CRUDL and MVC Part I

What is CRUDL

When managing any list of entities, we commonly need 5 basic operation

- **C**reate or **Add** one to the list
- **R**ead or **Get** one from the list
- **U**pdate or **Modify** one in the list
- **D**elete or **Remove** one from the list
- **L**ist all items

A Todo List as an Example

- Adding a todo to the list (Create)
- Reading a todo's details from the list (Read)
- Changing the todo's status to complete (Update)
- Deleting a todo from the list (Delete)
- Getting all todos in the list (List)

We would likely need to do the same with products, books, contacts or any other entity we manage in our app…

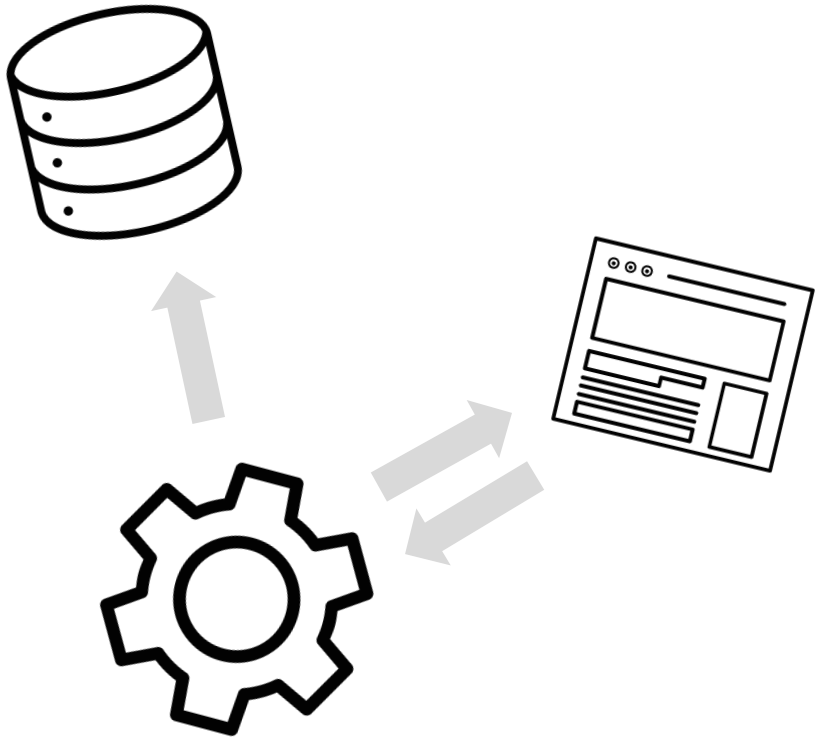
MVC: Model - View - Controller

As our apps get more complex,
we will find it beneficial to separate our code into layers
with a well defined interface between them

As long as that interface remains unchanged
We can freely change their internal implementations

MVC: Model - View - Controller

- The **Model** layer manages all data related operations
- The **View** layer implements display and user interaction
- The **Controller** coordinates between the Model & View layers



The Model Layer

- Responsible for managing our application's data
- This can be an array in memory, or any form of storage
- An interface to CRUDL operations is implemented as a **service**
- As long as this interface remains unchanged, the internal implementation of the service can be modified

The Controller Layer

- Responds to events from the View (DOM)
- Renders the View (DOM)
- Calls a service which exposes an interface to the for all data related operations (Model)

Separation of Concerns

- MVC provides good separation between the layers of our application.
- If the **View** layer is changed, the Model layer remains unaffected.
- If the **Model** layer is changed, the View layer remains unaffected
- Only the **Controller** layer will need to make adjustments

- In order for this to work - the Service **never** calls the controller

Let’s Build a Todo App

Our Model

```
{
  id: 't101',
  txt: 'Do this',
  isDone: false,
}
```

Our View