

# URL SHORTENER USING FLASK

Submitted by – Sanjeev, Sai Priya, Priyanka

This Report briefly tells us about Shortening URL's with the help of Flask Framework (app.py) Application Server where we imported required libraries. URL Shortener is used to make a long URL into a small URL so that whenever we access the shortener URL it should redirect to the original URL.

```
import os
from flask import Flask,render_template,request,redirect
from flask_sqlalchemy import SQLAlchemy
from flask_migrate import Migrate
import random
import string
```

After Importing libraries the next step is “SQL Alchemy Configuration”,and there were the SQL database file create in App.py file location or path and the file name (data.sqlite).And creating a variable db and in that we are integrating with app.py and with that using Flask – Migrate is an extension that handles SQL Alchemy.

```
##### SQL Alchemy Configuration #####

basedir = os.path.abspath(os.path.dirname(__file__))
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:/// ' + os.path.join(basedir,'data.sqlite')
app.config['SQLALCHEMY_TRACK_MODIFICATIONS'] = False

db = SQLAlchemy(app)
Migrate(app,db)

#####
```

The next step is to Create a Model using Class and def which helps to create a table name and column names and its creating a constructor to assigning that value.

```
##### Create a Model #####

class Project(db.Model):
    __tablename__ = 'url_shortner'
    id = db.Column(db.Integer, primary_key = True)
    org = db.Column(db.Text)
    short=db.Column(db.Text)

    def __init__(self,org,short):
        self.org = org
        self.short = short
    def __repr__(self):
        return f"{self.org} - {self.short}"

#####
```

Then comes the Flask part to create the required routes with functions binded which helps in connecting the frontend (i.e to HTML Pages).

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

@app.route('/', methods=['POST'])
def home_post():
    sanjeev=5
    original_url = request.form.get('in_1')
    short_url = ''.join(random.choices(string.ascii_letters+string.digits,k=sanjeev))
    data[short_url] = original_url
    new_original=Project(original_url,short_url)
    db.session.add(new_original)
    db.session.commit()
    return render_template('index.html',k=short_url)

@app.route('/history')
def history_get():
    all_url=Project.query.all()
    return render_template('history.html', data=data,all_url=all_url)

@app.route('/sh/<short>')
def fun(short):
    if (short) in data:
        return redirect(data[(short)])
    return "incorrect URL"
```

# HTML PAGES

This Project Consists of 3 HTML Pages and it has CSS namely:

**Layout.html** – The Inheritance Page which gives the same layout to all the html pages and save time to create header footer again and again for every html file, Here I give the background color as power blue(rgb)

```
<title>
{% block title %}

{% endblock %}
</title>
</head>
<body style = "background-color: #000080; ">
  <ul class="nav nav-pills">
    <li class="nav-item">
      <a class="nav-link active" aria-current="page" href="/">Home</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="/history">History</a>
    </li>
  </ul>

  {% block body %}

  {% endblock %}
</body>
</html>
```

**Index.html** - The Home Page where the original URL should be entered, and the shortened URL will be displayed with a copy button so that user can easily copy the URL to Clipboard and able to use in the browser. Here JS is used for Copy Button.

```
pro > templates > index.html > center > m
{% extends 'layout.html' %}

{% block title %}
Home Page
{% endblock %}

{% block body %}
<center>
<h1 style="background-color: #ff0000; color: white; padding: 5px; text-align: center;">URL Shortner</h1>
<form method='post'>
<input type="text" name="in_1" class="form-control" placeholder="Enter original URL">
<button>Shorten</button></center>
</form>
<br><center>
Shortened URL is - 127.0.0.1:5000/sh/{{k}} </center>
<br>
<br>
<form>
<center>
<input class="form-control" value= "127.0.0.1:5000/sh/{{k}}" id="myInput"><br>
<button onclick="myFunction()"> Copy </button>
</center>
</form>

<script>
function myFunction() {
  /* Get the text field */
  var copyText = document.getElementById("myInput");

  /* Select the text field */
  copyText.select();
  copyText.setSelectionRange(0, 99999); /* For mobile devices */

  /* Copy the text inside the text field */
  navigator.clipboard.writeText(copyText.value);

  /* Alert the copied text */
  alert("Copied the text: " + copyText.value);
}
</script>
{% endblock %}
```

**History.html** - The Page displays the History of the URL's and the respective Shortened URL's which is the user's data

