# URL Shortener Web Application (Basic)

## Task: -

### What will our Web app do (Objectives)?

1. As the name suggests, it shortens URLs.
2. Users can also save URLS by coming to the web app.

### Why do we need URL Shortener?

Sometimes we need to share or send links and this can be tiresome and annoying to copy and paste long URLs. That is where URL shorteners come in. Not only it helps in shortening the URL but it also allows the user to copy the shortened URL with a click of a button.

### The project consists of 2 parts:

1. Frontend (done with HTML, CSS and Bootstrap)
2. Backend - Flask (Python)
3. Backend - Database ORM

### Front-End Information:

The front-end consists of 2 web pages:

1. Home Page - A page will be shown where the user can enter the URL he/she wants to shorten. After the 'shorten' button is clicked, the shortened URL is displayed in the text-field which the user can copy using the copy button.
2. History Page - Containing all the Original URLs along with the Shortened URLs.

### Project Workflow:

1. Users can enter the URL they want to shorten. After entering a URL, click on the 'Shorten' URL button to display the shortened URL in the following text-field which can be copied by clicking on the copy button.
2. After the 'Shorten' button is clicked, the URL that is entered is saved in our database with the shortened URL. It is saved in the database so that the user can look into the previous URLs he entered in our web-app with their shortened URL.
3. Try to verify the URL entered by the user is correct or not. (Do some googling to find out how to make it possible)

**Below are the points explaining how I approached to the above given task: -**

## Report on solution of the above task: -

- Created 3 files named app.py, index.html, history.html.

- First, I imported all required libraries like OS, Flask, SQL Alchemy, Migrate, random, string.

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

- Create a model class. Provide a table with column names with its types and primary key **__init__ and __repr__.**

- Created different **route in the app.py** file with METHOD = [‘POST’] as required for the web page to work properly.

- Created variables named **original_url** with request.form.get function for the **original url** which will be further shortened and a variable named **short_url_1** with “join” function which will further shorten the **original_url**. Which is our main task in this project.

- Given CSS styling to both the HTML files (index, history).

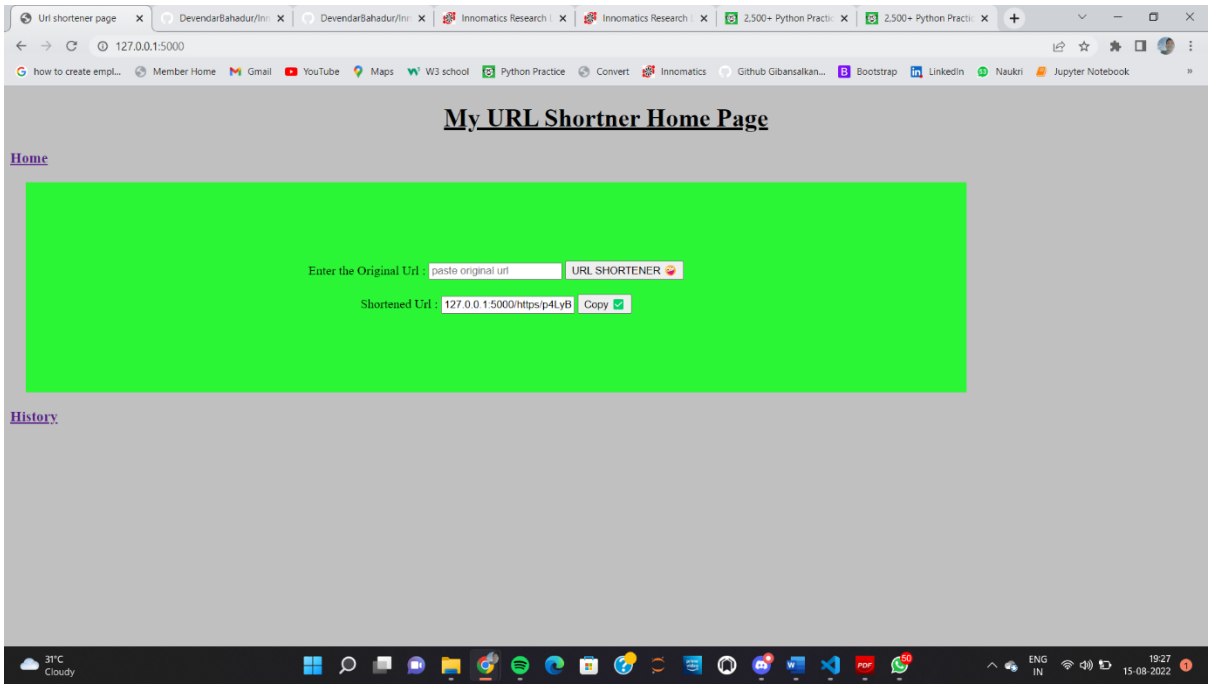
- Built “index.html” and “history.html” files with the relevant requests, forms and display content.

- In “home.html” file added a button to copy the shortened URLs using JavaScript code snippets.

- history.html file was created for adding all URLs to the table present in the database. In the table all the original and shortened URLs are added which the user has tried to shortened as a type of history for the user.

**While working on this task I got a new experience on working with flask and also, I got to learn many new things and new technologies which can be used in the Backend: - flask.**

## URL Shorten Home page:




## URL Shorten History page: