Large Scale Development in MATLAB

Thomas MONTAGNON
Senior Consultant
MathWorks
Thomas.montagnon@mathworks.fr
Model-View-Controller Pattern
What are we going to cover?

- Refresh on MATLAB class system
- Create objects with convenient APIs
- Why using the Model-View-Controller (MVC) pattern?
- How to implement MVC in MATLAB?
Handles and Values

- Built-in types
- Mutability
- Life cycle
Events and Listeners

- Built-in events
- Listener callback
- Custom events
What are we going to cover?

- Refresh on MATLAB class system
- Create objects with convenient APIs
- Why using the Model-View-Controller (MVC) pattern?
- How to implement MVC in MATLAB?
Create object with convenient APIs
Custom Chart

- Use object composition
- Hide low-level APIs behind dependent properties
- Manage object life cycle
- Expose layout properties (Parent, Units, Position)

Benefits:
- Presents a convenient API
- Enables use both interactively and within applications
What are we going to cover?

- Refresh on MATLAB class system
- Create objects with convenient APIs
- Why using the Model-View-Controller (MVC) pattern?
- How to implement MVC in MATLAB?
Why using Model-View-Controller Pattern

- Enables separation of logic and presentation
- Enables separation of parts of presentation
What are we going to cover?

- Refresh on MATLAB class system
- Create objects with convenient APIs
- Why using the Model-View-Controller (MVC) pattern?
- How to implement MVC in MATLAB?
HeartZoneView

StripChartView

Model

Player

MapView

Event notification

Property access, method call
How to implement Model-View-Controller in MATLAB?

- Model is a handle class
- Model exposes events
How to implement Model-View-Controller in MATLAB?

- View/controller is constructed with and stores listeners to a model.
How to implement Model-View-Controller in MATLAB?

- Model is a handle class
- Model exposes events
- View/controller is constructed with and stores listeners to a model
Layout Management

- GUI Layout Toolbox

Key Take Aways

- Object oriented programming in MATLAB will help you scale your applications
- Create objects that expose convenient APIs
- Use Model-View-Controller pattern
Questions?