

Working with Java



Sander Mak

Java Champion

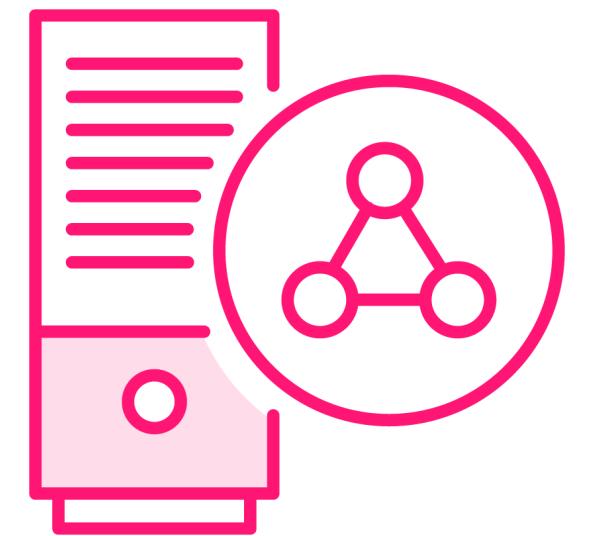
@sander_mak



Java's Various Uses



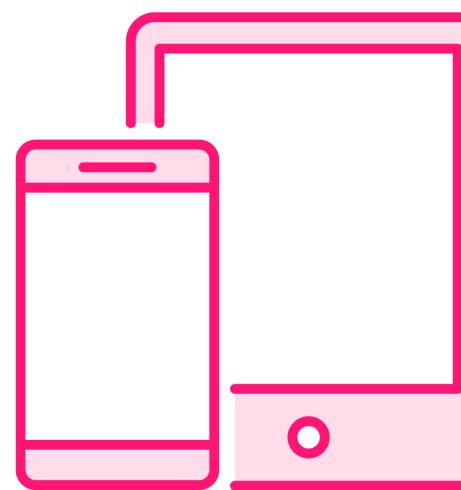
Desktop



Enterprise applications



Cloud services



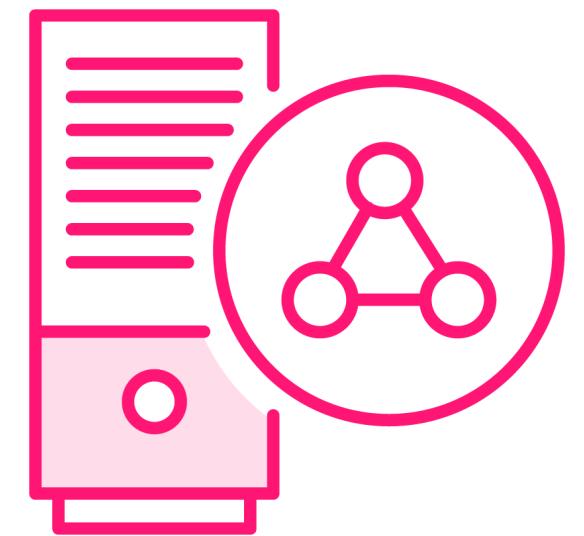
Kotlin

Android development

Java's Various Uses



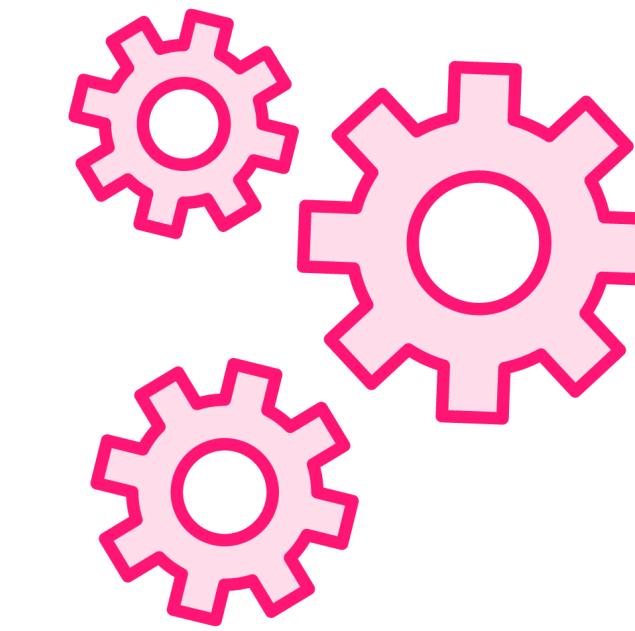
Desktop



Enterprise applications



Cloud services



Language features

Desktop Java Development

Swing

Pure Java-based UI controls

Cross-platform look & feels

The screenshot shows the IntelliJ IDEA interface with the following details:

- Project Bar:** Shows the project path: intelliJ-community > platform > core-api > src > com > intelliJ > lang > folding > LanguageFolding.java.
- Toolbars:** Standard IntelliJ toolbars for navigation, search, and file operations.
- Code Editor:** The main window displays the `LanguageFolding.java` file. The code implements methods for querying folding regions based on language and building descriptors for a folding builder.

```
49     /**
50      * Only queries base language results if there are no extensions for originally requested
51      */
52     @NotNull
53     @Override
54     public List<FoldingBuilder> allForLanguage(@NotNull Language language) {
55         for (Language l = language; l != null; l = l.getBaseLanguage()) {
56             List<FoldingBuilder> extensions = forKey(l);
57             if (!extensions.isEmpty()) {
58                 return extensions;
59             }
60         }
61         return Collections.emptyList();
62     }
63
64     @NotNull
65     public static FoldingDescriptor[] buildFoldingDescriptors(@Nullable FoldingBuilder builder)
66         if (!DumbService.isDumbAware(builder) && DumbService.getInstance(root.getProject()).isDumb)
67             return FoldingDescriptor.EMPTY;
68
69
70     if (builder instanceof FoldingBuilderEx) {
71         return ((FoldingBuilderEx)builder).buildFoldRegions(root, document, quick);
72     }
73     final ASTNode astNode = root.getNode();
74     if (astNode == null || builder == null) {
75         return FoldingDescriptor.EMPTY;
76     }
77
78     return [
79         builder.buildFoldRegions(astNode, Document document) FoldingDescriptor[]
80         FoldingDescriptor.EMPTY (com.intellij.lang... FoldingDescriptor[])
81     ]
82 }
```

