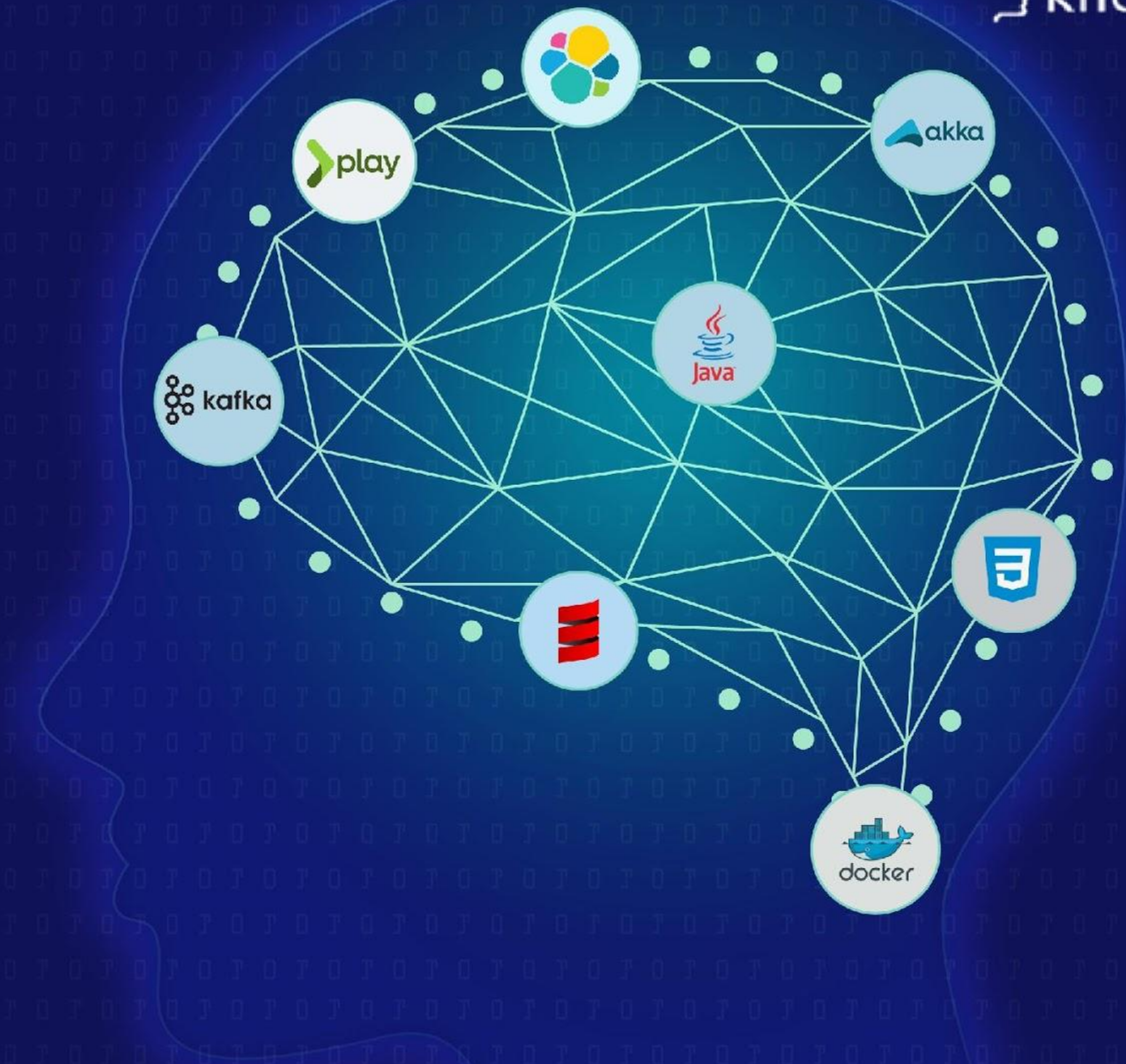
Classes & Properties



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Agenda

- Creating a Primary Constructor
- Controlling the Visibility of Constructor Fields
- Defining Auxiliary Constructors
- Defining a Private Primary Constructor
- Providing Default Values for Constructor Parameters

Creating a Primary Constructor

Problem

We want to create a primary constructor for a class, and we will see that the approach is different than Java.

Creating a Primary Constructor

Solution

The primary constructor of a Scala class is a combination of:

- The constructor parameters.
- Methods that are called in the body of the class.
- Statements and expressions that are executed in the body of the class.

Creating a Primary Constructor

Example

Demo

Controlling the Visibility of Constructor Fields

Problem

We want to control the visibility of fields that are used as constructor parameters in a Scala class.

Controlling the Visibility of Constructor Fields

Solution

The visibility of constructor fields in a Scala class is controlled by whether the fields are declared as val, var, without either val or var, and whether private is also added to the fields:

- If a field is declared as a var, Scala generates both getter and setter methods for that field.
- If the field is a val , Scala generates only a getter method for it.
- If a field doesn’t have a var or val modifier, Scala gets conservative, and doesn’t generate a getter or setter method for the field.
- Additionally, var and val fields can be modified with the private keyword, which prevents getters and setters from being generated.

Controlling the Visibility of Constructor Fields

Example

Demo

Defining Auxiliary Constructors

Problem

We want to define one or more auxiliary constructors for a class to give consumers of the class different ways to create object instances.

Defining Auxiliary Constructors

Solution

There are several important points to its recipe:

- Auxiliary constructors are defined by creating methods named this.
- Each auxiliary constructor must begin with a call to a previously defined constructor.
- Each constructor must have a different signature.
- One constructor calls another constructor with the name this.

Defining Auxiliary Constructors

Example

Demo

Defining a Private Primary Constructor

Problem

We want to make the primary constructor of a class private, such as to enforce the Singleton pattern.

Defining a Private Primary Constructor

Solution

To make the primary constructor private, insert the private keyword in between the class name and any parameters the constructor accepts.

Defining a Private Primary Constructor

Example

Demo

Providing Default Values for Constructor Parameters

Problem

We want to provide a default value for a constructor parameter, which gives other classes the option of specifying that parameter when calling the constructor, or not.

Providing Default Values for Constructor Parameters

Solution

Give the parameter a default value in the constructor declaration.

Providing Default Values for Constructor Parameters

Example

Demo

Overriding Default Accessors and Mutators

Problem

We want to override the getter or setter methods that Scala generates for us.

Overriding Default Accessors and Mutators

Solution

The recipe for overriding default getter and setter methods is:

- Create a private var constructor parameter with a name you want to reference from within your class.
- Define getter and setter names that you want other classes to use.
- Modify the body of the getter and setter methods as desired.

Overriding Default Accessors and Mutators

Example

Demo

Preventing Getter and Setter Methods from Being Generated

Problem

When we define a class field as a var, Scala automatically generates getter and setter methods for the field, and defining a field as a val automatically generates a getter method, but we don’t want either a getter or setter.

Preventing Getter and Setter Methods from Being Generated

Solution

Define the field with the private or private[this] access modifiers

Preventing Getter and Setter Methods from Being Generated

Example

Demo

Assigning a Field to a Block or Function

Problem

We want to initialize a field in a class using a block of code, or by calling a function.

Assigning a Field to a Block or Function

Solution

Set the field equal to the desired block of code or function. Optionally, define the field as lazy if the algorithm requires a long time to run.

Assigning a Field to a Block or Function

Example

Demo

Q/A

Thanks