Alice with a cup of Java

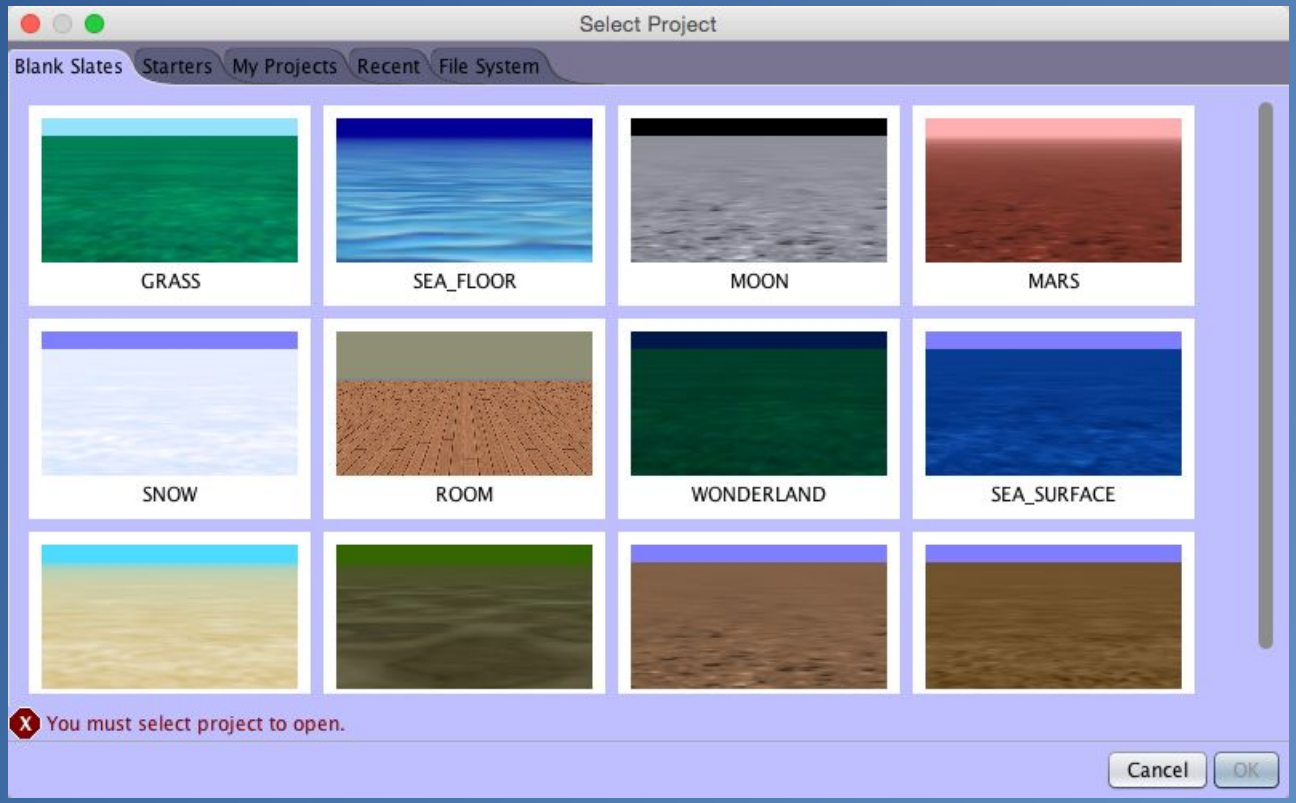
What can I do with Alice

Lets get warmed up

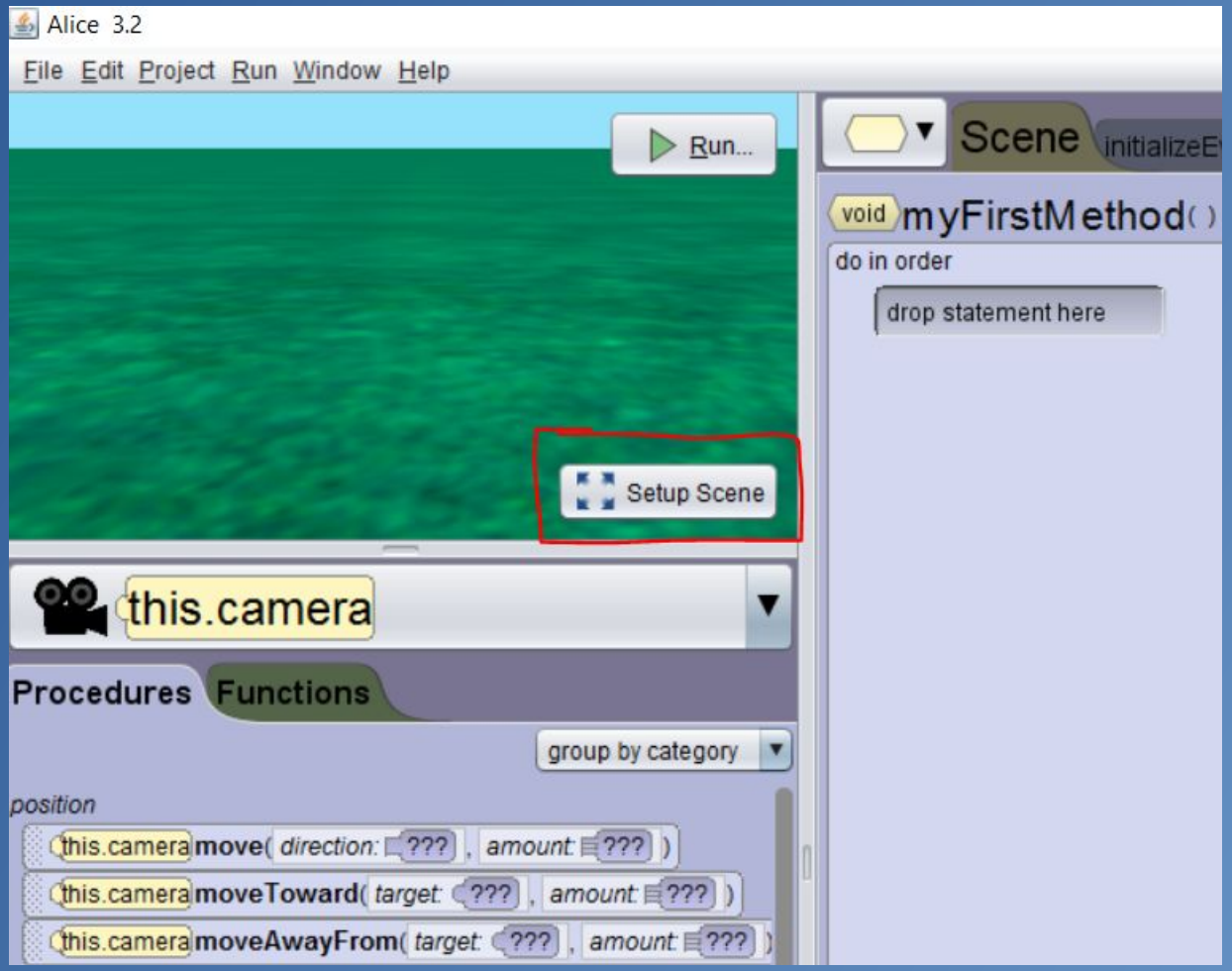
Make sure Alice is installed.