- Bottom Status Bar:** Shows the current time as 78:12, encoding as LF, and character set as UTF-8.

IntelliJ IDEA

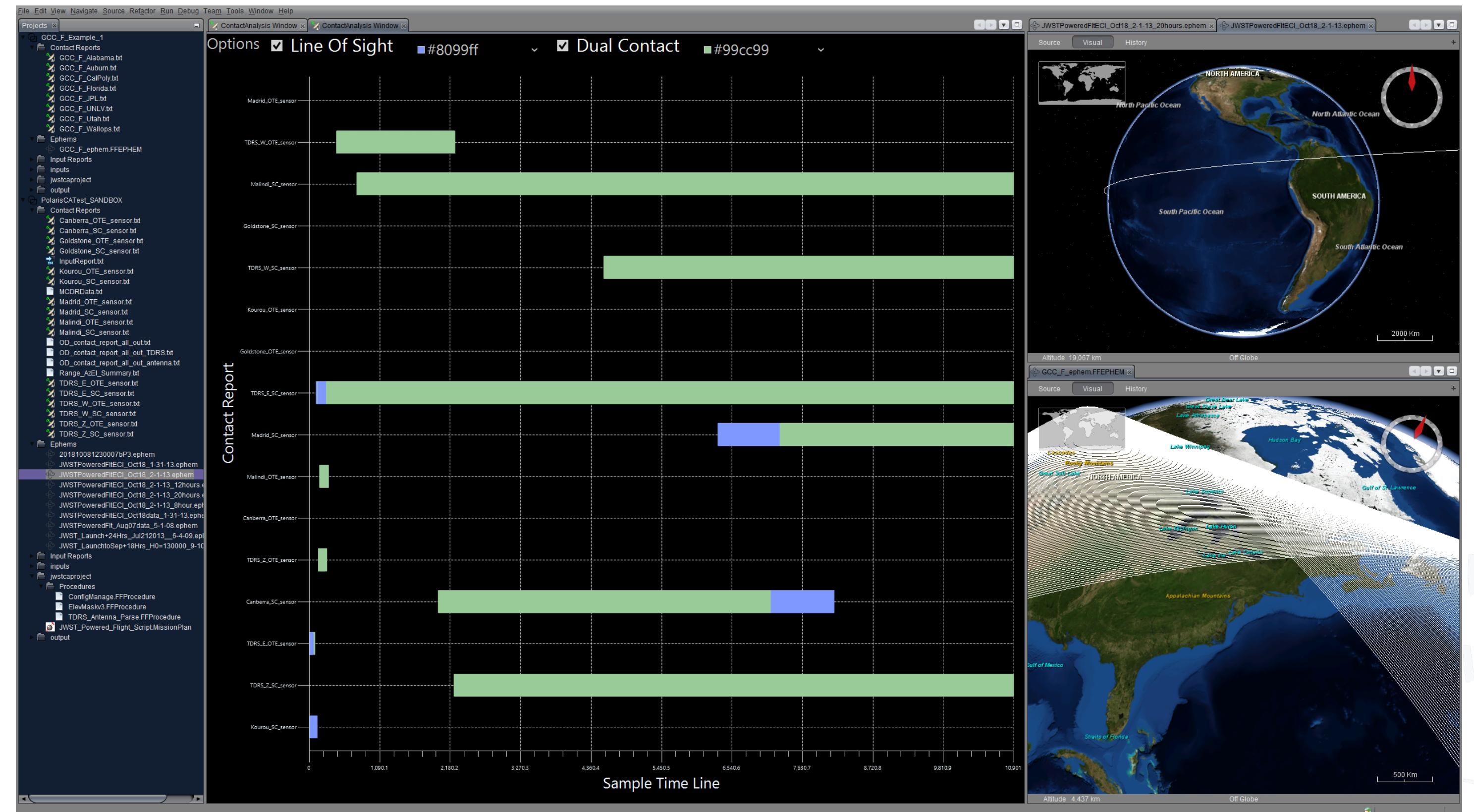
