

CLOUD COMPUTING

Cloud Application Design

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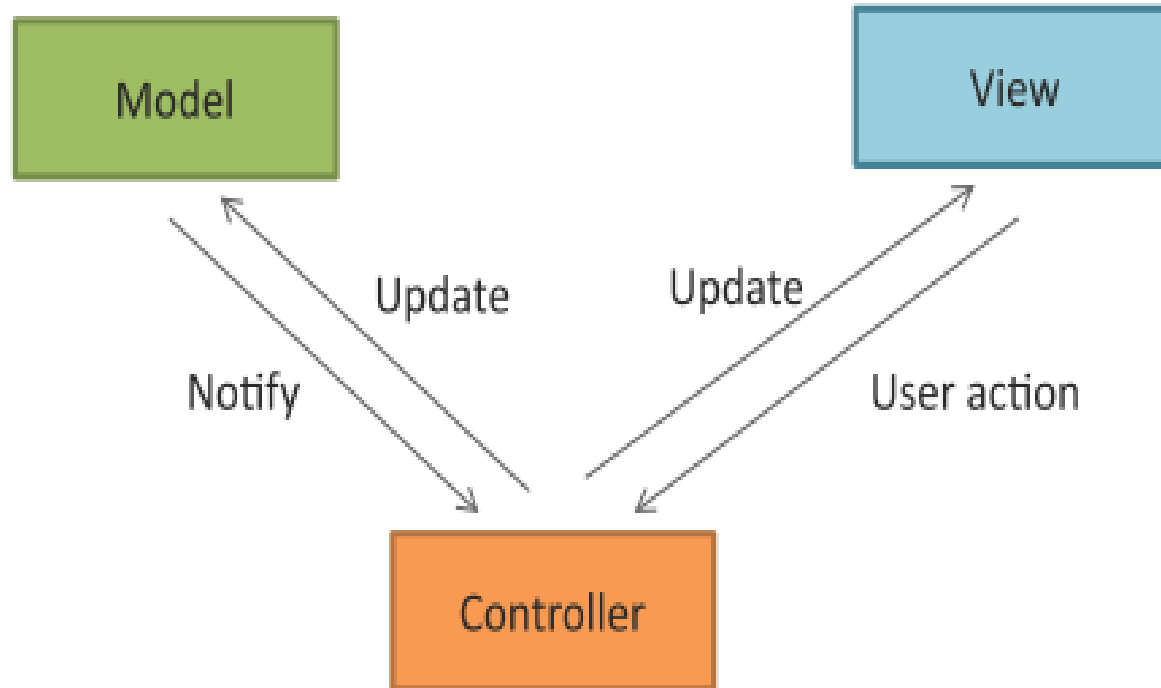
- Model View Controller (MVC) is a popular software design pattern for web applications
- Model
 - Model manages the data and the behavior of the applications
 - Model processes events sent by the controller
 - Model has no information about the views and controllers
 - Model responds to the requests for information about its state (from the view) and responds to the instructions to change state (from controller)

- View
 - View prepares the interface which is shown to the user
 - Users interact with the application through views
 - Views present the information that the model or controller tell the view to present to the user and also handle user requests and sends them to the controller

- Controller
 - Controller glues the model to the view
 - Controller processes user requests and updates the model when the user manipulates the view
 - Controller also updates the view when the model changes

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Model View Controller



- Representational State Transfer (REST) is a set of architectural principles by which you can design web services and web APIs that focus on a system's resources and how resource states are addressed and transferred
- The REST architectural constraints apply to the components, connectors, and data elements, within a distributed hypermedia system
- A RESTful web service is a web API implemented using HTTP and REST principles

- The REST architectural constraints are as follows:
 - Client-Server
 - Stateless
 - Cacheable
 - Layered System
 - Uniform Interface
 - Code on demand

- Django is an open source web application framework for developing web applications in Python
- A web application framework in general is a collection of solutions, packages and best practices that allows development of web applications and dynamic websites
- Django is based on the Model-Template-View architecture and provides a separation of the data model from the business rules and the user interface
- Django provides a unified API to a database backend

- Thus web applications built with Django can work with different databases without requiring any code changes
- With this flexibility in web application design combined with the powerful capabilities of the Python language and the Python ecosystem, Django is best suited for cloud applications
- Django consists of an object-relational mapper, a web templating system and a regular-expression-based URL dispatcher

