## INSTITUTE OF TECHNOLOGY,

## NIRMA UNIVERSITY

# 2CSDE86 Application Development Framework

**PRACTICAL 1**

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**Teacher's Signature :**

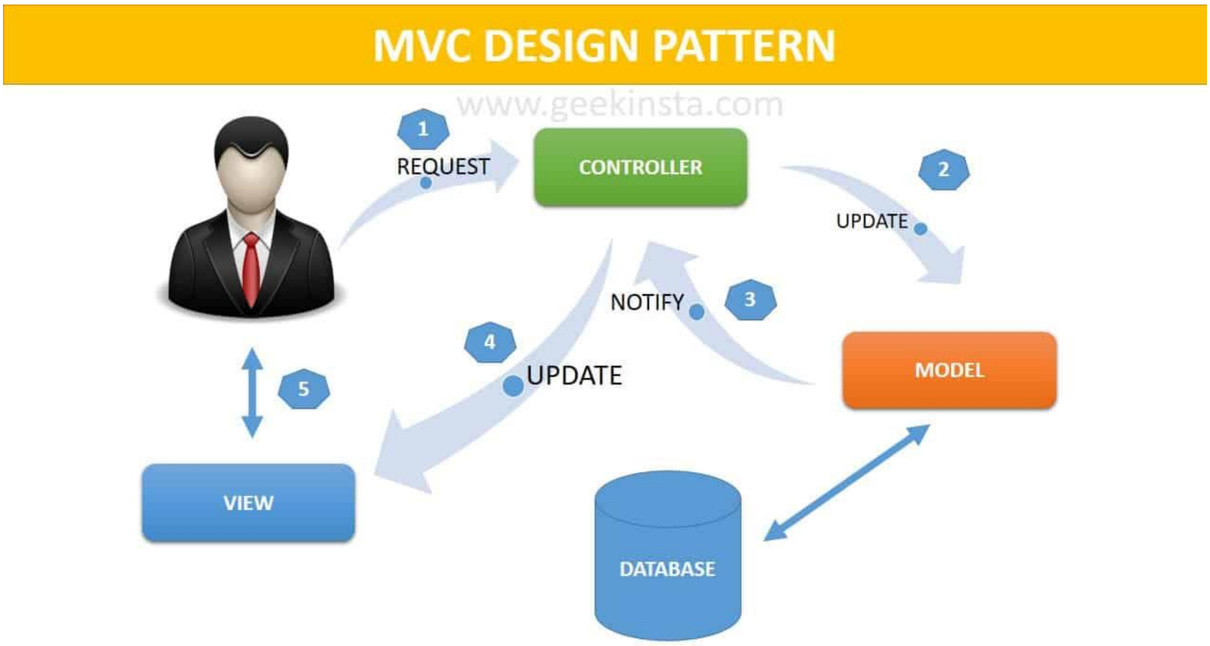
**Aim :** `Introduction to MVC and MVT architecture. Comparative Study on MVC and MVT.`

## MVC (Model View Controller)

- It's software design pattern that is used to implement user interfaces and gives emphasis on separating data representation from the components which interacts and process the data.

It has 3 components and each has specific approach :

- Model is the central component of this architecture and manages the data, logic as well as other constraints of the application.
- View deals with how the data will be displayed to the user and provides various data representation components.
- Controller manipulates the Model and renders the view by acting as a bridge between both of them.



Advantages:

- Makes it easy to develop large applications
- Easy for multiple developers to collaborate and work together.

