



Java FX

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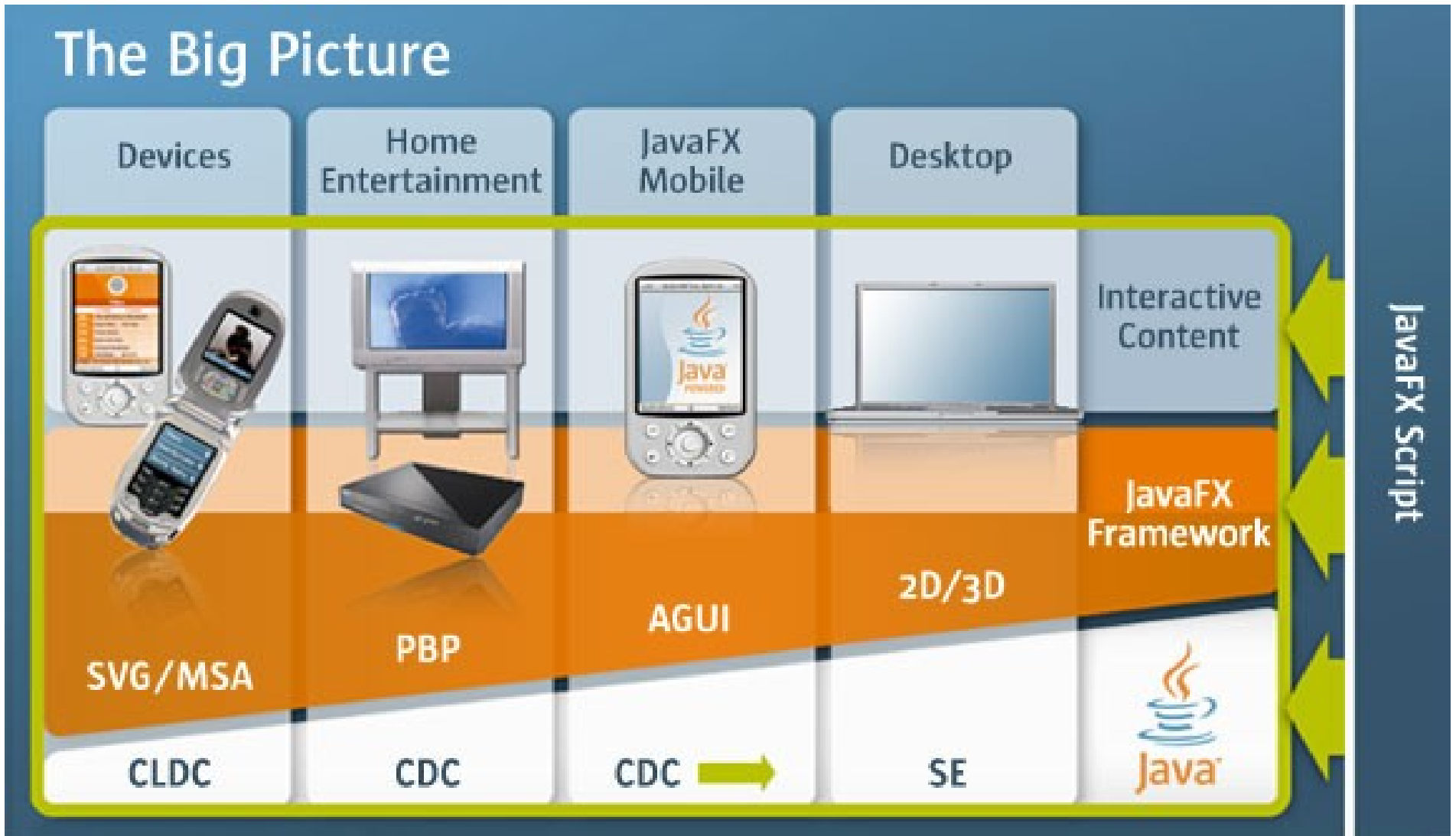
What is Java FX ?

- It's a scripting language by Sun Microsystems.
- Ability to call Java API's directly
- Static typed and Declarative
- For more visit, open FX website

Why Java FX ?

- Concentrating on Client application.
- Not just UI, we are talking of User Experience.
- Better animation, better network services and user created contents.
- Apps of the future desktop, web, phone and Television.

FX Framework Interaction



Hello World !!!

- `import javafx.ui.*;`

```
Frame {  
    title: "Hello World JavaFX"  
    width: 200  
    height: 100  
    content: Label {  
        text: "Hello World"  
    }  
    visible: true  
}
```

Statically typed Language

- `var myvariable = "JavaFX";`
`myvariable = 123;`
- Dynamic Retyping of variable will not work fine.
- Will work fine in JavaScript

Declarative Scripting Language

- No main() method.
- Determines the path of execution “formulaically” at runtime.
- The scripting engine reads the entire program just before execution, then allows the interpreter to take whatever steps are necessary to run the program correctly

Netbeans < FX support >

- Can easily plugged with Netbeans 5.5+
 - > https://openjfx.dev.java.net/Getting_Started_With_JavaFX.html
- Demo

Class Creation

- Class ClassName extends Base1,Base2
- Different from Pure Java in extends.
- Inside the class:
 - > attribute attribute_name: type;
 - > function function_name: return type;
 - > operation operation_name:return type;
- Demo

Cardinality Specification

- We can define cardinality with the attribute
 - > attribute child: Person*;
 - > [* | + | ?] – multivalued attributes
 - > inverse clause – bidirectional relation with other attributes.
 - > Automatically update the attribute by insert, delete or replace.
 - > attribute AttributeName [: AttributeType] [? | + | *] [inverse
ClassName.InverseAttribute]
- Demo

Function, Operation

- Ideally function should work as getter.
- Series of variable declaration and one return statement.
- Operations are analogous to method in Java. It can contain conditions like if, else and loops like for, while. Also contains try, catch blocks.
- Demo

Do & Do Later

- Do – Everyone know ☺
- do later { ... }
 - > Asynchronous execution of body
 - > Very similar to `java.awt.EventQueue.invokeLater()`;
 - >

```
do later { // some code here }  
        { // some code after do later }
```
- Demo

Triggers

- Unlike Java, FX don't have anything like constructors.
- Use trigger
 - > Write trigger on new Object
 - > Trigger on insert
 - > Trigger on delete
 - > Replace Trigger
- Usage is very similar to SQL Trigger

Incremental Evaluation

- Allows Programmer to define Dynamic GUI declaratively.
- Attribute initializers can be incrementally evaluated with the bind operator.
- Very similar to shell in spread sheet. Just not a value, more like a formula.
- `field = bind obj1.field;`
- Function is always incremental
- Demo

FX – Remote connection using RMI

- JavaFX platform can encompass the entire client
 - > MyClient.fx
- Server side coding can be done in Core java
 - > ServerImpl.java
 - > ServerMain.java
 - > ServerInterface.java
- JVM takes care of Stub and Skelton from JDK5+

FX- Client Server communication

- Advance Topic.

- Questions or Any suggestion!