

Welcome

Async / Await

Chain of Responsibility



Pattern

Build it

WrapUp



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WrapUp

OWIN

```
appBuilder.Use(async (ctx, next) =>
{
    // do some things here
    await next();
    // or here
});
```

ASP.NET Core Middleware

```
public class Startup {  
    public void Configure(IApplicationBuilder app) {  
        app.Use(async (context, next) =>  
        {  
            // do some things here  
            await next.Invoke();  
            // or here  
        });  
    }  
}
```

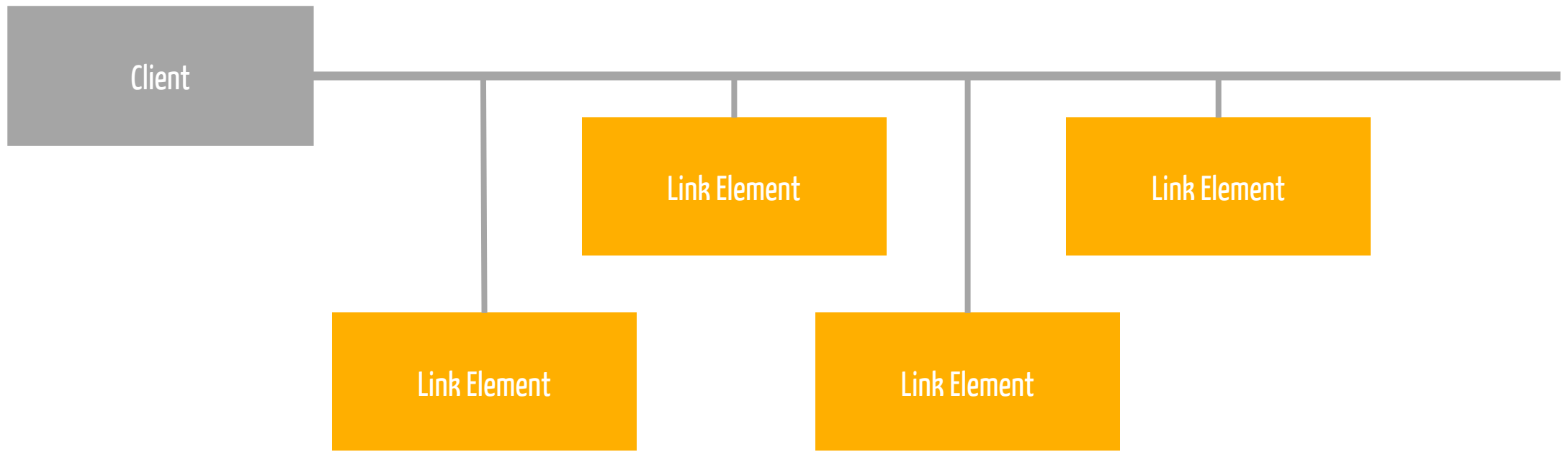
ASP.NET Core Filters

```
class ActionFilter : IAsyncActionFilter {  
    public async Task OnActionExecutionAsync(  
        ActionExecutionContext context, ActionExecutionDelegate next)  
    {  
        // do some things here  
        var resultContext = await next();  
        // or here  
    }  
}
```