Start Alice

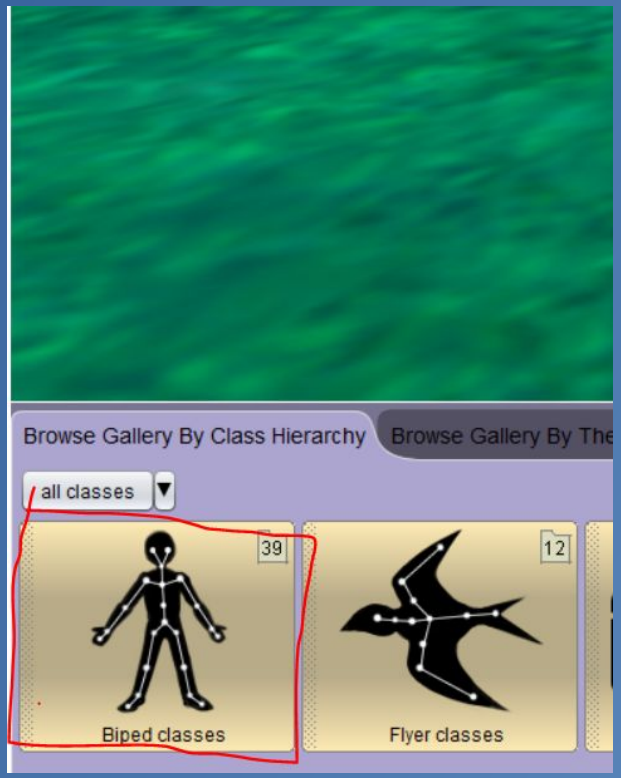
Pick a Landscape



Open Up a scene for editing



Pick your avatar



Customize!!!


Person
life stage:
TODDLER
CHILD
TEEN
ADULT
ELDER
generate random person
gender:
FEMALE
MALE
skin color:
Custom Color...
outfit
top/bottom
hair/hat
face
waistline:

Complete


preview:
final
TeenPerson
teenPerson
new
TeenPerson
new
value type:
TeenPerson
name:
teenPerson
initializer:
new
TeenPerson
new
TeenPersonResource
Gender.MALE
OK
Cancel

Move your avatar around with one shots

Or also using properties

Experiment with different movements

You can always UNDO!

Lets do a cartwheel!

Start with the right arm

Roll or Turn?

How much?

Now the left arm

How about the hips?

Roll or Turn?

How much?

What's really going on here?

Ok lets roll!

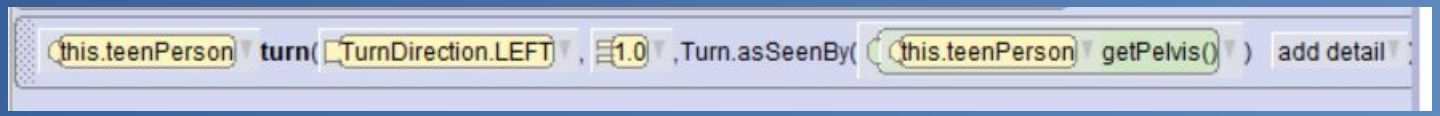
Ok lets roll!

Ok lets turn!

Wait that didn't Work!

We need an axis.

Lets use “as seen by”



And back to the code

```
public void myFirstMethod() {
    this.teenPerson.getRightShoulder().turn( TurnDirection.BACKWARD, 0.375 );
    this.teenPerson.getLeftShoulder().turn( TurnDirection.BACKWARD, 0.375 );
    this.teenPerson.getRightHip().turn( TurnDirection.RIGHT, 0.125 );
    this.teenPerson.getLeftHip().turn( TurnDirection.LEFT, 0.125 );
    this.teenPerson.turn( TurnDirection.LEFT, 1.0, Turn.asSeenBy( this.teenPerson.getPelvis() ) );
}
```

Now we need to move

Doing things at the same time with do Together

```
ThreadUtilities.doTogether( ()-> {
    this.teenPerson turn( TurnDirection.LEFT , 1.0 ,Turn.asSeenBy( this.teenPerson getPelvis() ) add detail );
}, () -> {
    this.teenPerson move( MoveDirection.LEFT , 0.5 ,Move.asSeenBy( this.camera ) add detail );
} );
```

Back to the Code

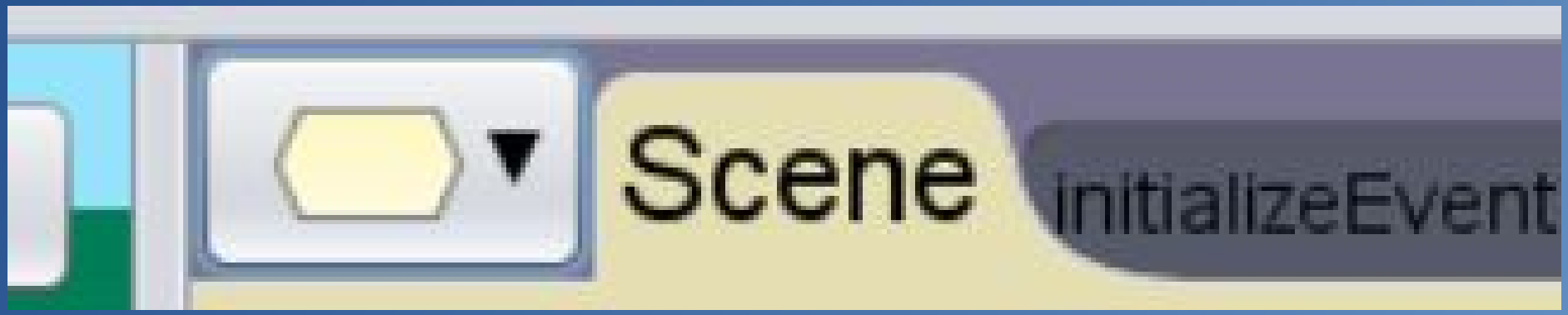
```
public void myFirstMethod() {
    this.teenPerson.getRightShoulder().turn( TurnDirection.BACKWARD, 0.375 );
    this.teenPerson.getLeftShoulder().turn( TurnDirection.BACKWARD, 0.375 );
    this.teenPerson.getRightHip().turn( TurnDirection.RIGHT, 0.125 );
    this.teenPerson.getLeftHip().turn( TurnDirection.LEFT, 0.125 );
    doTogether( ()-> {
        this.teenPerson.turn( TurnDirection.LEFT, 1.0, Turn.asSeenBy( this.teenPerson.getPelvis() ) );
    }, ()-> {
        this.teenPerson.move( MoveDirection.LEFT, 0.5, Move.asSeenBy( this.camera ) );
    } );
}
```

And we have a cartwheel!

Again! Again!

