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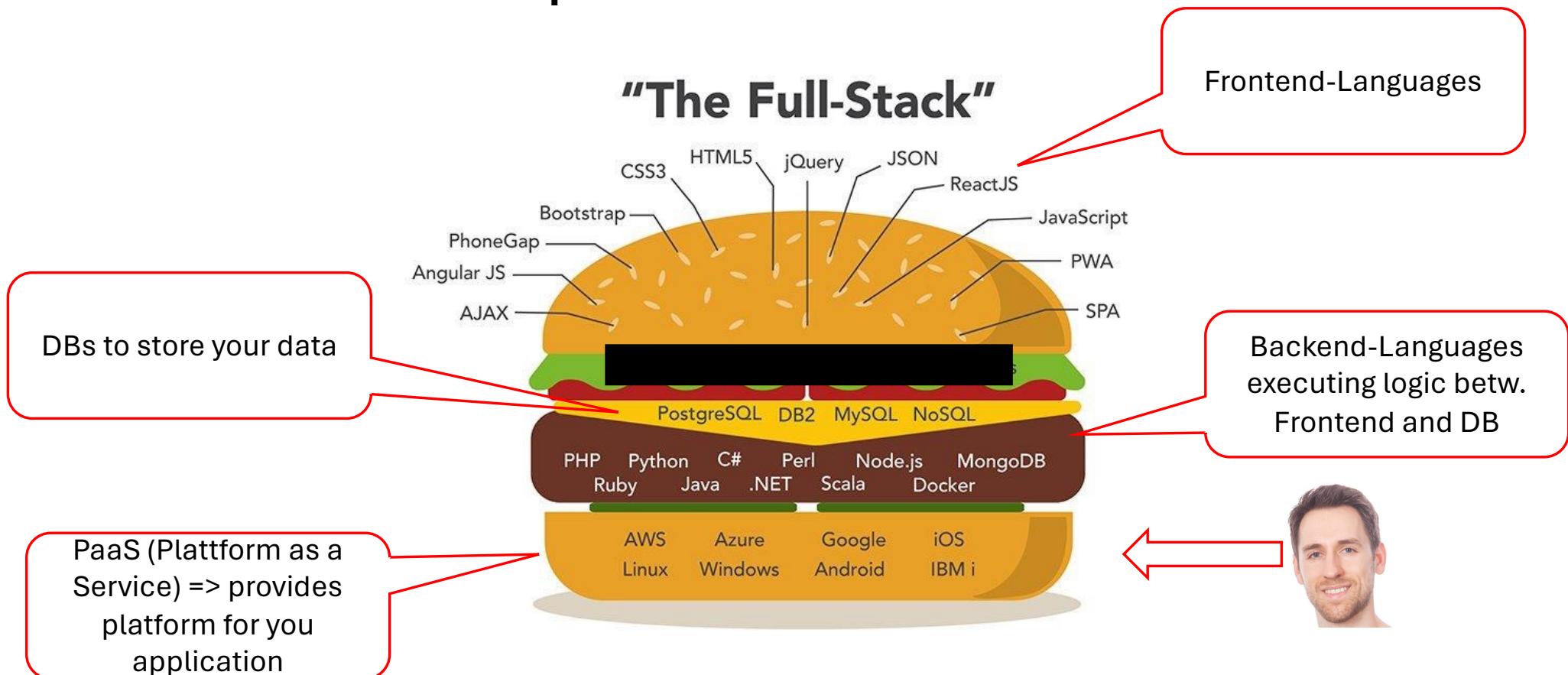
Java 15: AWT I