JavaFX

FXML

Advanced controls

Animations & 3D graphics

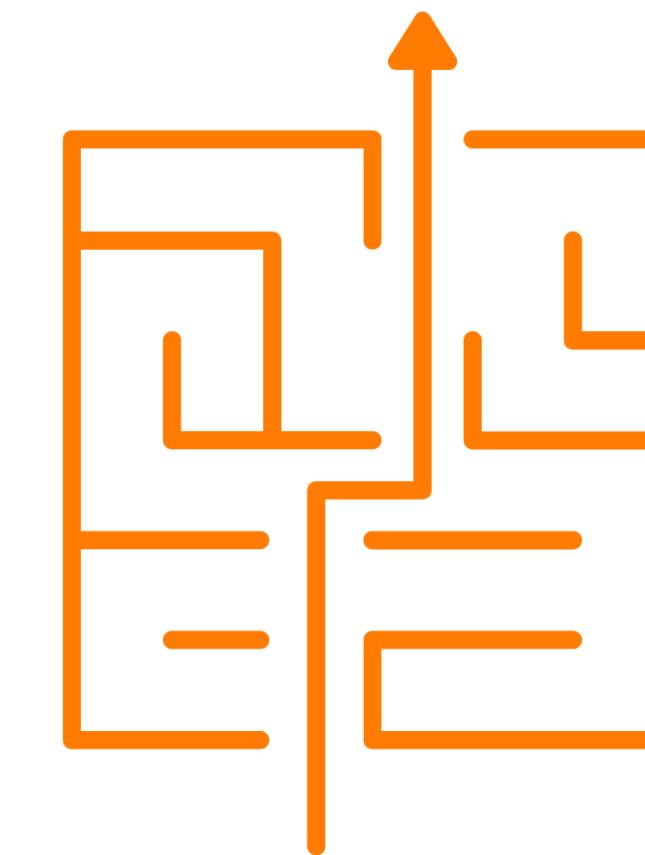
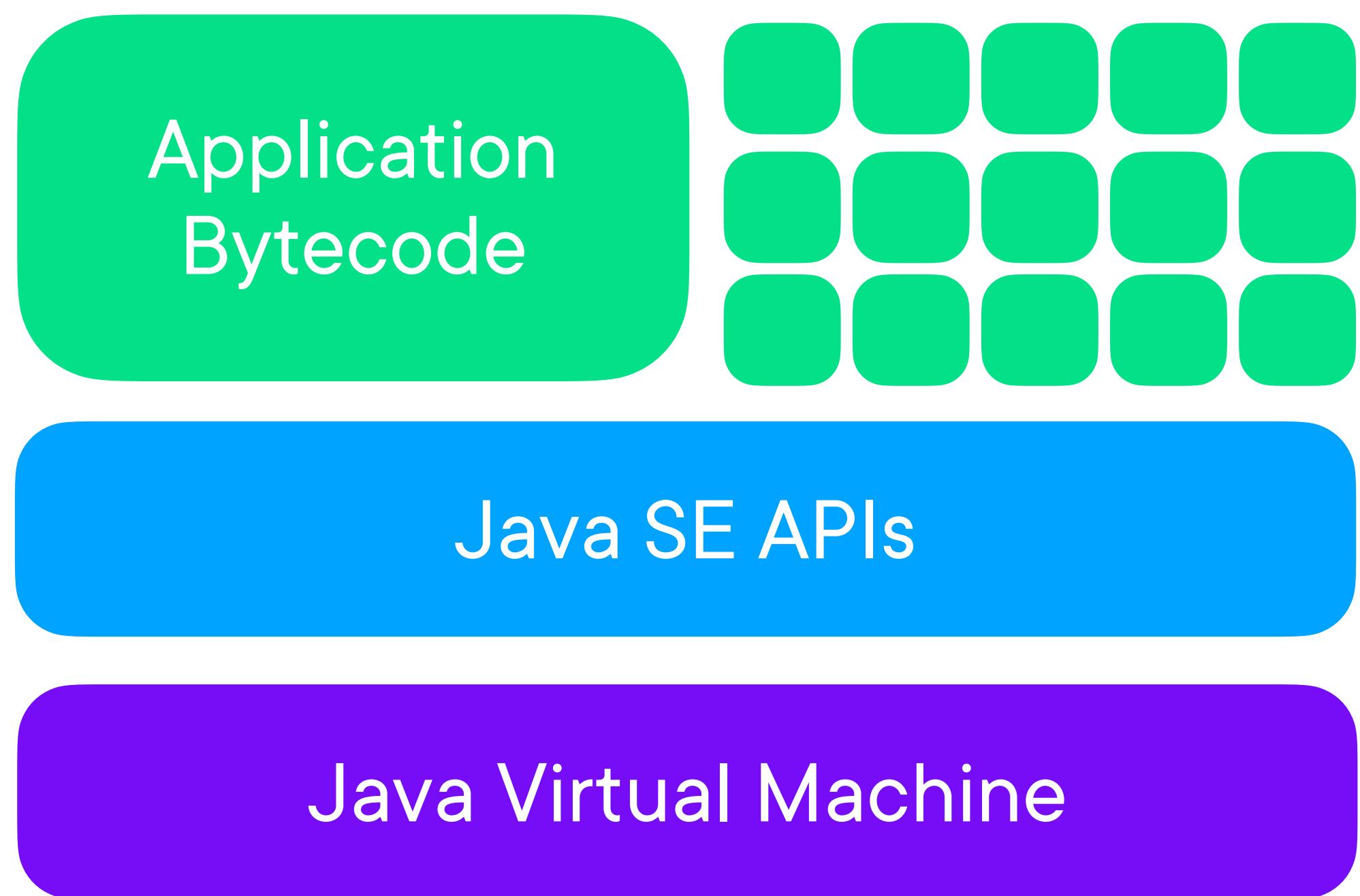
Skinnable using CSS



