TypeScript Outline

# Introduction

* What is TypeScript?

# Demo #1 - Introduction

* TypeScript Playground
  + Person class -> firstName, lastName, fullName(), introduce()
* Copy/paste person to Visual Studio - show Web Essentials
  + Show: constructor type annotations
  + Auto-implemented properties with “public” on constructor
* Type Annotations / Type Inference (variables.ts)
  + Cover number, Boolean, any (mention null & undefined)
  + Add “age” property – Show type annotation with/without assignment initialization
* Properties
  + Convert fullName() to property – show ES5 setting (error on ES3)
  + Source Maps – enable in VS.NET, enable in chrome, set breakpoint in fullName
* Functions
  + Full getBirthYear() function. Point out inference
  + Add Type annotation for Person
  + Remove function keyword, curly braces, return keyword
  + Functional declaration: **var getBirthYear: (person: Person) => number;**
  + Copy getBirthYear inside class to show arrow function
  + Add “age” to constructor and add default value for “optional params”
* Interfaces
  + Show IPerson with getBirthYear() function
  + Show normal. Then with object literal and optional arguments.
* Inheritance
  + Employee extends Person -> add “title” property (point out “extends” function)
  + Add constructor with “title”
  + Override “introduce” method

# Demo #2 – Playbook

* Back to PPT
* Add “viewmodels” folder -> “playbook.tagsviewmodel.ts” (put inside module)
* Add tags property – point out lack of KO support – add “knockout.d.ts” (and jQuery)
* PPT to explain definition and ambient declarations?
* Make “tags” strongly typed -> KnockoutObservableArray
* **Snippet-ts1**: “httpclient.ts”
* “playbook.bootstrapper.ts”
  + Include references
  + Import Utils namespace
  + Get data, instantiate tagsViewModel, ko.applyBindings()
* **Snippet-ts2**: initial Bundle files
* **Snippet-ts3**: initial Index
* Index page: add data-bind=“foreach: tags” and “text: name”
* Add/Delete
  + tagToAdd – show with type identifier then with inference from assignment
  + addTag() – push onto “tags” observable Array – DEMO
    - value: tagToAdd, valueUpdate: 'afterkeydown'"
    - data-bind="click: addTag"
  + deleteTag() – show problem with this pointer; convert to arrow function
* Edit/Cancel
  + selectedTag and selectTag() -> add click to item-row
  + **Snippet-ts4**: tagDialog (without Save/Cancel click handlers)
  + Need to make properties observable – create TagItem class.
  + Show problem with cancel
  + **Snippet-ts5**: EditableItem inheritance
  + editTagCancel() and editTagSave() arrow functions
* Complete the app
  + **Snippet-ts6**: DrillsViewModel
  + **Snippet-ts7**: TagsViewModelFull (with http calls)
  + **Snippet-ts8**: ViewModel
  + **Snippet-ts9**: IndexRemaining
  + Bootstrapper: change to main ViewModel
  + Fix up Bundle

# Demo – AMD Modules

* Change TS settings to: Use the AMD module -> true
* File order: httpclient, editableitem, tagsviewmodel, drillsviewmodel, viewmodel
* Remove module declarations and “///<references/> “
  + Point out references to requires
* **Snippet-ts10**: main.ts (in “App” folder)
* playbook.bootstrapper – add **run()** function and fix up imports
* Index – remove “~/bundles/app” – add:
  + <script data-main=”/app/main” src=”require.js”></script>