2024/25 – Sascha Stojanovic

Agenda

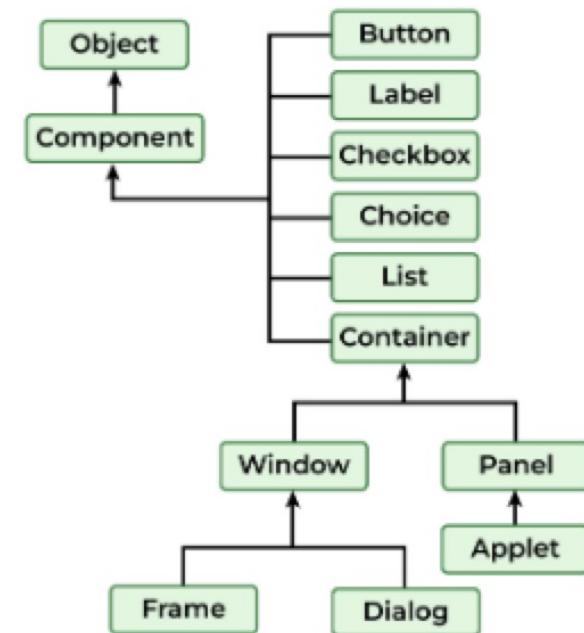
- Different development teams
- AWT development
- AWT Container I + II
- AWT Component I - III
- Exercise

Different development teams



AWT development

- It stands for "abstract window toolkit" and lets you develop graphical user interfaces (GUIs)
- AWT provides components to build your own GUI
- To install it, do the following:
 - Check your settings.json => click on >Java Help Center => click on student => Enable AWT... => Check again your settings.json
 - Now create a GUI folder and add java file AwtExample.java
 - Import these to your code
 - import java.awt.*;
 - import java.awt.event.*;



AWT Container I

Frame:

- The Frame is the container that contains the title bar and border and can have menu bars
- Inside of our Frame are our components



```
class xxx extends Frame  
  
// Setting up the Frame  
setTitle("AWT Demo Application");  
setSize(400, 300);  
setLayout(new FlowLayout());  
...//Your GUI code  
  
setVisible(true); // Make Frame visible  
  
-----  
or without extends Frame  
-----  
  
Frame f1 = new Frame("AWT Demo Application");  
f1.setSize(400, 300);  
f1.setLayout(new FlowLayout());  
...//Your GUI code  
  
f1.setVisible(true); // Make Frame visible
```

AWT Container II - Layouts

FlowLayout is for now our Standard Layout from Left to write:

- `setLayout(new FlowLayout());`

BorderLayout divides container into five regions: NORTH, SOUTH, EAST, WEST, and CENTER and distributes components there:

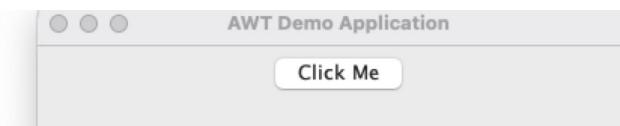
- `setLayout(new BorderLayout());`
- `add(button, BorderLayout.NORTH);`
- `add(textField, BorderLayout.CENTER);`
- `add(label, BorderLayout.SOUTH);`

GridLayout arranges components in a grid of cells with the specified number of rows and columns:

- `setLayout(new GridLayout(3, 1));`

AWT Component I

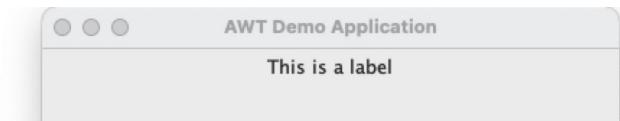
```
// Creating a Button
Button button = new Button(label:"Click Me");
add(button); // Add button to Frame
```



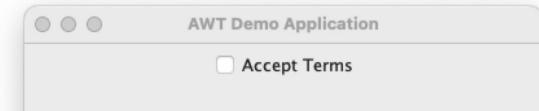
```
// Creating a TextField
TextField textField = new TextField(columns:20);
add(textField); // Add text field to Frame
```



```
// Creating a Label
Label label = new Label(text:"This is a label");
add(label); // Add label to Frame
```

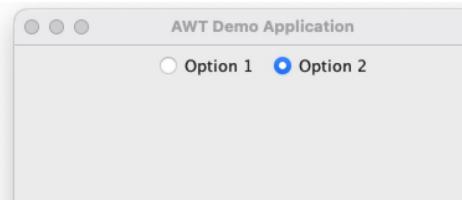


```
// Creating a Checkbox
Checkbox checkbox = new Checkbox(label:"Accept Terms");
add(checkbox); // Add checkbox to Frame
```

