**F# for Data**

1. Introduction to the Lab (5 minutes)
   1. Me and Tom Introductions
   2. REPL/IDE = VS Code (install VS Code) or Notebooks = Azure Notebooks (Get An Azure Subscription)
   3. Code from GitHub
2. Introduction to F# Language (20 minutes)
   1. Overview Slides
      1. Inferred Typed Language
      2. Immutable by default
      3. Minimalistic in syntax
   2. Hands On - Common tasks
      1. Assigning values
      2. Creating a named function
      3. Creating an sequence
      4. Use a high ordered functions with a named function
      5. Use a high ordered functions with a lambda
      6. Chaining high order functions
      7. Creating a type: Discriminated Unions, Records, and Tuples
3. Introduction to Type Providers (20 minutes)
   1. Overview Slides
   2. Hands On
      1. .csv provider
      2. .json provider
      3. .sql provider
4. Introduction to Data Manipulation (20 minutes)
   1. Overview Slides
   2. Hands On
      1. Selecting
      2. Filtering
      3. Sorting
      4. Mapping
      5. Grouping
      6. Merging
      7. Parallel
5. Choose Your Own Adventure
   1. Introduction to Data Validation (20 minutes)
      1. Overview Slides
      2. Hands On
         1. Bind Monad
         2. Composing Functions
   2. Introduction to Machine Learning/AI (20 minutes)
      1. Overview Slides
      2. Hands On
         1. Accord .NET
         2. Kaggle example
6. Wrap Up (5 minutes)