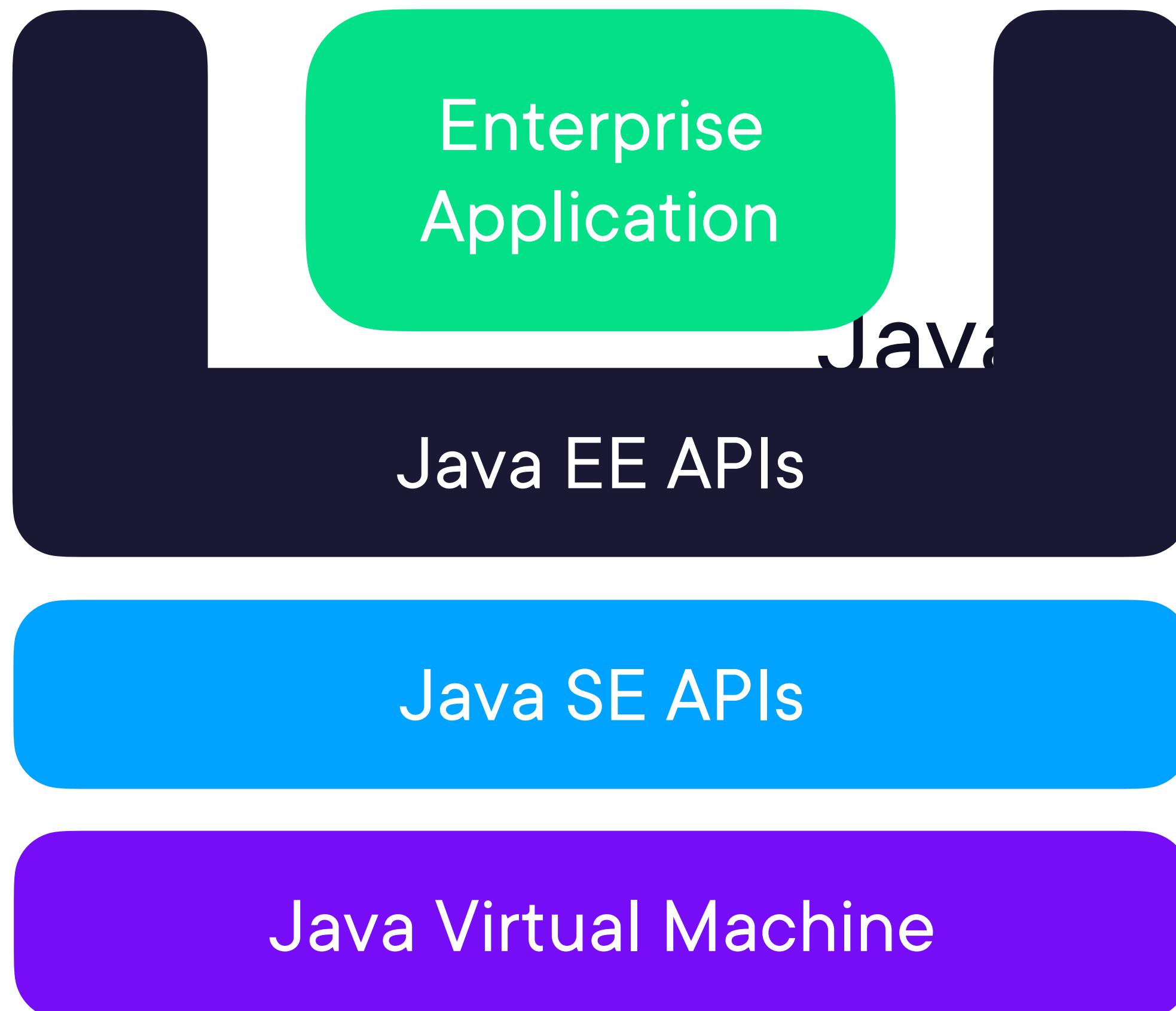
James Webb Space Telescope Trajectory Explorer Ground System