Goals

target

Chain of Responsibility





son wife husband

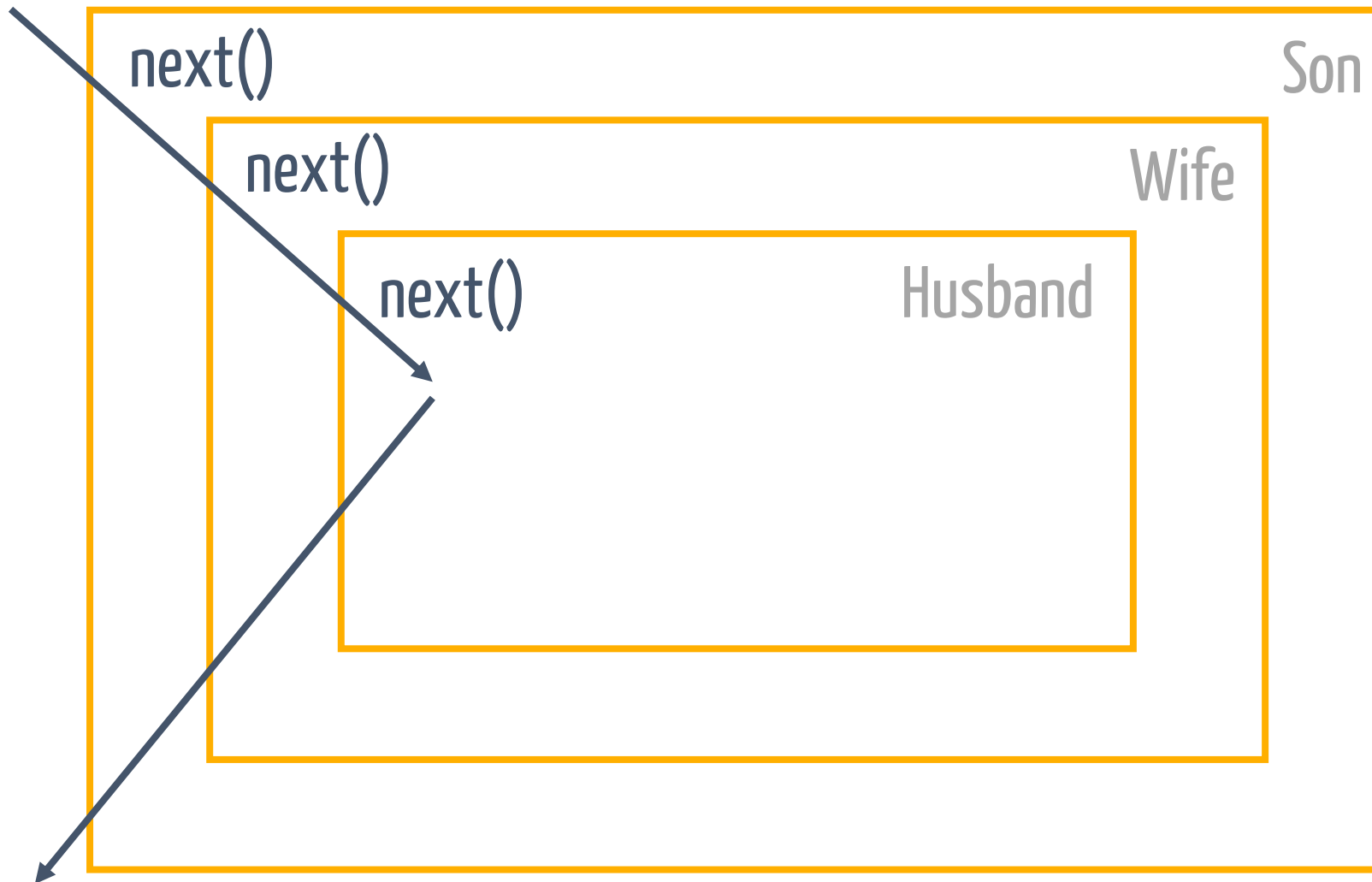


son wife husband

```
static void Person(Action next)
{
    // Implementation
    next();
}
```

```
public void ManualDishwasherUnloading()  
{  
    Son(()) => Wife(()) => Husband(()) => Done());  
}
```