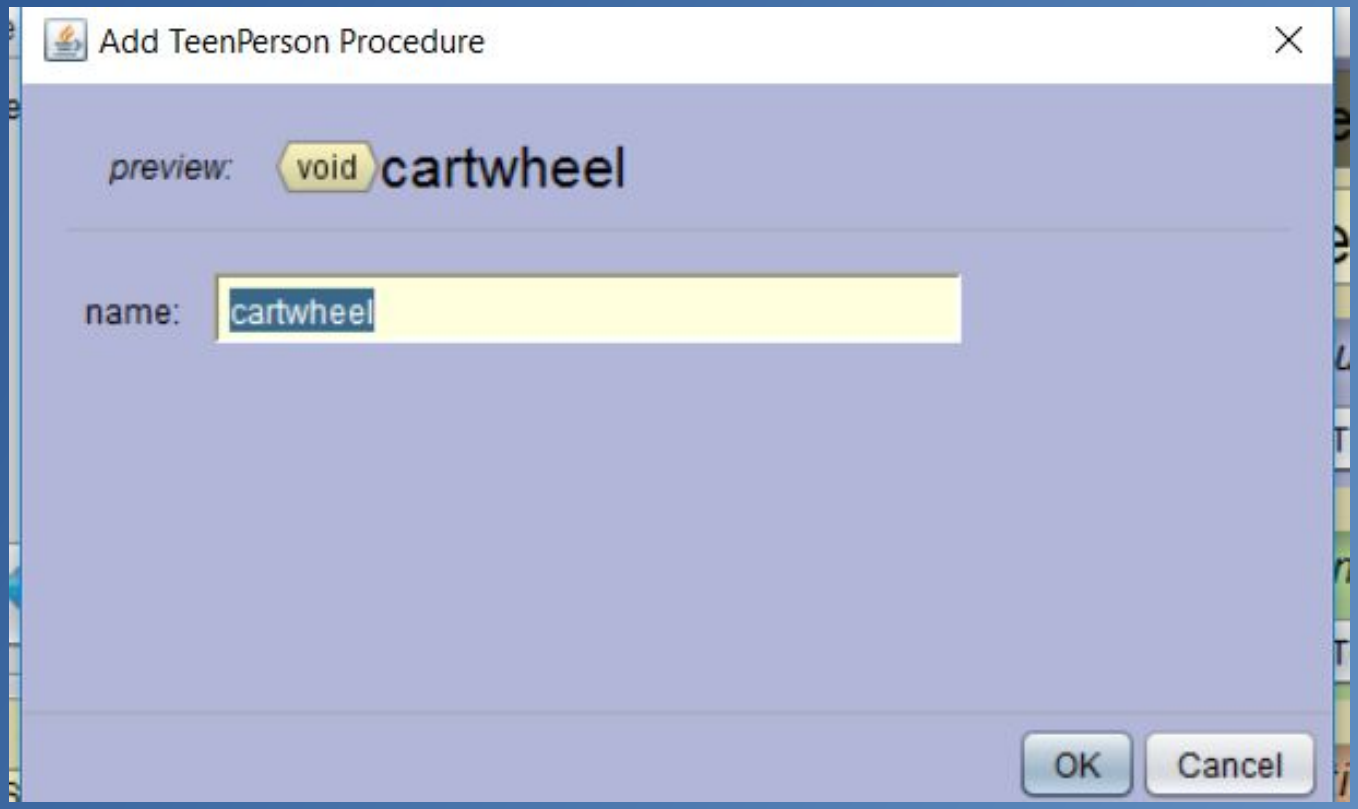
Well for that we need to make some changes

Creating a cartwheel procedure



Creating a cartwheel procedure

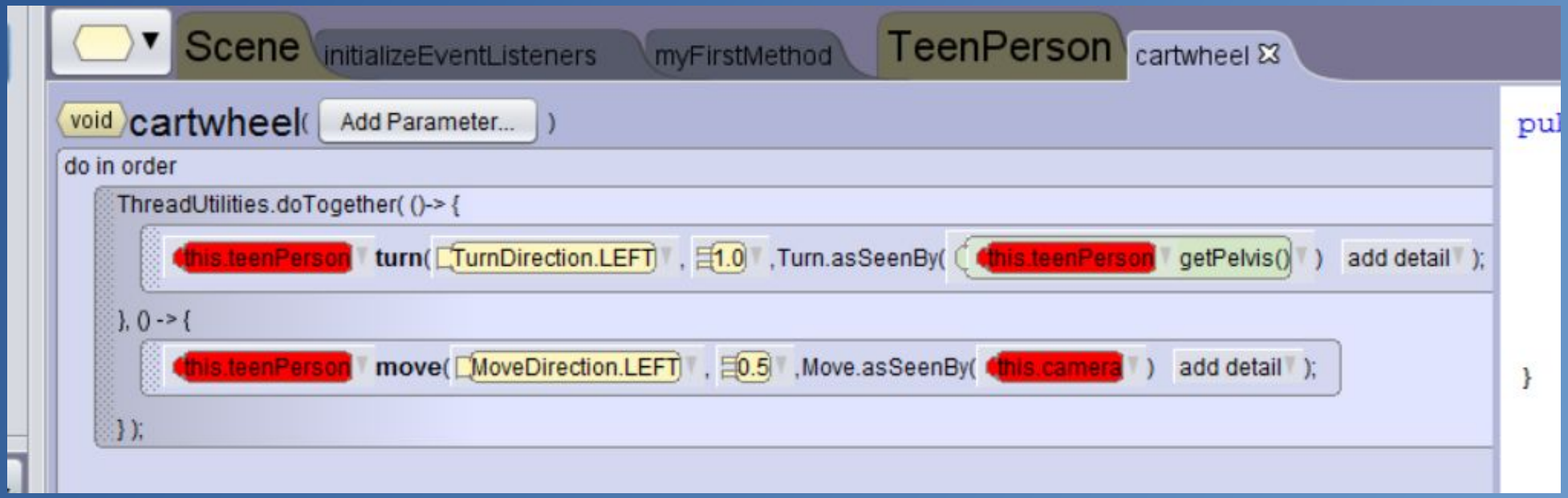
Name it


Add TeenPerson Procedure
preview:
void
cartwheel
name:
cartwheel
OK
Cancel

Move your Do Together code to the Clipboard

```
ThreadUtilities.doTogether( ()-> {
    this.teenPerson turn( TurnDirection.LEFT , 1.0 ,Turn.asSeenBy( this.teenPerson getPelvis() ) add detail );
}, () -> {
    this.teenPerson move( MoveDirection.LEFT , 0.5 ,Move.asSeenBy( this.camera ) add detail );
} );
```

