" id="btnnum">
    </form>
</body>

</html>
```

squarenumPOST.html:

```
<!DOCTYPE html>
<html lang="en">
```

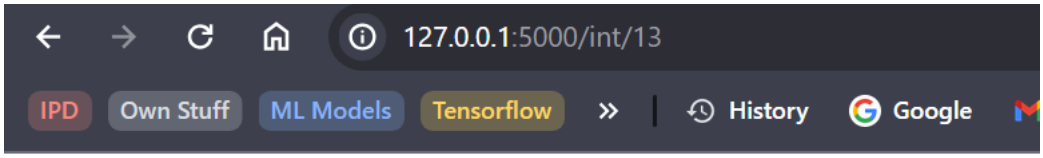
```
<head>
    <meta charset="UTF-8">
    <title>Square Of Number!</title>
</head>

<body>
    <h1><i> Welcome to the Maths page!</i></h1>
    <p>Logic shapes every choice of our daily lives.<br>
        Logical thinking enables someone to learn and
        make decisions that affect their way of life. !</p>
    <form method="POST" action="/sqPOST">
        Enter a number (POST) :
        <input type="text" name="num" id="num">
        <input type="submit" name="btnnum" id="btnnum">
    </form>

</body>

</html>
```

Output:



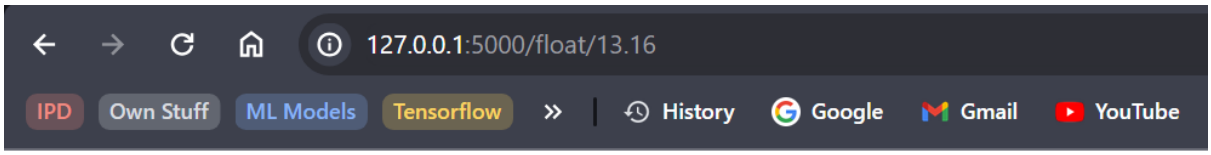
Hi abhay!

Hi abhay!



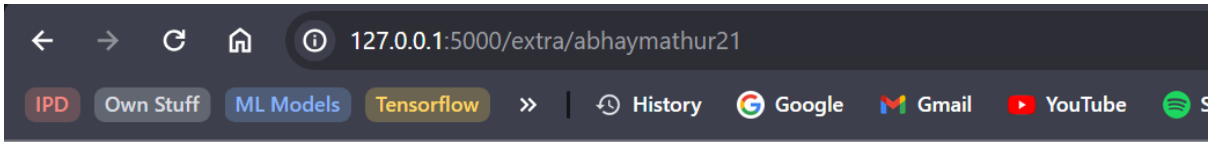
This POST request has the id: 13!

This POST request has the id: 13!



This POST request has the id: 13.16!

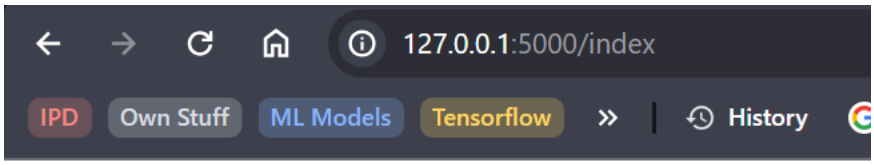
This POST request has the id: 13.160000!



Hi abhaymathur21!

This is to show how to add a url route to a function using the add_url_rule method.

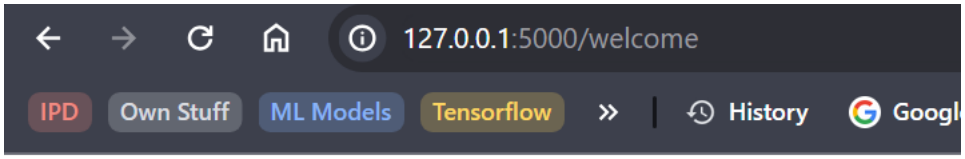
This approach is mainly used in case we are importing the view function from another module.



Welcome To GFG

Flask: Rendering Templates

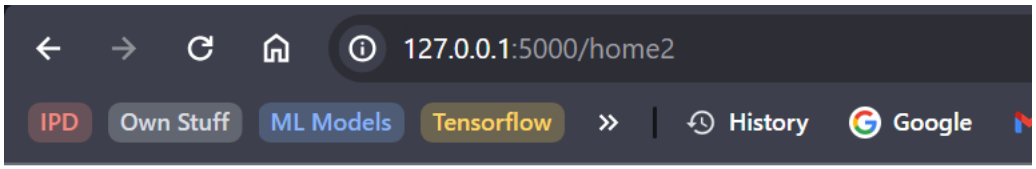
Welcome



Flask Rendering Templates

Index Home2

This is a flask application

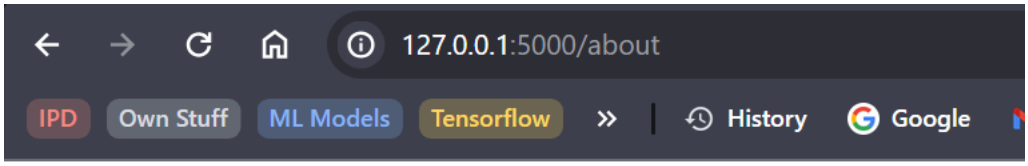