OpenJFX as of Java 11

Enterprise Java

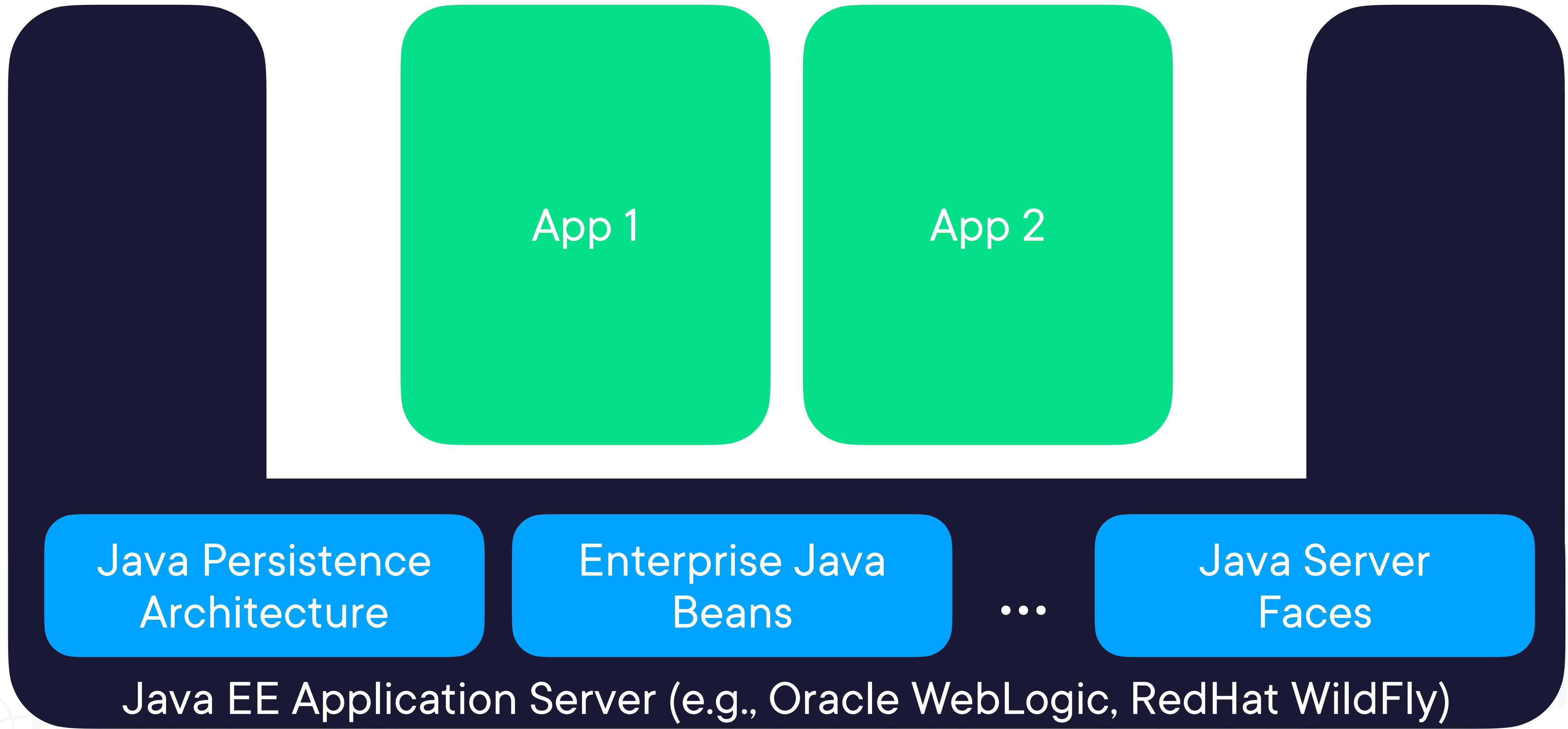


Java EE



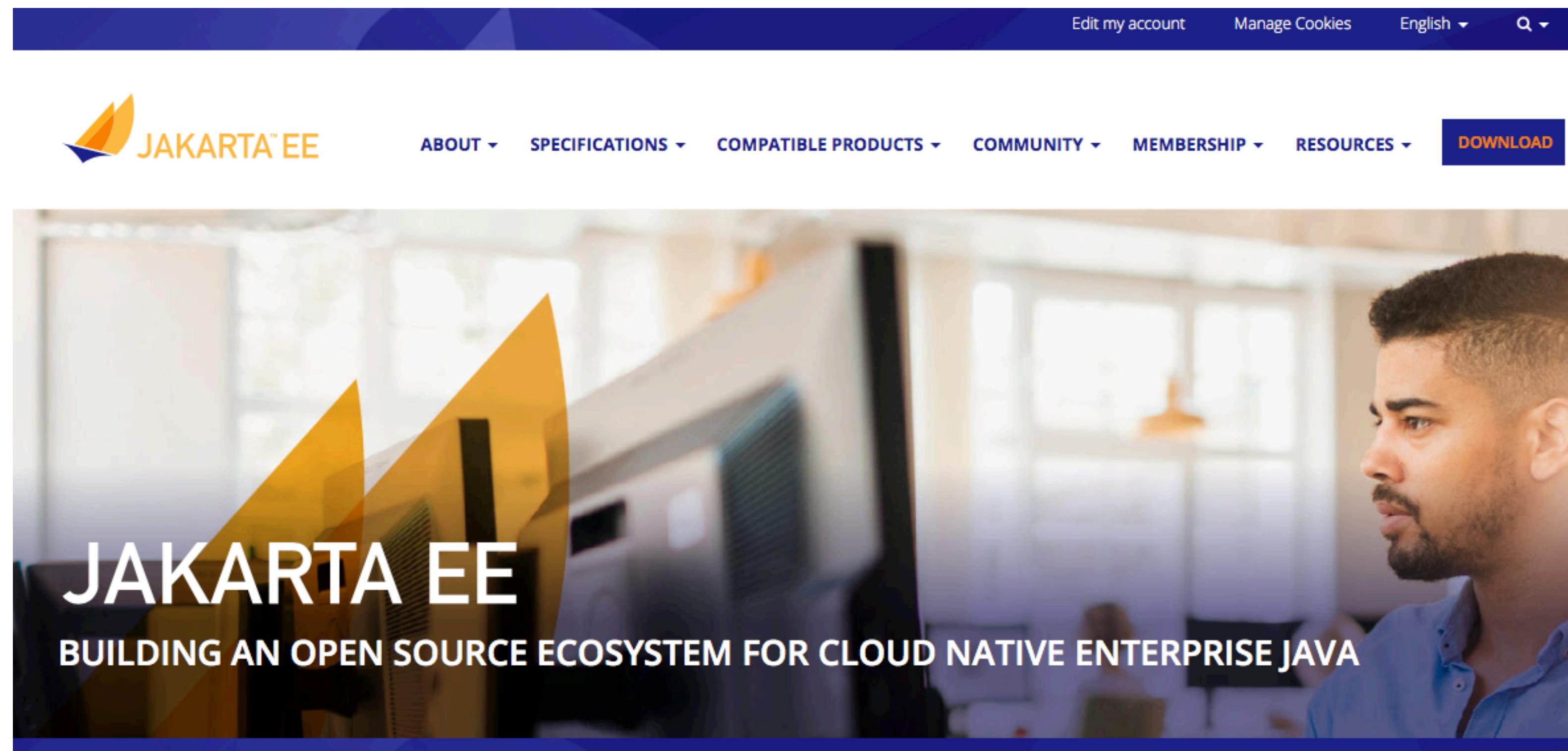
Data persistence
Web applications
Messaging
JSON/XML handling