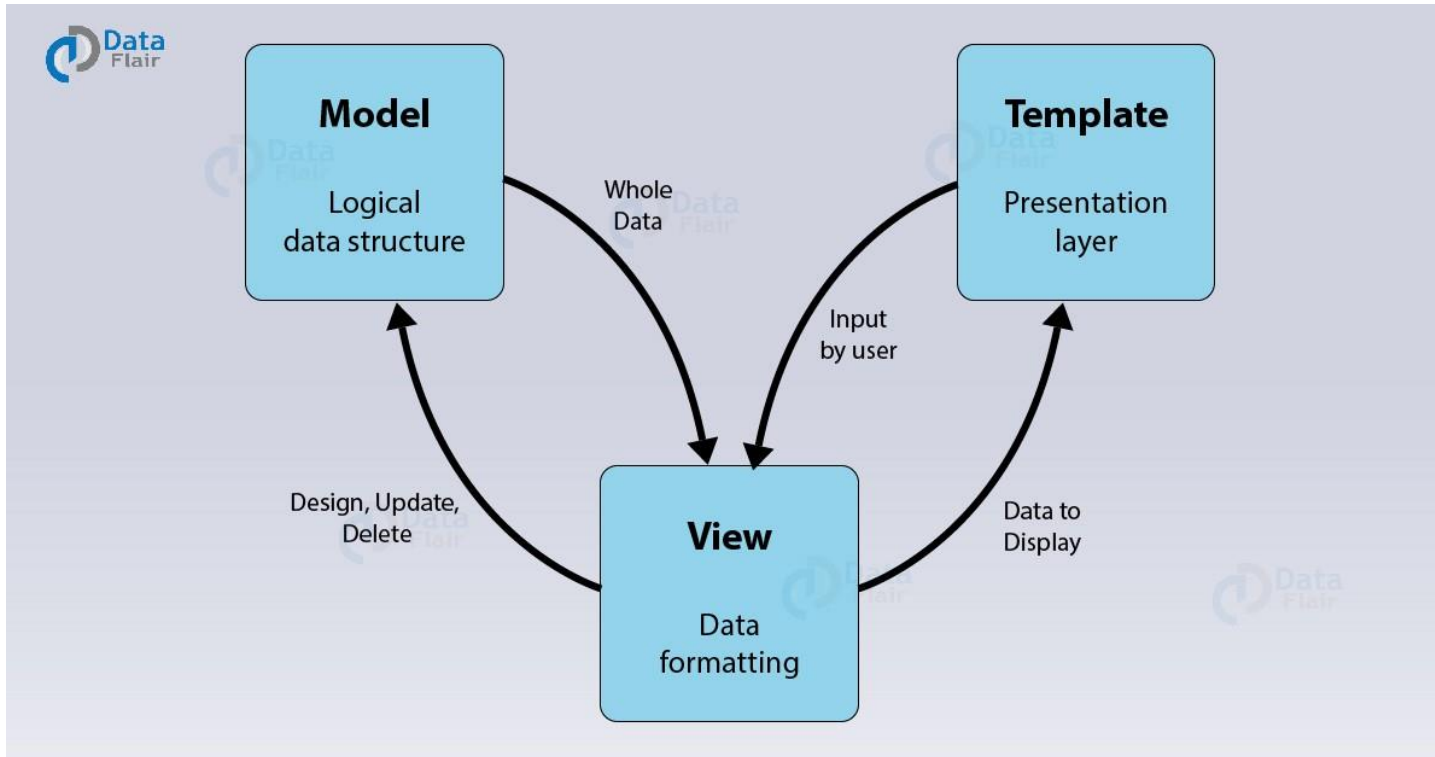
- Django is Model-Template-View (MTV) framework
- Model
 - The model acts as a definition of some stored data and handles the interactions with the database.
 - In a web application, the data can be stored in a relational database, non-relational database, an XML file, etc.
 - A Django model is a Python class that outlines the variables and methods for a particular type of data

- Template
 - The template is simply an HTML page with a few extra placeholders.
 - Django's template language can be used to create various forms of text files (XML, email, CSS, Javascript, CSV, etc.)

- View
 - The view ties the model to the template.
 - The view is where you write the code that actually generates the web pages.
 - View determines what data is to be displayed, retrieves the data from the database and passes the data to the template

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Django Architecture





THANK YOU

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