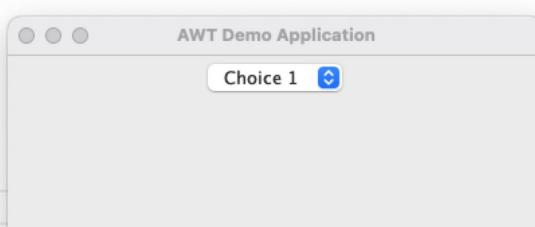


AWT Component II

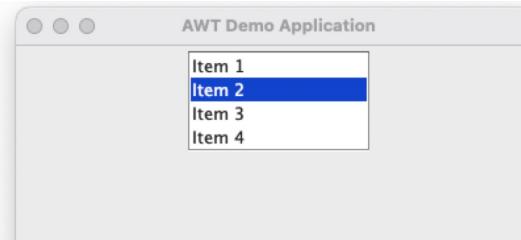
```
// Creating a Checkbox Group
CheckboxGroup cbg = new CheckboxGroup();
Checkbox radio1 = new Checkbox(label:"Option 1", cbg, state:true);
Checkbox radio2 = new Checkbox(label:"Option 2", cbg, state:false);
add(radio1); // Add first radio button to Frame
add(radio2); // Add second radio button to Frame
```



```
// Creating an AWT Choice
Choice choice = new Choice();
choice.add(item:"Choice 1");
choice.add(item:"Choice 2");
choice.add(item:"Choice 3");
add(choice); // Add choice to Frame
```



```
// Creating an AWT List
List list = new List(rows:4, multipleMode:false);
list.add(item:"Item 1");
list.add(item:"Item 2");
list.add(item:"Item 3");
list.add(item:"Item 4");
add(list); // Add list to Frame
```



AWT Component III

```
// Creating an AWT Scrollbar
Scrollbar scrollbar = new Scrollbar(Scrollbar.HORIZONTAL);
add(scrollbar); // Add scrollbar to Frame
```



```
// Creating aMenuBar
MenuBar menuBar = new MenuBar();

// Creating File Menu
Menu fileMenu = new Menu(label:"File");
MenuItem newFile = new MenuItem(label:"New");
MenuItem openFile = new MenuItem(label:"Open");
MenuItem saveFile = new MenuItem(label:"Save");
fileMenu.add(newFile);
fileMenu.add(openFile);
fileMenu.add(saveFile);

// Add Menu to MenuBar
menuBar.add(fileMenu);

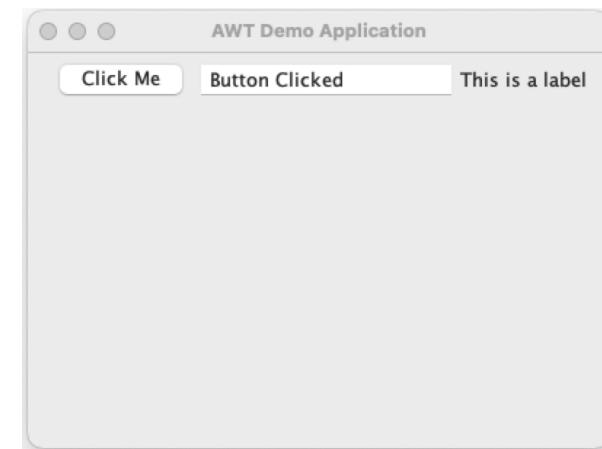
// Set MenuBar for Frame
setMenuBar(menuBar);
```



Exercise (see next slide for helping code)

- Create a class AwtExample.java and extend class “Frame”
- Create a void **object**method called “createHomework”
- Create a public static void main in the same class
- When executing “createHomework” the following GUI should appear:

(Button Clicked appears when button is clicked, not before!!!)



- Now create a second class call AwtExample2.java with one public static void main method
- Create the same example here by adding all code inside of the main method

Tipp: Use object Frame f1 = new Frame("Homework")

Helping code

- For the button to work you will need this code:

```
// Füge einen ActionListener hinzu, der auf Klick auf den Button reagiert
button.addActionListener(new ActionListener() {
    // Diese Methode wird aufgerufen, wenn der Button geklickt wird
    public void actionPerformed(ActionEvent e) {
        // Setze den Text des Textfeldes auf "Button Clicked"
        textField.setText("Button Clicked");
    }
});
```