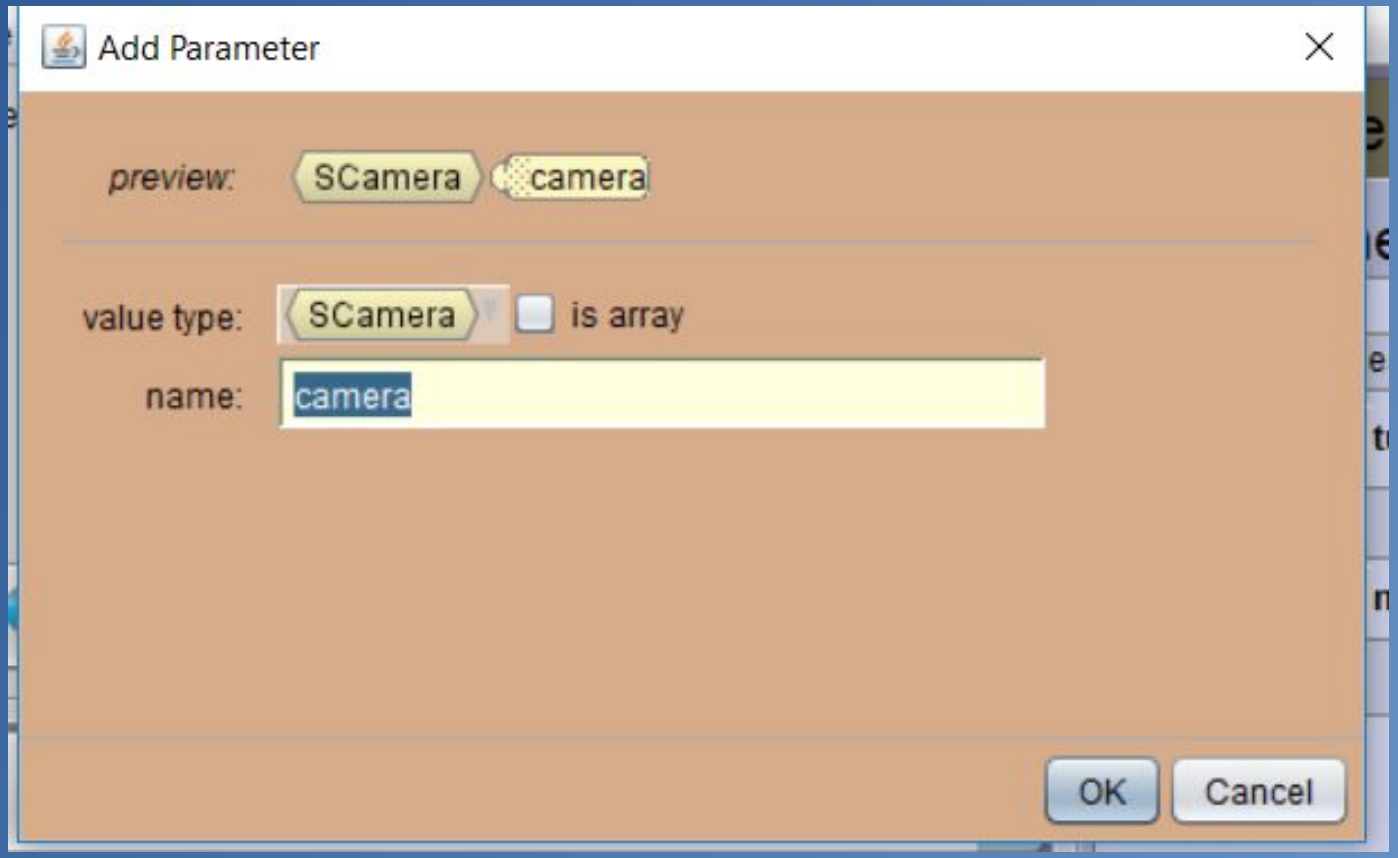
Drag it to the Cartwheel Procedure



Replace with this Now we need a camera!

```
void cartwheel( Add Parameter... )
do in order
    ThreadUtilities.doTogether( ()-> {
        this turn( TurnDirection.LEFT , 1.0 ,Turn.asSeenBy( this getPelvis() ) add detail );
    }, () -> {
        this move( MoveDirection.LEFT , 0.5 ,Move.asSeenBy( this.camera ) add detail );
    } );
```

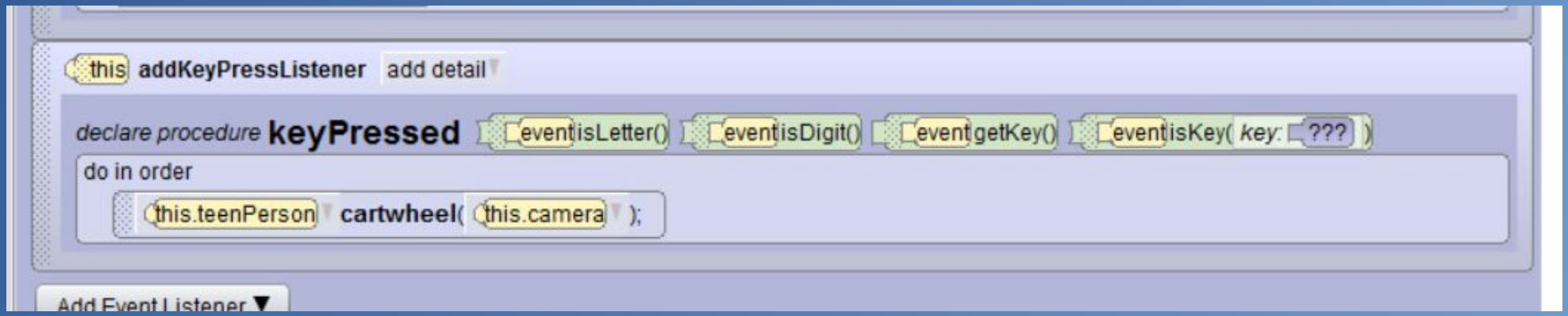
Adding the camera



And we have a cartwheel procedure!

```
void cartwheel( SCamera camera  Add Parameter... )
do in order
    ThreadUtilities.doTogether( ()-> {
        this turn( TurnDirection.LEFT , 1.0 ,Turn.asSeenBy( this getPelvis() ) add detail );
    }, () -> {
        this move( MoveDirection.LEFT , 0.5 ,Move.asSeenBy( camera ) add detail );
    } );
```

Listening for a Key press



Try again. Press spacebar.

Break!

But what is really happening???For that we need to look in an IDE

NetBeans IDE: What is it?

Josh Juneau
Apress and Oracle Author
Java EE Application Developer

Why is Coding Sometimes Difficult?

Why is Coding Sometimes Difficult?

- In order to run a Java program, one must compile it first, then execute it. The compilation process is not too difficult, but it can become cumbersome if there are a lot of project dependencies.
- Code can be hard to read in some cases, especially when you get into lots of different class files, loops, or nested constructs.
- Code can become unorganized
- Etc, etc, etc…

So What is an IDE?

A tool that is meant to help make coding ***<u>much</u>*** easier.

I.D.E = Integrated Development Environment

- Organization
- Ease the development process
- Easier to Read Code
- Shortcuts!

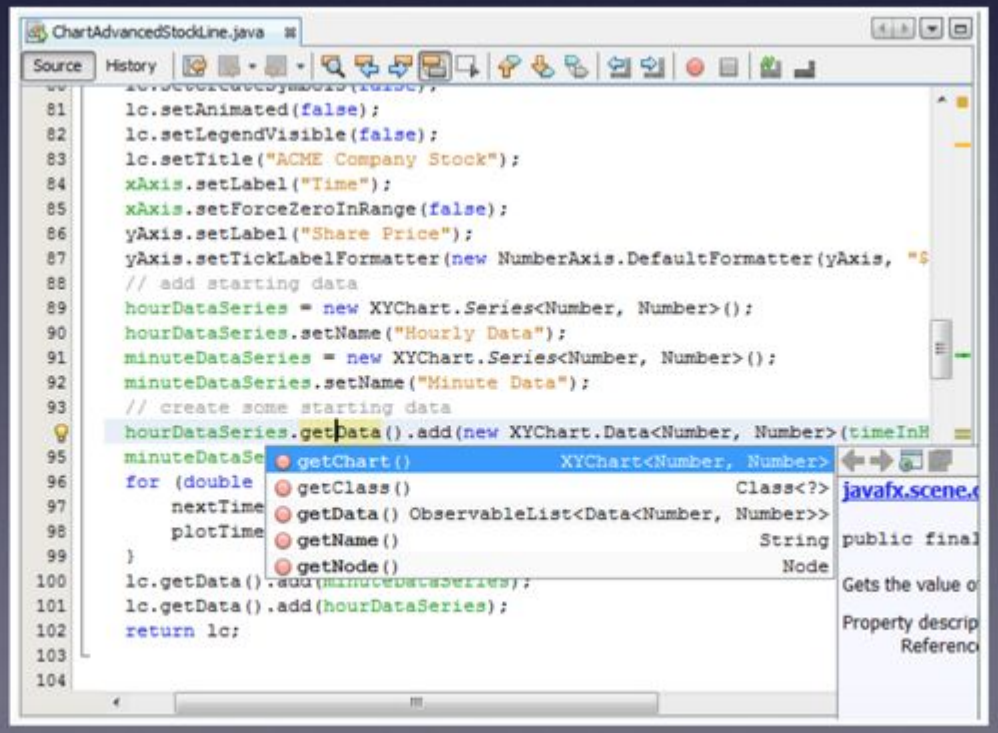
NetBeans Overview

NetBeans IDE lets you quickly and easily develop Java desktop, mobile, and web applications, many other languages.

It is free and open source and has a large community of users and developers around the world.

