What is Virtualenv? write down steps to create virtual environment.

What does MVT stand for in django? Explain.

Explain request-response cycle in Django?

What is the importance of urls.py in django project?

virtualenv is a **tool to create isolated Python environments**. Each environment has its own dependencies, packages, and Python binary — so it won't affect the global Python setup.
It is especially useful in web development where different projects may require different versions of packages.

steps:

1. pip install virtualenv
2. virtualenv myenv
3. myenv\Scripts\activate
4. deactivate

MVT stands for **Model - View - Template**, which is Django's design pattern.

- **Model**: Handles the data and database. Defines the structure of your database (tables).
- **View**: Contains business logic. It processes user requests, interacts with the model, and sends data to the template.
- **Template**: Deals with presentation (HTML). It displays the data sent from the view in a user-friendly format.

MVT Flow Example:
User submits a form → Django view processes the data → interacts with model → sends result to template → template renders it in HTML.

Client Request: A user sends a request by visiting a URL.

 URL Dispatcher (urls.py): Matches the request URL to a view.

 View: The view function is called; it may fetch data from models and prepare a response.

 Template: If needed, the view renders a template with data.

 Response: The rendered HTML or data (JSON) is returned as an HTTP response to the client.

urls.py is **crucial** because it acts as the **router** in a Django application. It maps **URLs (requested by users)** to the corresponding **views** (functions or classes that handle the logic).

Key Roles:

- Organizes routes cleanly and efficiently.
- Allows URL pattern matching with parameters (e.g., /product/<int:id>/)
- Supports modular apps with their own urls.py files.
- Improves scalability and maintainability.