Flask Rendering Templates

Index

Flask Rendering Template Extended From 'welcome.html'

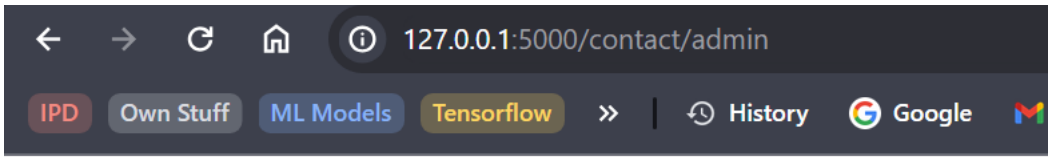
This is a flask application



Flask Rendering Templates

Index

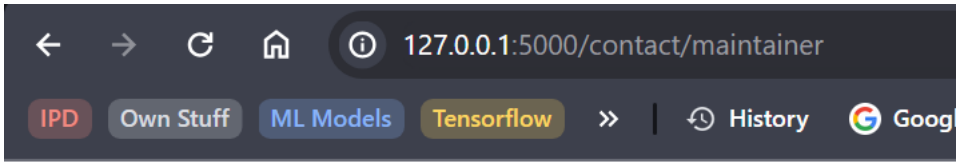
https://www.google.com
https://www.youtube.com
https://www.facebook.com



Flask Rendering Templates

Index

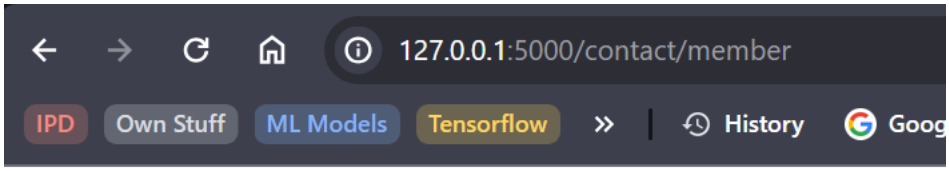
Admin Section



Flask Rendering Templates

Index

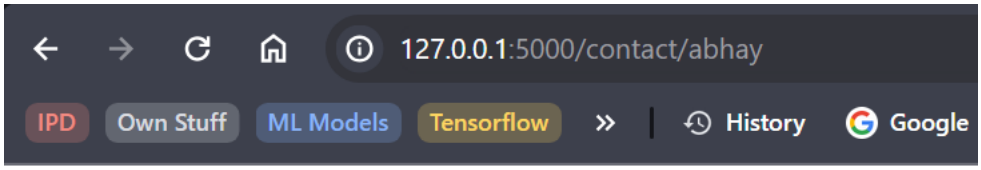
App Source for page maintainer



Flask Rendering Templates

Index

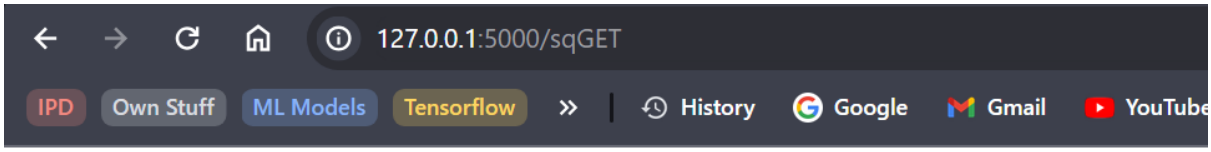
Hope you are enjoying our service



Flask Rendering Templates

Index

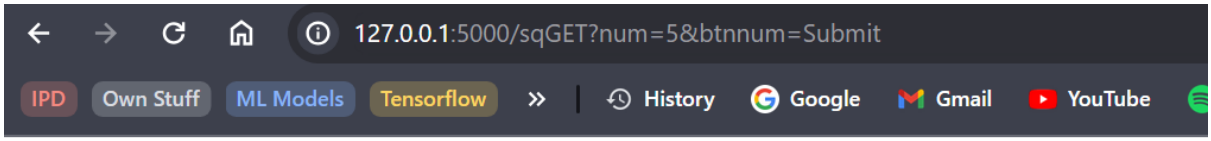
Hello abhay



Welcome to the Maths page!

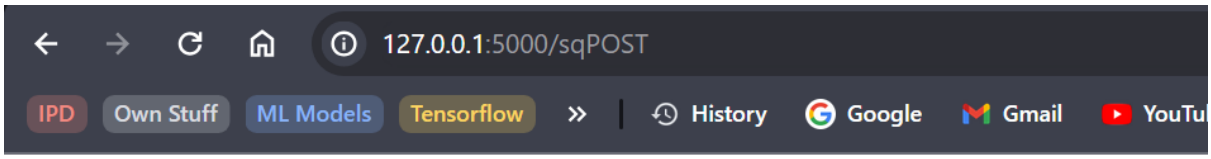
Logic shapes every choice of our daily lives.
Logical thinking enables someone to learn and make decisions that affect their way of life. !

Enter a number (GET) : Submit



Keep Learning Maths!

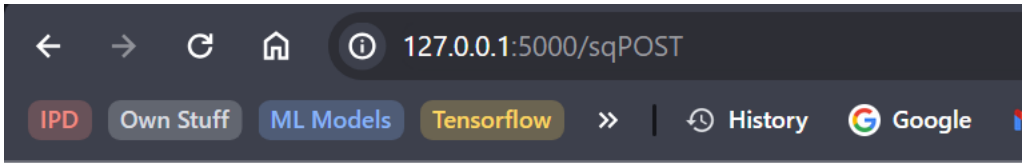
Square of number 5 is :25



Welcome to the Maths page!

Logic shapes every choice of our daily lives.
Logical thinking enables someone to learn and make decisions that affect their way of life. !

Enter a number (POST) : Submit



Keep Learning Maths!

Square of number 5 is :25

Conclusion: Therefore templates in flask were created using Jinja2 templating syntax to create dynamic context in the flask application.