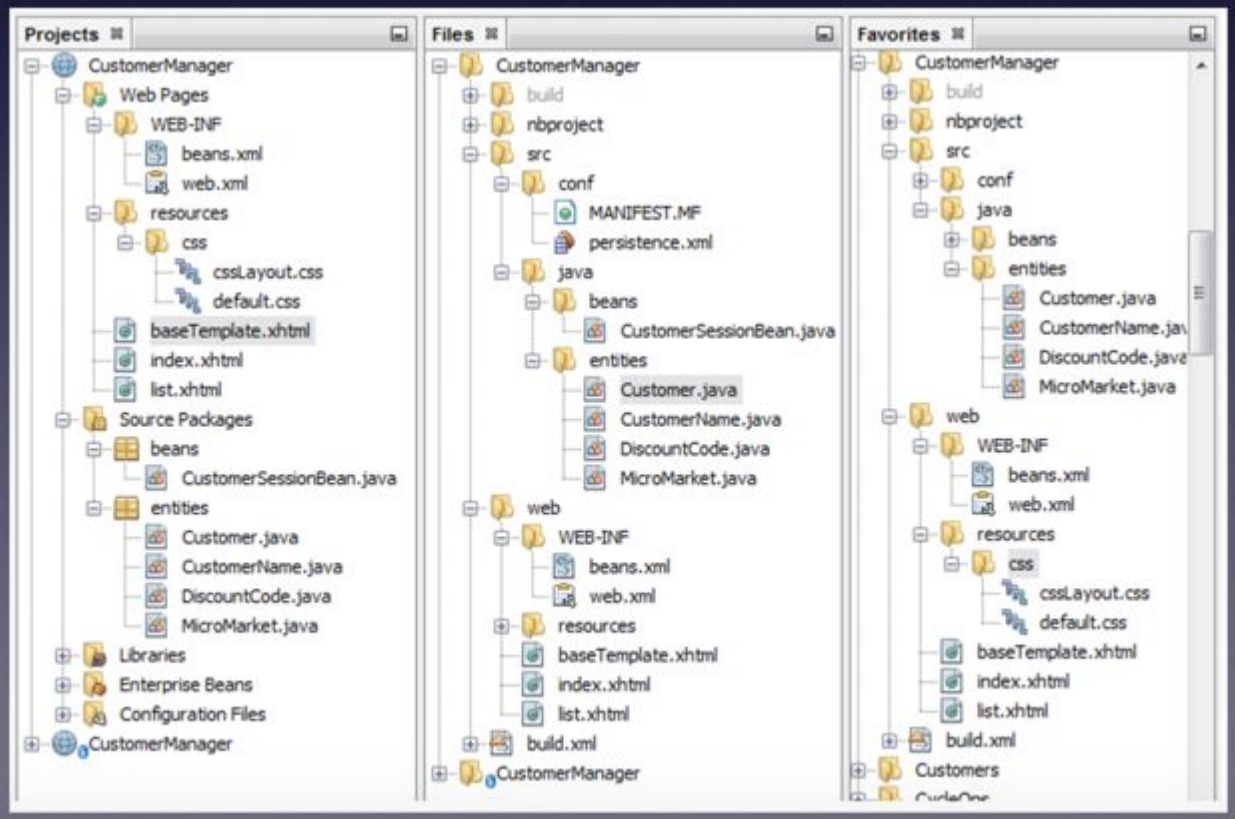
Smart and Fast Coding

Auto-completion
Color coded Syntax
Hints and Tips
Code Generation, Refactoring



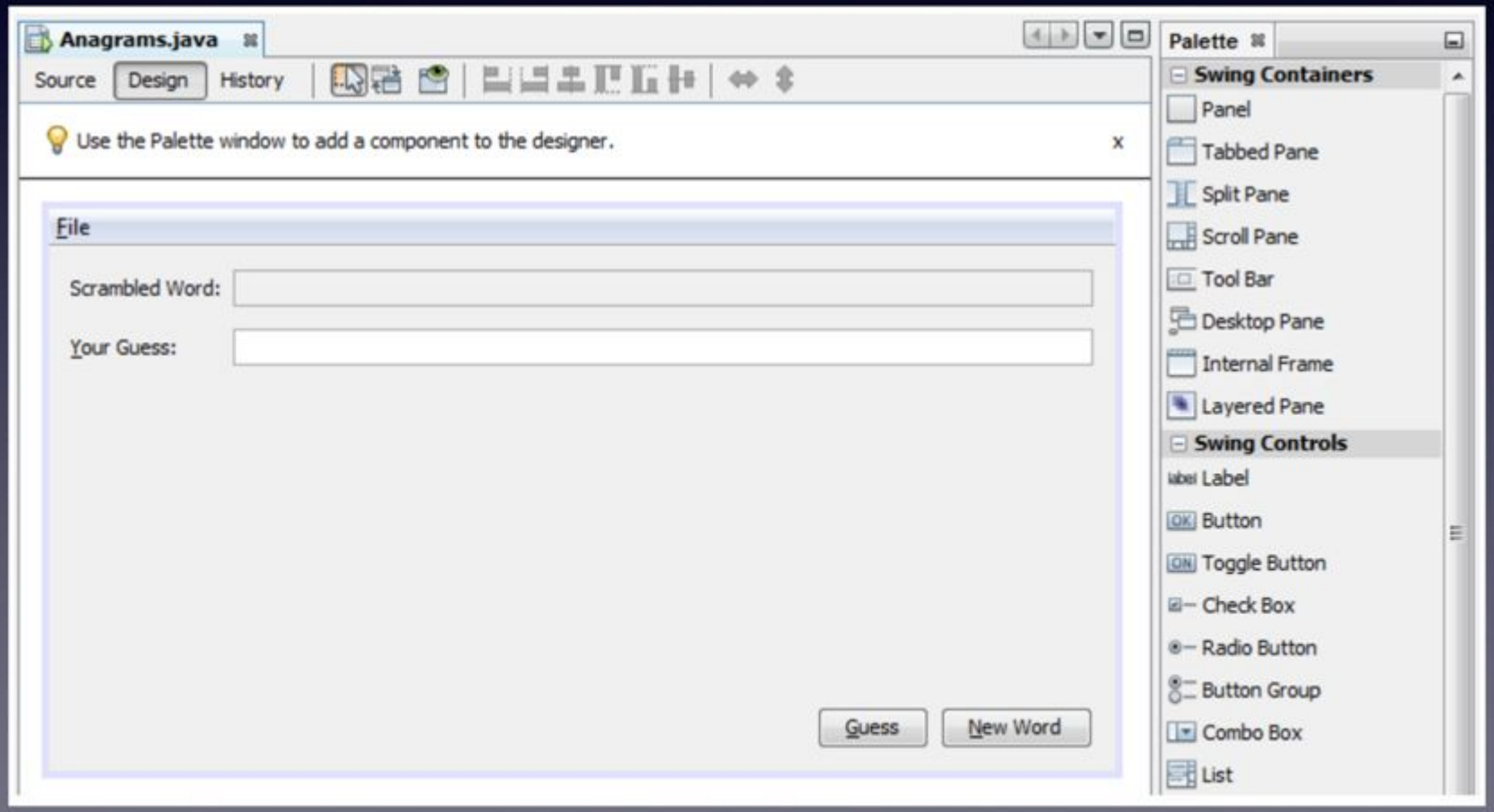
Easy Organization

Create folders, group code together
Organized Projects (Web apps, Desktop apps, etc)
Different Symbols to Help Recognize Code Types