Java EE: Application Server



Jakarta EE

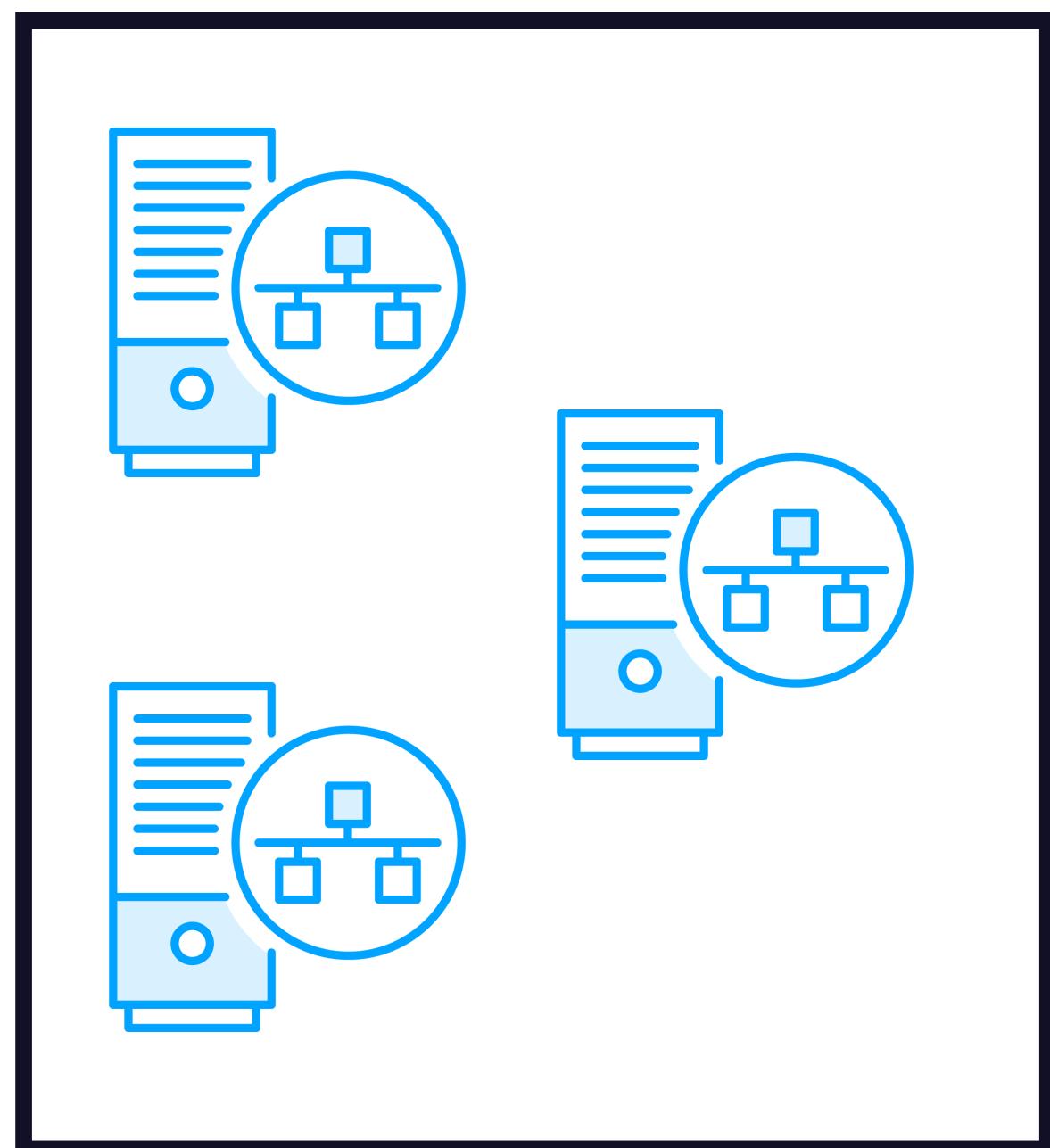
Java EE 8 last Oracle release, transition to Eclipse Foundation



