



INNOMATIC

RESEARCH LAB



A graphic with a light blue background. On the left, a dark grey silhouette of a hand holds a magnifying glass. The handle of the magnifying glass is a long, thin rectangle with the text 'URL SHORTENER' in white, slanted, uppercase letters. The lens of the magnifying glass is a smaller rectangle containing a small globe icon and the text 'http://www.' in black. To the right of the hand, there is a network diagram consisting of several circular nodes connected by thin lines. Some nodes contain icons: a dollar sign, a copyright symbol, a registered trademark symbol, and a circular arrow. One node is a larger purple circle with a white circular arrow icon.

URL SHORTENER

URL Shortener Web Application



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About :

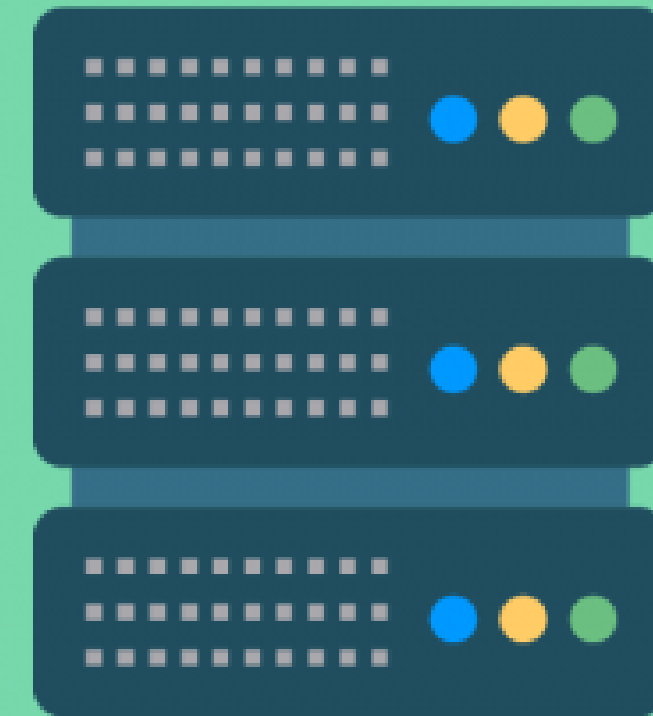
URL Shortener is used to make a long URL into a small URL so that whenever we access the shortener URL it should redirect to the original URL.



Project



FRONT END

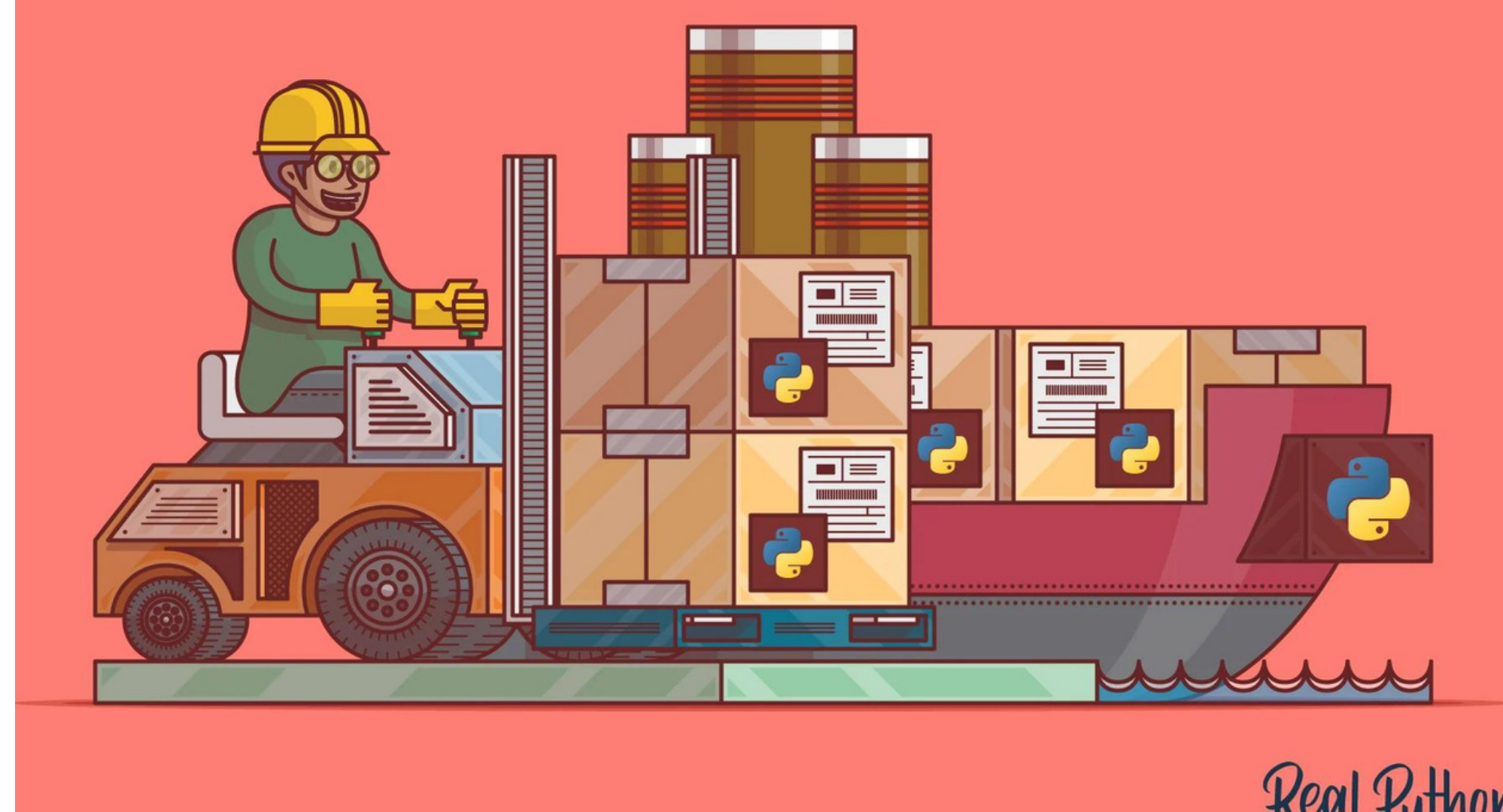


BACK END



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Backend – Application Server



