

Assessment 3.

1. What is Flask, and how does it differ from other web frameworks?

Flask is what's known as a WSGI framework. Mercifully pronounced "whiskey," this stands for Web Server Gateway Interface.

Essentially, this is a way for web servers to pass requests to web applications or frameworks. Flask relies on the WSGI external library to function, as well as the Jinja2 template engine.

2. Describe the basic structure of a Flask application.

Routes and View Functions

Clients such as web browsers send requests to the web server, which in turn sends them to the Flask application instance. The Flask application instance needs to know what code it needs to run for each URL requested, so it keeps a mapping of URLs to Python functions.

3. How do you install Flask and set up a Flask project?

How To Install Flask

- Step 1: Install Virtual Environment. Install virtualenv on Linux. ...
- Step 2: Create an Environment. Create an Environment in Linux and MacOS. ...
- Step 3: Activate the Environment. Activate the Environment on Linux and MacOS. ...
- Step 4: Install Flask.
- Step 5: Test the Development Environment.
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4. Explain the concept of routing in Flask and how it maps URLs to Python functions.

Basic Routing in Flask

By using the route() decorator, we can define routes for different URLs and map them to the appropriate view functions that will generate the desired response. This allows us to create a

structured and organized web application with distinct functionalities for different routes.

5. What is a template in Flask, and how is it used to generate dynamic HTML content?

Templates are files that contain static data as well as placeholders for dynamic data. A template is rendered with specific data to produce a final document. Flask uses the Jinja template library to render templates. In your application, you will use templates to render HTML which will display in the user's browser.

6. Describe how to pass variables from Flask routes to templates for rendering.

How are variables passed from app to template? ¶ The templates in Flask are handled by the Jinja template engine, which comes with Flask when you first install it. The `render_template()` function both selects the template file to be used and passes to it any values or variables it needs.

7. How do you retrieve form data submitted by users in a Flask application?

You can get form data from Flask's request object with the `form` attribute: from flask import Flask, request app = Flask(__name__) @app.route('/', methods=['GET', 'POST']) def index(): data = request.form['input_name'] # pass the form field name as key.

8. What are Jinja templates, and what advantages do they offer over traditional HTML?

Jinja is a text templating language. It allows you to process a block of text, insert values from a context dictionary, control how the text flows using conditionals and loops, modify inserted data with filters, and compose different templates together using inheritance and inclusion.

ADVANTAGES:

The Jinja template engine allows customization of tags, filters (for formatting or transforming values), tests (for evaluating conditions), and globals. Also, unlike the Django template engine, Jinja allows the template designer to call functions with arguments on objects.