<https://jakarta.ee>

Java in the Cloud

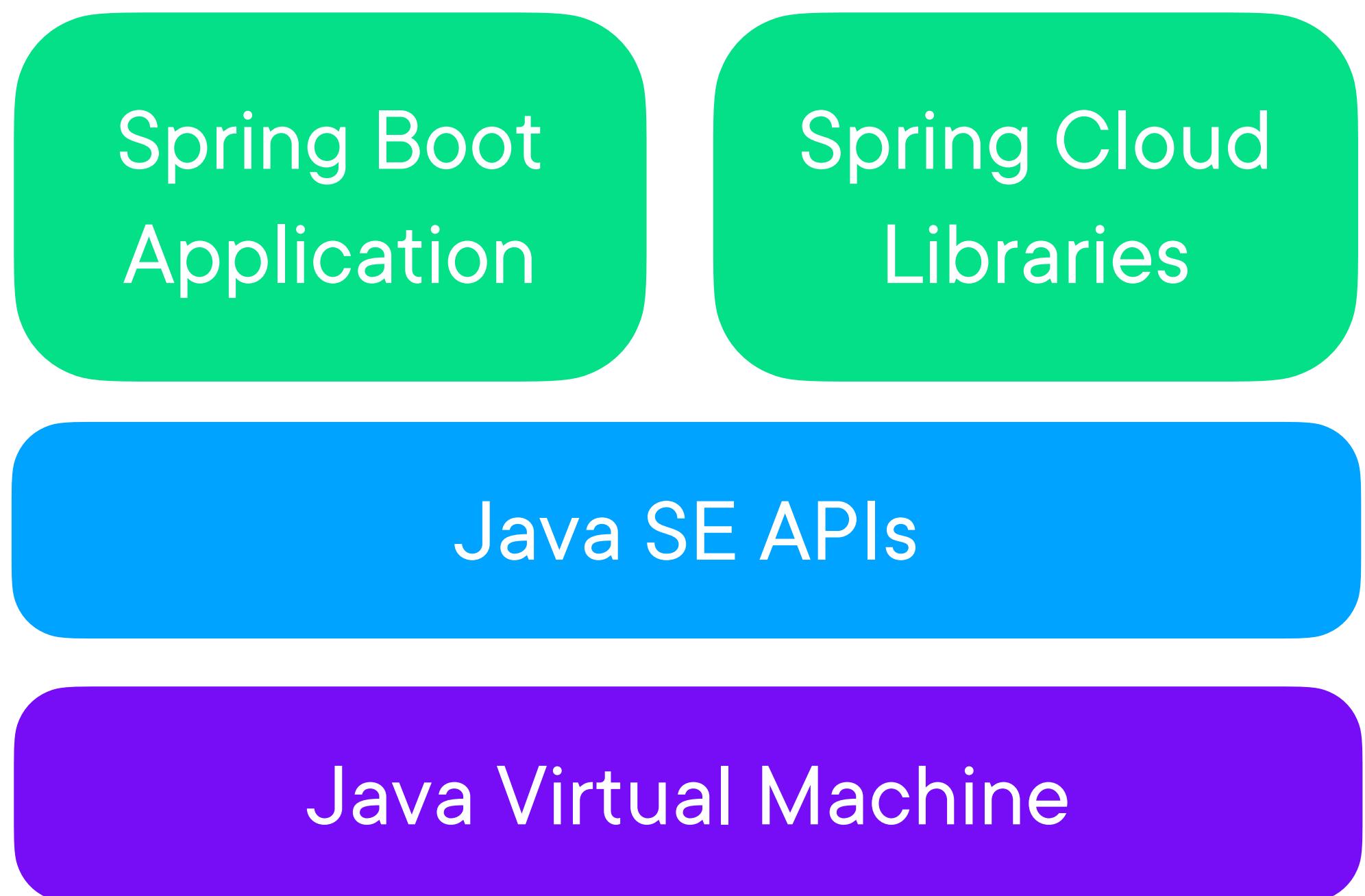
Datacenter



Cloud Native:
Microservices
in the cloud



Java in the Cloud



Microframeworks

Spring Boot

MicroProfile

Vert.x

Quarkus

Working with Java: Language Features



Functional Java



Lambdas

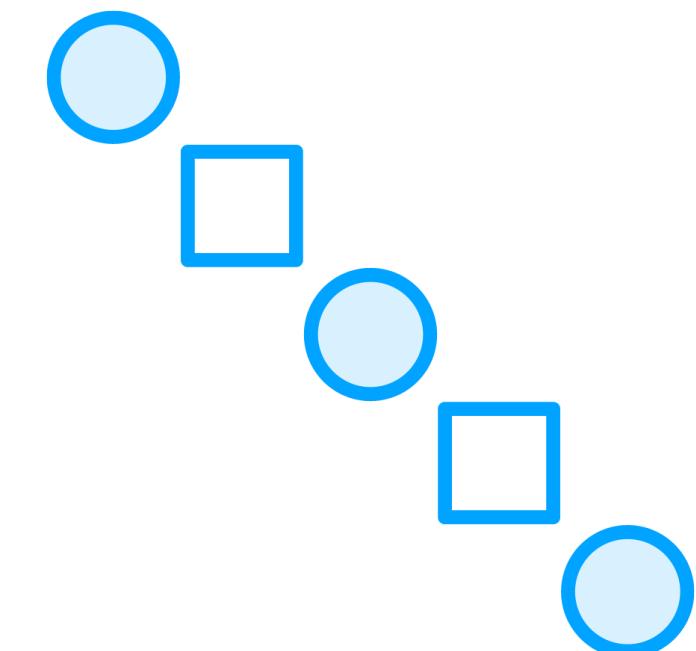
```
Function<Integer, Integer> increment =  
(Integer value) -> value + 1;
```

Represent functions without classes (methods)