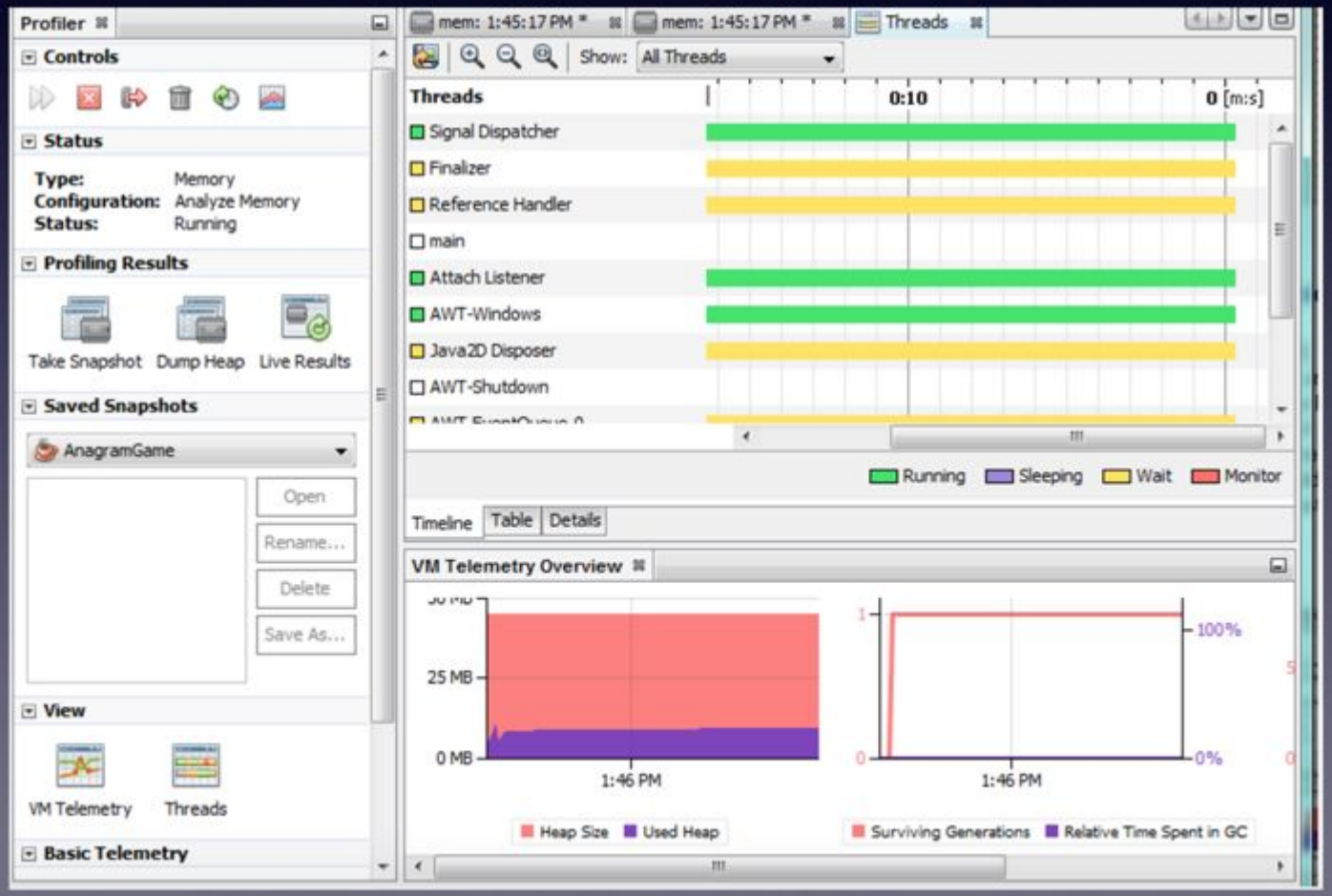
Drag and Drop

Drag and Drop for Easy GUI Creation



Test…Get Rid of Bugs!

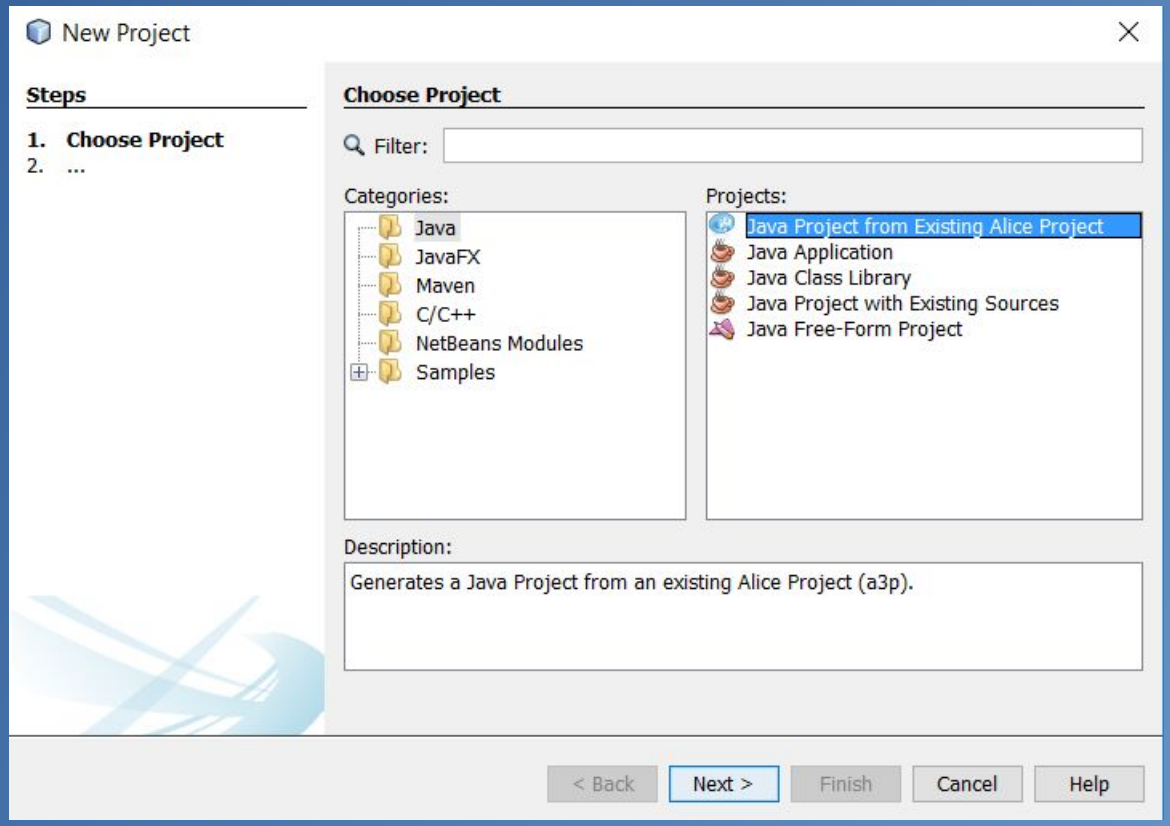
Bug finder…runs basic tests.
Profiler…where are my problem areas.