This Project is built using Flask. "app.py" is the Application Server where we imported required libraries .

- import OS
- from flask import Flask, render_template, request, redirect
- from flask_sqlalchemy import SQLAlchemy
- from flask_migrate import Migrate
- import random
- import string

SQLAlchemy Configuration

```
##### SQLAlchemy 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)
```

- After Importing libraries, the next step is “SQLAlchemy Configuration”



Create a Model

```
##### 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}"
```

- The next step is to Create a Model using Class and def which helps to create a



Creating Routes

```
@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"
```

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



FRONTEND (HTML PAGES)



- Layout.html
- Index.html
- History.html

Layout.html

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

{% endblock %}
</title>
</head>
<body style = "background-color: rgb(9, 231, 183); ">
<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>
```

- 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.

Index.html

```
7 pro / templates / index.html / center / in
{% extends 'layout.html' %}

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

{% block body %}
<center>
<h1 style="background-color: #ff9900; 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 %}
```

- The Index 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

History.html

```
{% 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 %}
```

- The Page displays the History of the URL's and the respective Shortened URL's



Output

Home Page x +

localhost:5000

Apps Buy Microsoft Offic... ak Amandeep Singh K... GitHub SANJEEVSARIKOND... Learn Python 2 | Co... PYTHON PROJECT... 30 Questions to tes... Home Top 5 Data Science... » Reading list

Home History

URL Shortner

Enter original URL

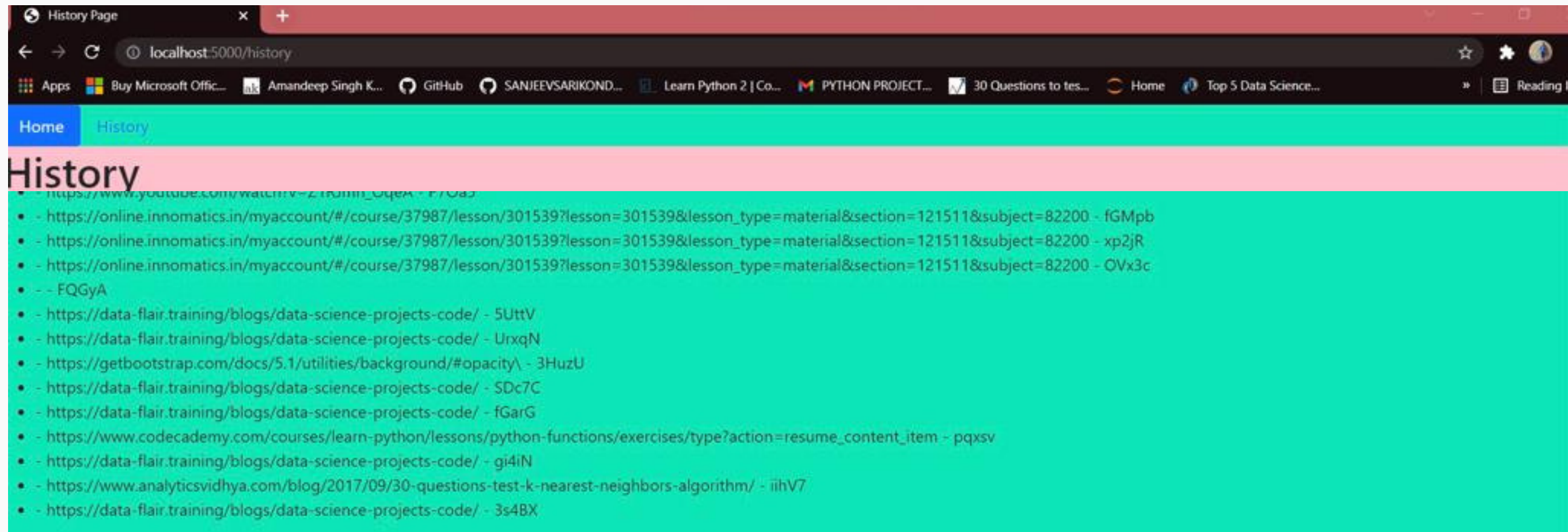
Shorten

Shortened URL is - 127.0.0.1:5000/sh/

127.0.0.1:5000/sh/

Copy

History Page



About me

Name : S.S.S.SANJEEV

Background : M.Sc. Big Data Analytics

- **Why you want to learn Data Science**
- **Any work experience**
- **What you like about Innomatics Research lab**



About me

Name : Sai Priya

Background : M.Sc. Applied Statistics

- **Why you want to learn Data Science**
- **Any work experience**
- **What you like about Innomatics Research lab**



About me

Name : Priyanka

Background : Btech (IT)

- **Why you want to learn Data Science**
- **Any work experience**
- **What you like about Innomatics Research lab**



THANK YOU