Pass functions to methods

Compose functions freely

Functional Java

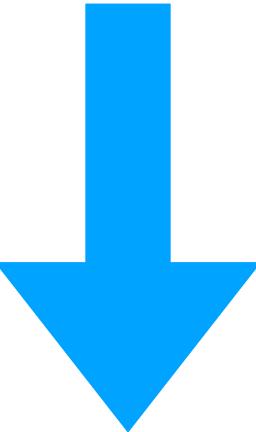


Streams

JShell

Type Inference

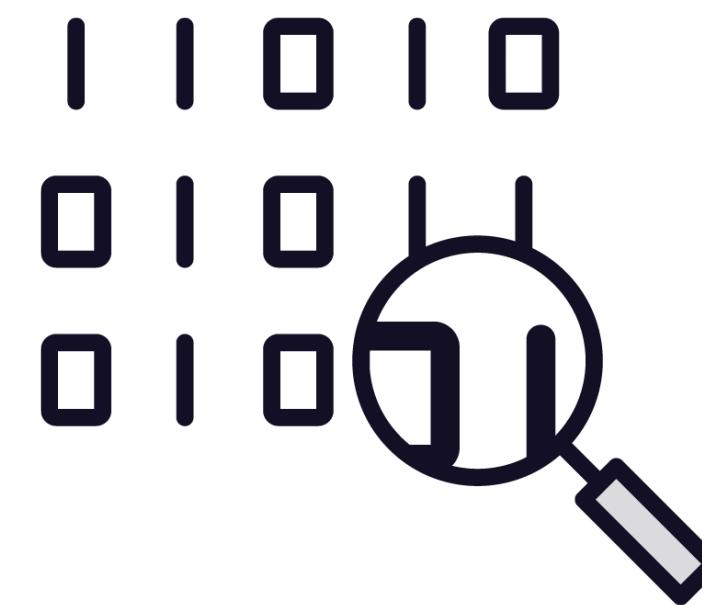
```
URL url = new URL("https://pluralsight.com");
URLConnection connection = url.openConnection();
BufferedInputStream inputStream =
    new BufferedInputStream(connection.getInputStream());
```



```
var url = new URL("https://pluralsight.com");
var connection = url.openConnection();
var inputStream =
    new BufferedInputStream(connection.getInputStream());
```

Records

Data-only classes



Product

name

vendor

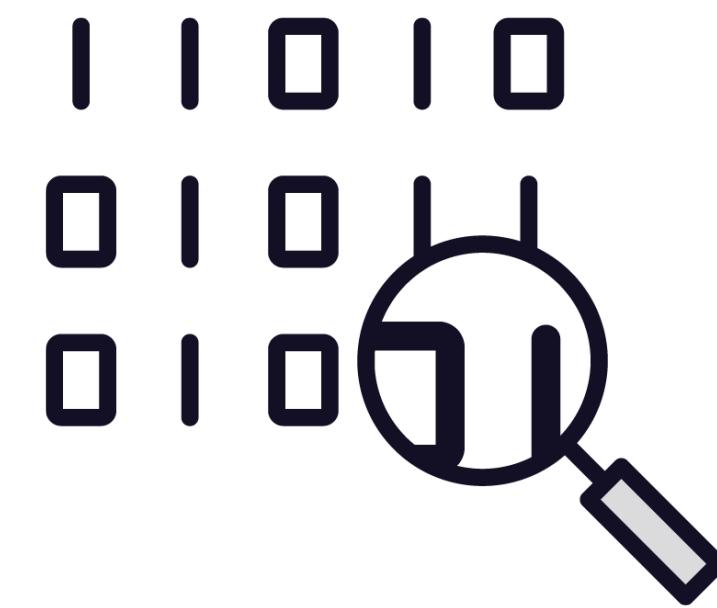
price

inStock

```
public Product(String name, String vendor, int price, boolean inStock) {  
    this.name = name;  
    this.vendor = vendor;  
    this.price = price;  
}  
  
@Override  
public boolean equals(Object o) {  
    if (this == o) return true;  
    if (o == null || getClass() != o.getClass()) return false;  
    Product product = (Product) o;  
    return price == product.price &&  
        inStock == product.inStock &&  
        Objects.equals(name, product.name) &&  
        Objects.equals(vendor, product.vendor);  
}  
  
@Override  
public int hashCode() {  
    return Objects.hash(name, vendor, price, inStock);  
}  
  
@Override  
public String toString() {  
    return "Product{" +  
        "name='" + name + '\'' +  
        ", vendor='" + vendor + '\'' +  
        ", price=" + price +  
        ", inStock=" + inStock +  
        '}';  
}  
  
return inStock;  
}  
  
public void setInStock(boolean inStock) {  
    this.inStock = inStock;  
}
```

Records

Data-only classes



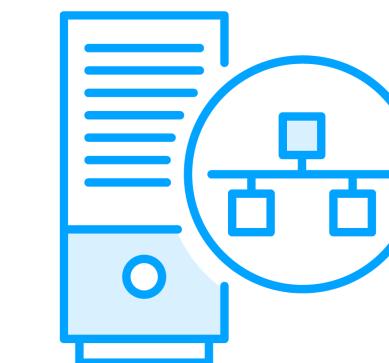
Working with Java: Language Features



Summary



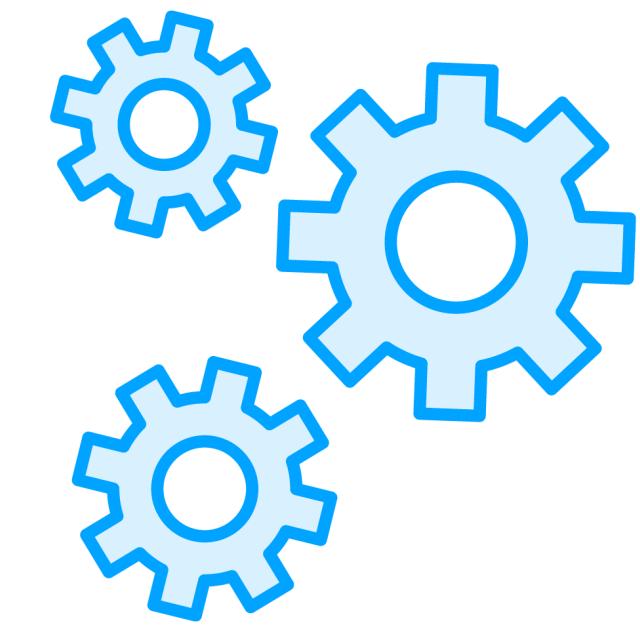
Swing & JavaFX



Enterprise Java



Microframeworks



Language features