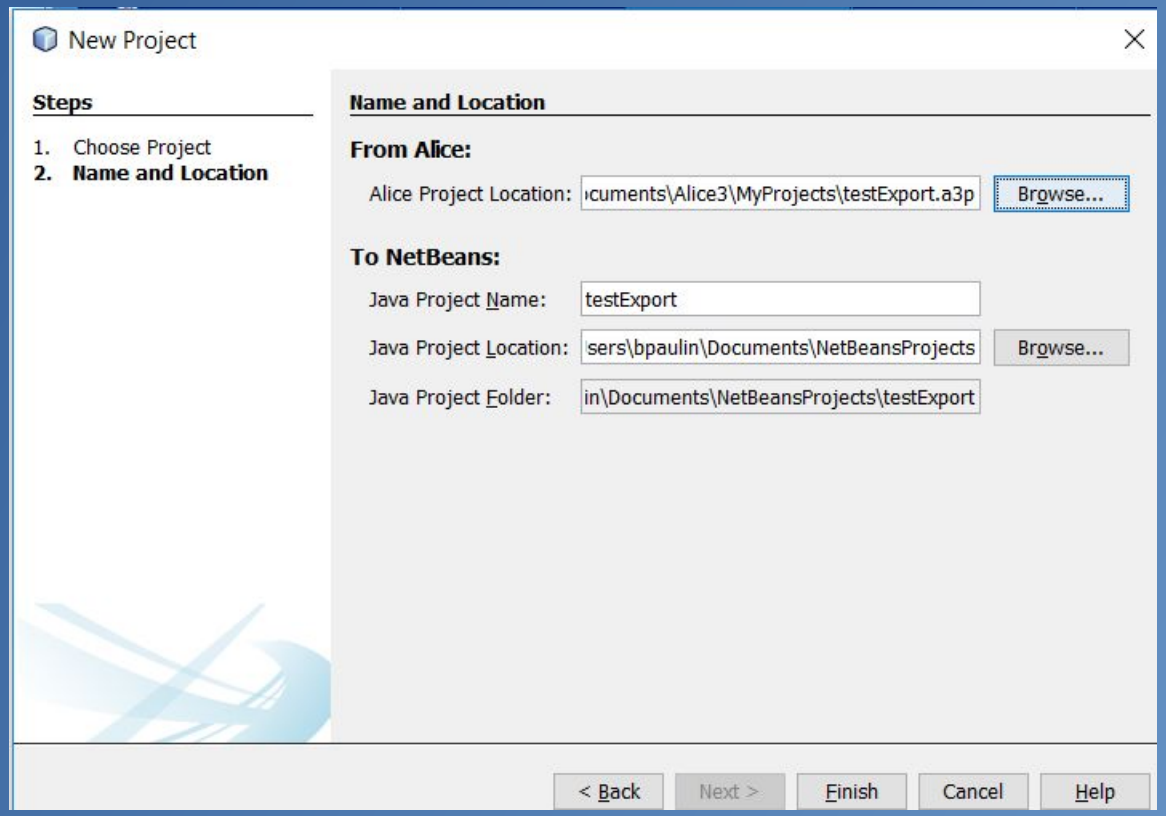
NetBeans Makes Development Easy

OK so lets do jumping jacks in Netbeans!

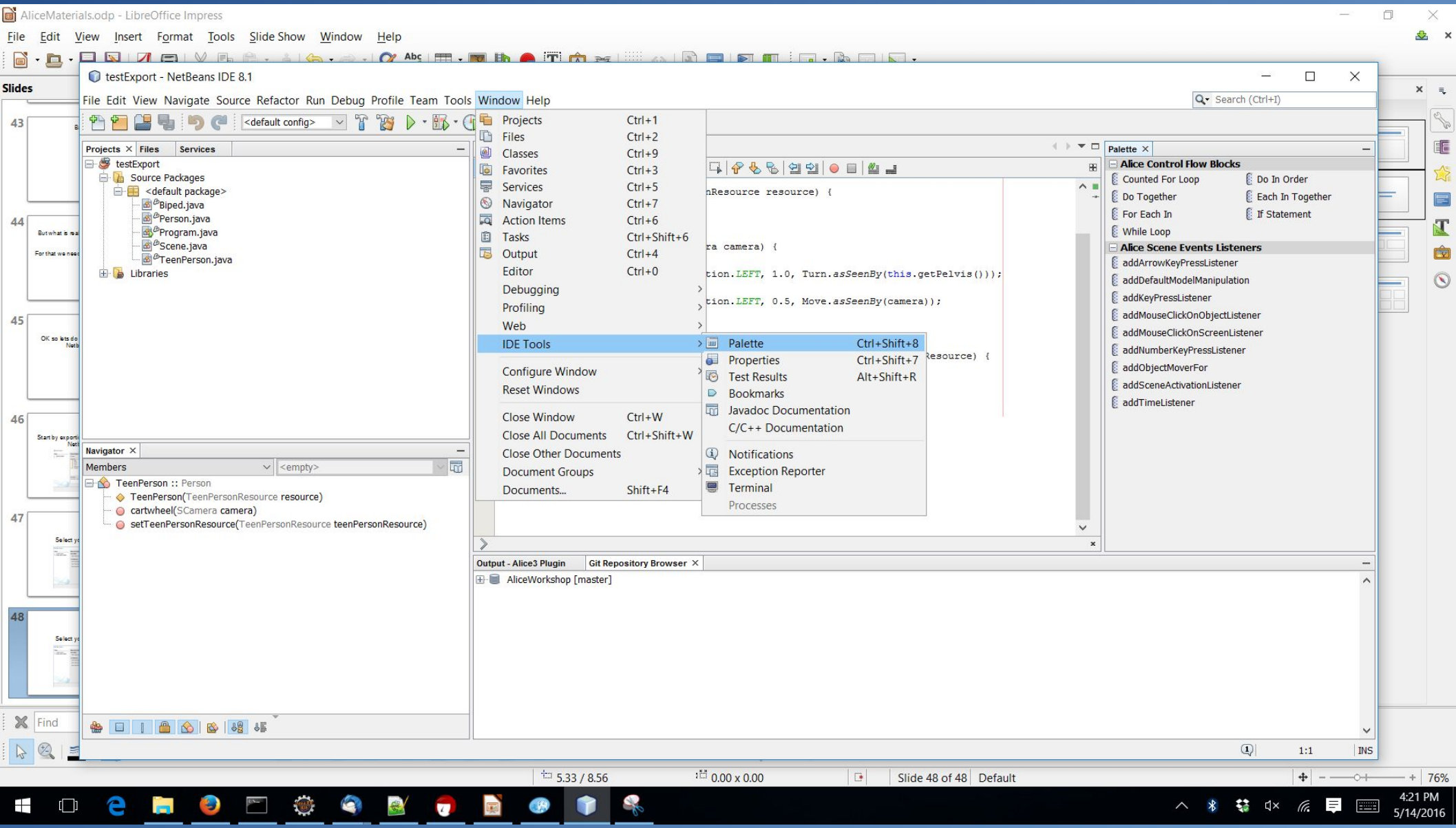
Start by exporting your project to Netbeans



