REPORT

- The code defines a Flask application instance app that uses SQLite database via Flask SQLAlchemy for storing URLs and their shortened versions.
- The ‘urls’ model class is defined to map the urls table in the database, which has three columns, id_, long (original URL), and short (shortened url).
- The ‘create_tables()’ function is called before the first request to the application to create the ‘urls’ table in the database.
- The ‘shorten_url()’ function generates a random 3-character string for the shortened URL, which is checked against the existing shortened URLs in the database, and a new one is returned if it doesn't exist.
- The ‘home()’ function is the main endpoint of the application, which handles the requests to shorten URLs. If the user enters a long URL that is already shortened, they are redirected to the page that displays the existing shortened URL, otherwise, a new shortened URL is generated, stored in the database, and the user is redirected to the page that displays the new shortened URL.

- The ‘redirection()’ function is used to redirect the user to the original URL when they access the shortened URL. It retrieves the original URL from the database using the shortened URL as a key
- The ‘display_short_url()’ function displays the shortened URL on a separate page after it has been generated.
- The ‘display_all()’ function displays all the shortened URLs stored in the database on a separate page.
- The HTML templates are used to render the web pages dynamically using the Jinja2 template engine. There are four HTML templates, ‘base.html’,’url_page.html’,’short_url.html’, and ‘all_urls.html’. The ‘base.html’ template provides the basic layout of the web pages, and the other templates extend it to add specific content.
- The CSS and JavaScript libraries are loaded via CDNs to provide styling and interactivity to the web pages.
- The code runs the Flask application on port 5000 in debug mode.