```
{% extends 'layout.html' %}

{% block title %}
History Page
{% endblock %}

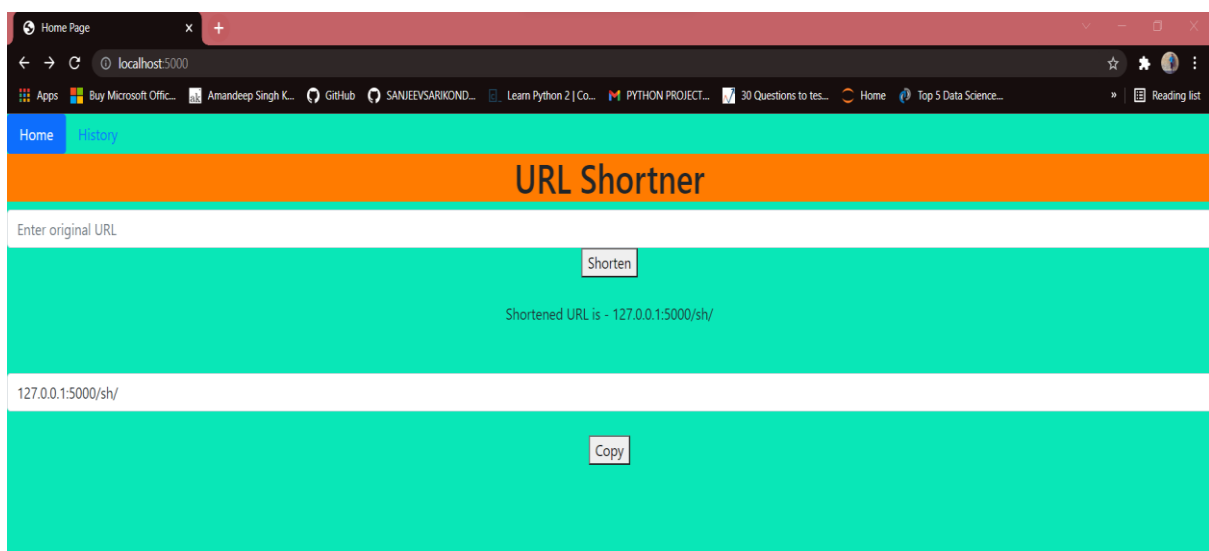
{% block body %}
<h1 style="background-color: pink; ">History</h1>

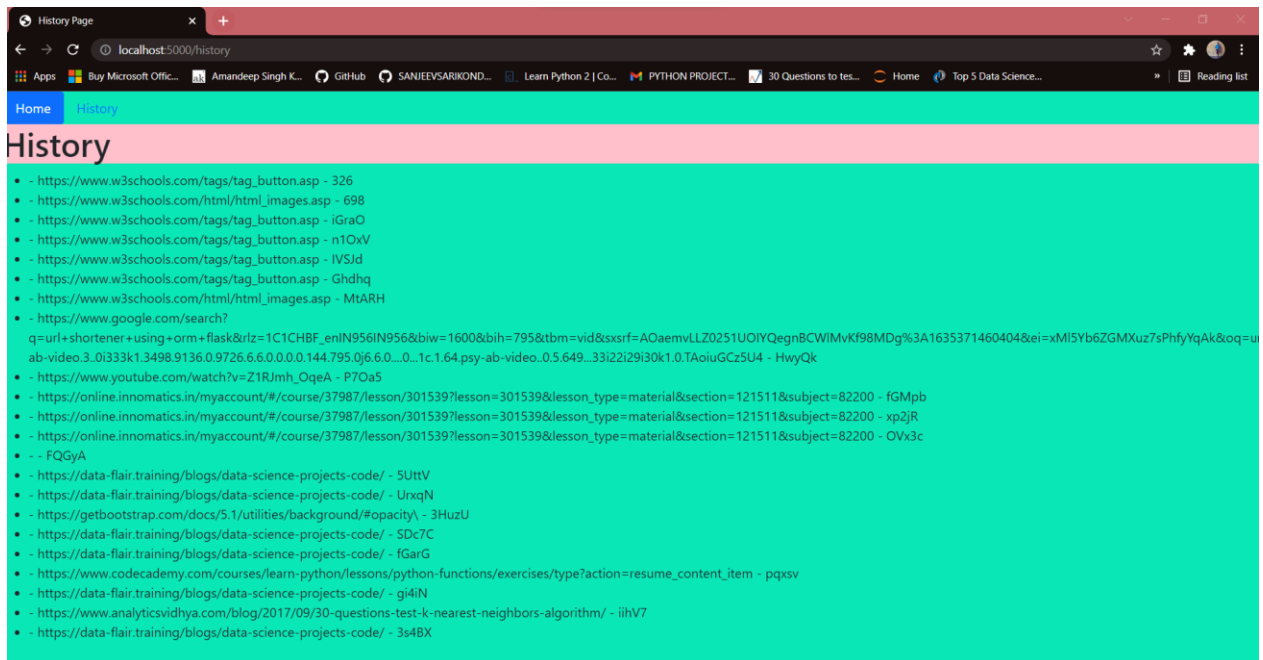
<ul>
{% for short_url in all_url %}
<li>{{ data[short_url] }} - {{ short_url }}</li>
{% endfor %}
</ul>

{% endblock %}
```

## OUTPUT

**127.0.0.1:5000/ - Home Page (Index.html)**





**THE END**