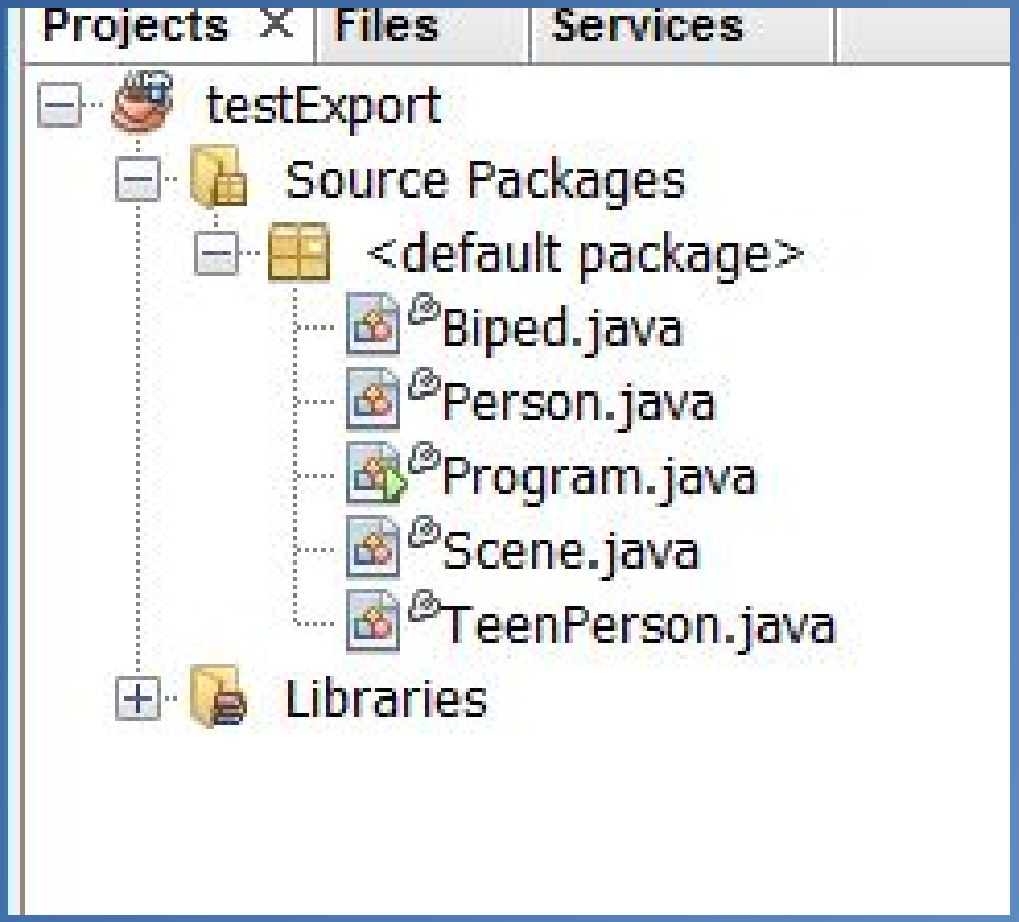
Select your project



Turn on the Palette



Looking at what's there



I can add new things in Scene

```
private void initializeEventListeners() {
    this.addSceneActivationListener((SceneActivationEvent event) -> {
        this.myFirstMethod();
    });
    this.addKeyPressListener((KeyEvent event) -> {
        this.teenPerson.cartwheel(this.camera);
    });
}

public void myFirstMethod() {
    this.teenPerson.getRightShoulder().turn(TurnDirection.BACKWARD, 0.375);
    this.teenPerson.getLeftShoulder().turn(TurnDirection.BACKWARD, 0.375);
    this.teenPerson.getRightHip().turn(TurnDirection.RIGHT, 0.125);
    this.teenPerson.getLeftHip().turn(TurnDirection.LEFT, 0.125);
}
```

I can add new things in TeenPerson

```
class TeenPerson extends Person {

    public TeenPerson(TeenPersonResource resource) {
        super(resource);
    }

    public void cartwheel(SCamera camera) {
        doTogether(() -> {
            this.turn(TurnDirection.LEFT, 1.0, Turn.asSeenBy(this.getPelvis()));
        }, () -> {
            this.move(MoveDirection.LEFT, 0.5, Move.asSeenBy(camera));
        });
    }
```

Running the code

Adding a Jumping Jacks Method

```
public void cartwheel(SCamera camera) {
    doTogether(() -> {
        this.turn(TurnDirection.LEFT, 1.0, Turn.asSeenBy(this.getPelvis()));
    }, () -> {
        this.move(MoveDirection.LEFT, 0.5, Move.asSeenBy(camera));
    });
}

public void jumpingJacks()
{
    
}
```

Adding a Jumping Jacks Method to TeenPerson

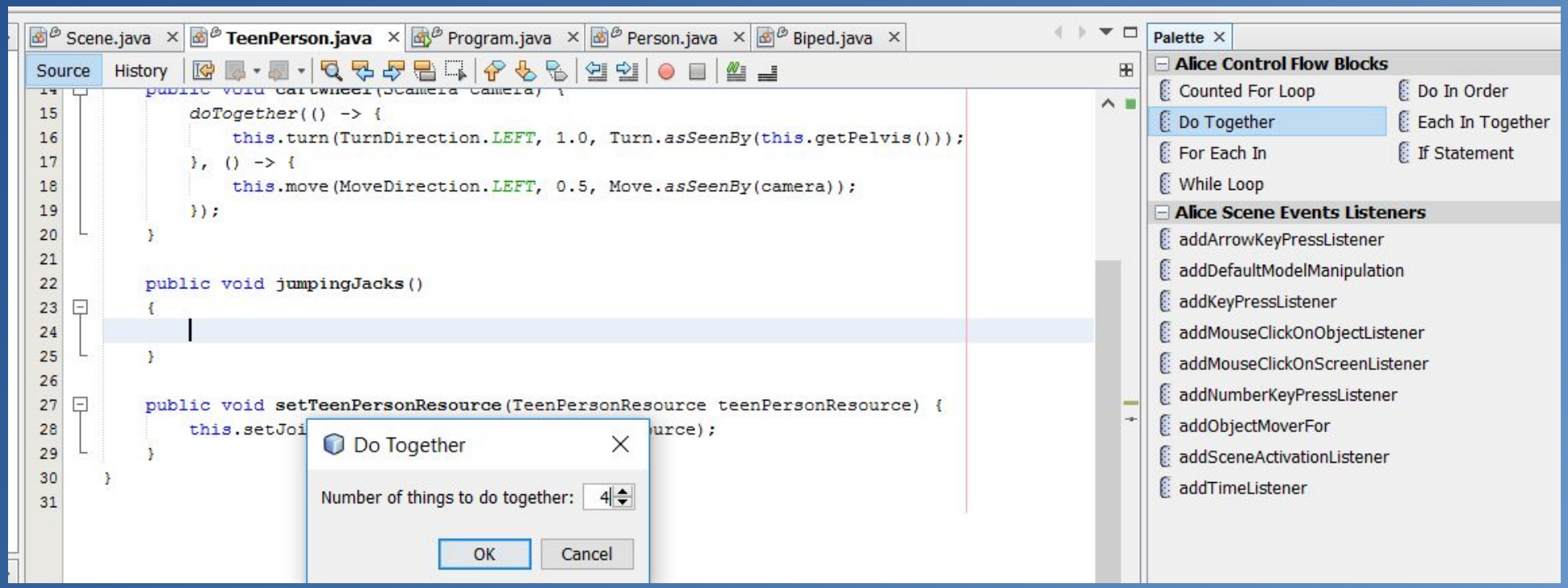
```
public void cartwheel(SCamera camera) {
    doTogether(() -> {
        this.turn(TurnDirection.LEFT, 1.0, Turn.asSeenBy(this.getPelvis()));
    }, () -> {
        this.move(MoveDirection.LEFT, 0.5, Move.asSeenBy(camera));
    });
}

public void jumpingJacks()
{
    |
}
```

Hooking Jumping Jacks to the Key Listener in Scene

```
private void initializeEventListeners() {
    this.addSceneActivationListener((SceneActivationEvent event) -> {
        this.myFirstMethod();
    });
    this.addKeyPressListener((KeyEvent event) -> {
        this.teenPerson.jumpingJacks();
    });
}
```

Using the Palette



Do Together Generated with Palette

```
public void jumpingJacks()
{

    //start a Thread for each Runnable and wait until they complete
    doTogether(() -> {
        //TODO: Code goes here
    }, () -> {
        //TODO: Code goes here
    }, () -> {
        //TODO: Code goes here
    }, () -> {
        //TODO: Code goes here
    });


}
```

Now it's your turn!If you get stuck try doing it inside Alice first and look at the code

Write a story to implement in Alice

Build your story

Demo Time!