Disadvantages:

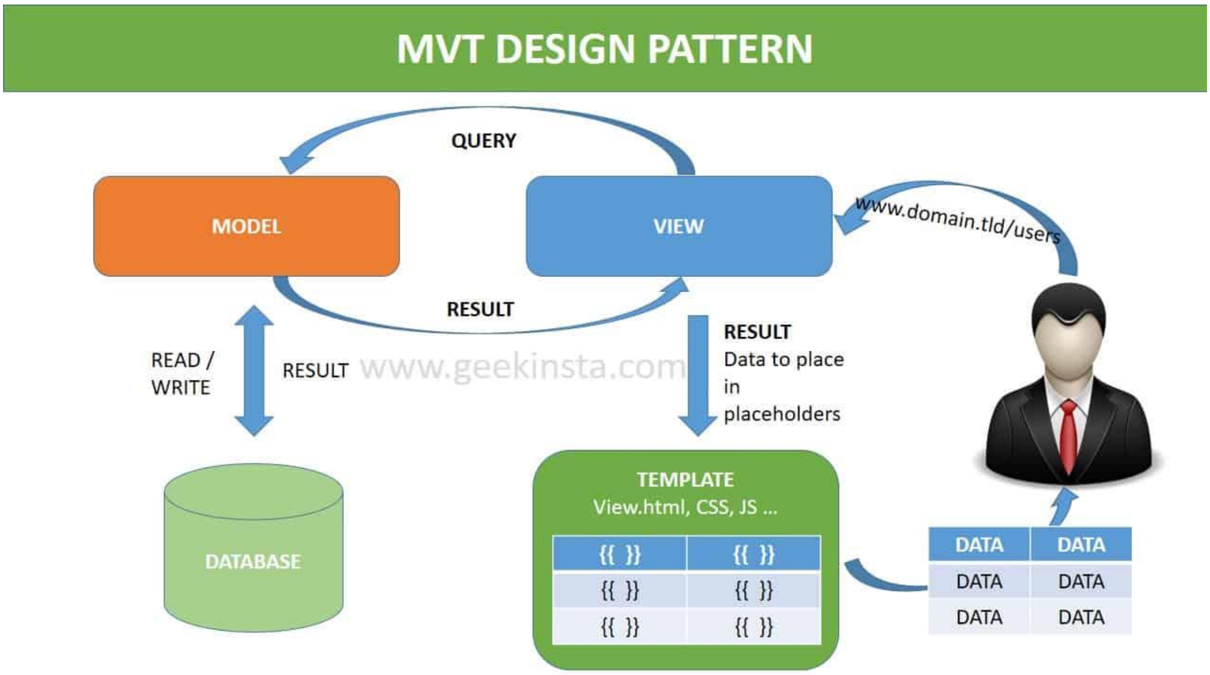
- View is controlled by Model and Controller
- Not suitable for small applications

## MVT (Model View Template)

- Similar to MVC, but in contrast to MVC the controller part is taken care for us by the framework itself.

It has 3 components :

- Model similar to MVC acts as an interface for your data and is basically the logical structure behind the entire web application which is represented by a database such as MySql, PostgreSQL.
- View Executes the business logic and interacts with the model and renders the template. It accepts HTTP request and then return HTTP responses.
- Templates is the component which makes MVT different from MVC. Templates acts as the presentation layer and are basically HTML code that renders the data. Content in these files can be either static on dynamic.



Advantages:

- Less coupled.
- Suitable for small to large-scale applications.
- Easy to Modify.

Disadvantages:

- Sometimes, understanding the flow can be confusing
- Modification of models/views should be done carefully without affecting templates.

MVC V/S MVT

| Model View Controller (MVC) | Model View Template (MVT) |
|---|---|
| MVC has controller that drives both model and view | MVT has views for receiving HTTP request and returning HTTP response |
| View tells how the user data will be presented | Templates are used in MVT for that purpose |
| Highly coupled | Loosely coupled |
| Modifications are difficult | Modifications are easy |
| Suitable for development of large applications but not for small applications | Suitable for both small and large applications |
| Flow is clearly defined thus easy to understand | Flow is sometimes harder to understand as compared to MVC |
| It doesn’t involve mapping of URLs | URL pattern mapping takes place |
| Ex: Spring MVC | Ex: Django |