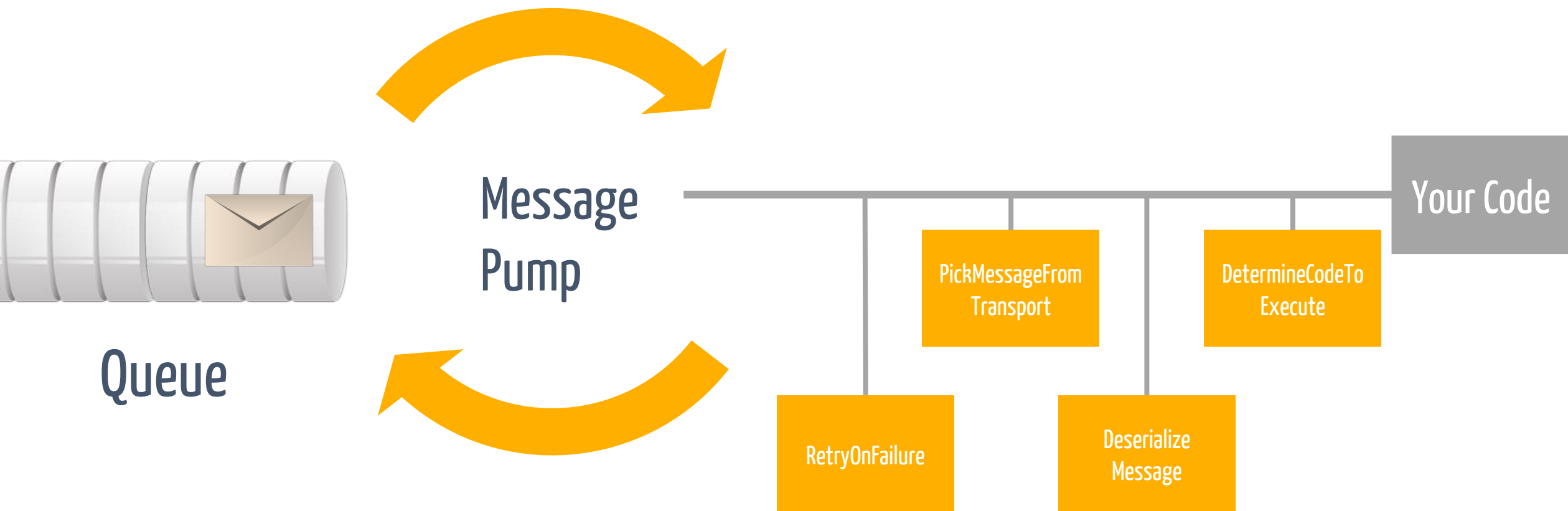
Demo



cumbersome

Demo


```
static void IgnoreDishStillWetException(Action next)
{
    try {
        next();
    }
    catch(DishStillWetException) { }
}
```



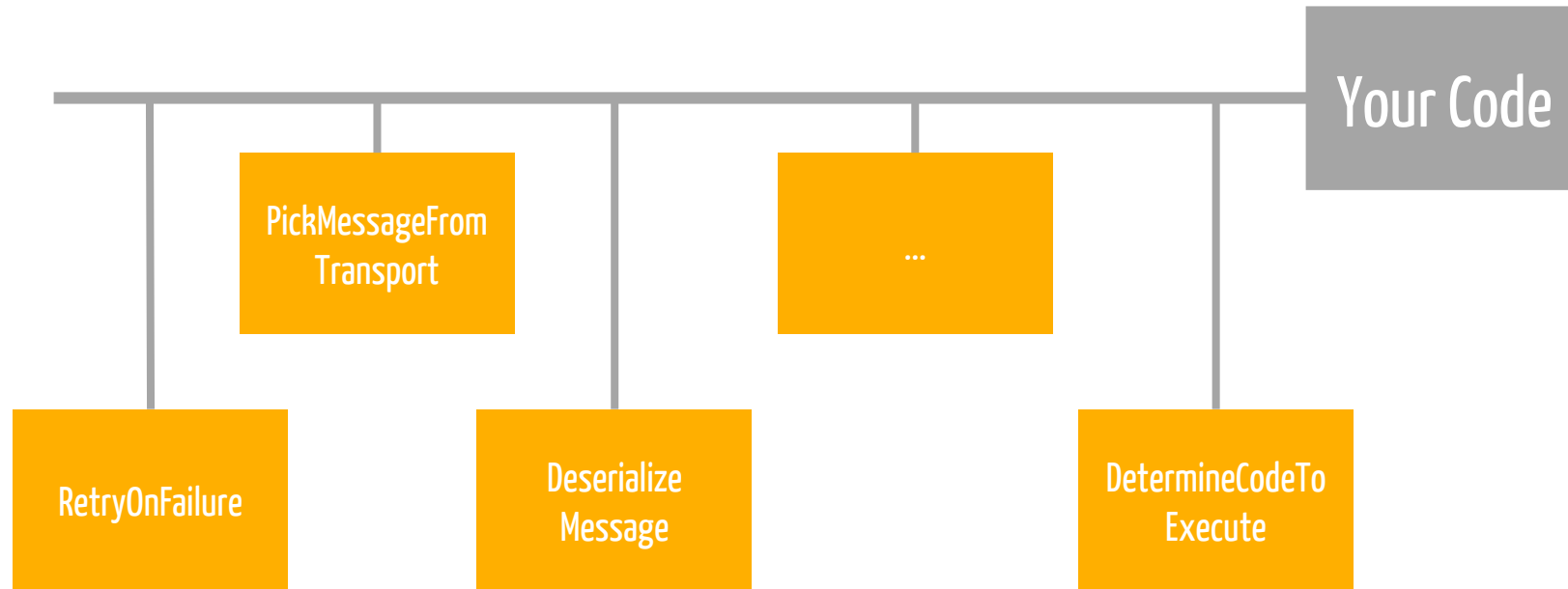


Pattern

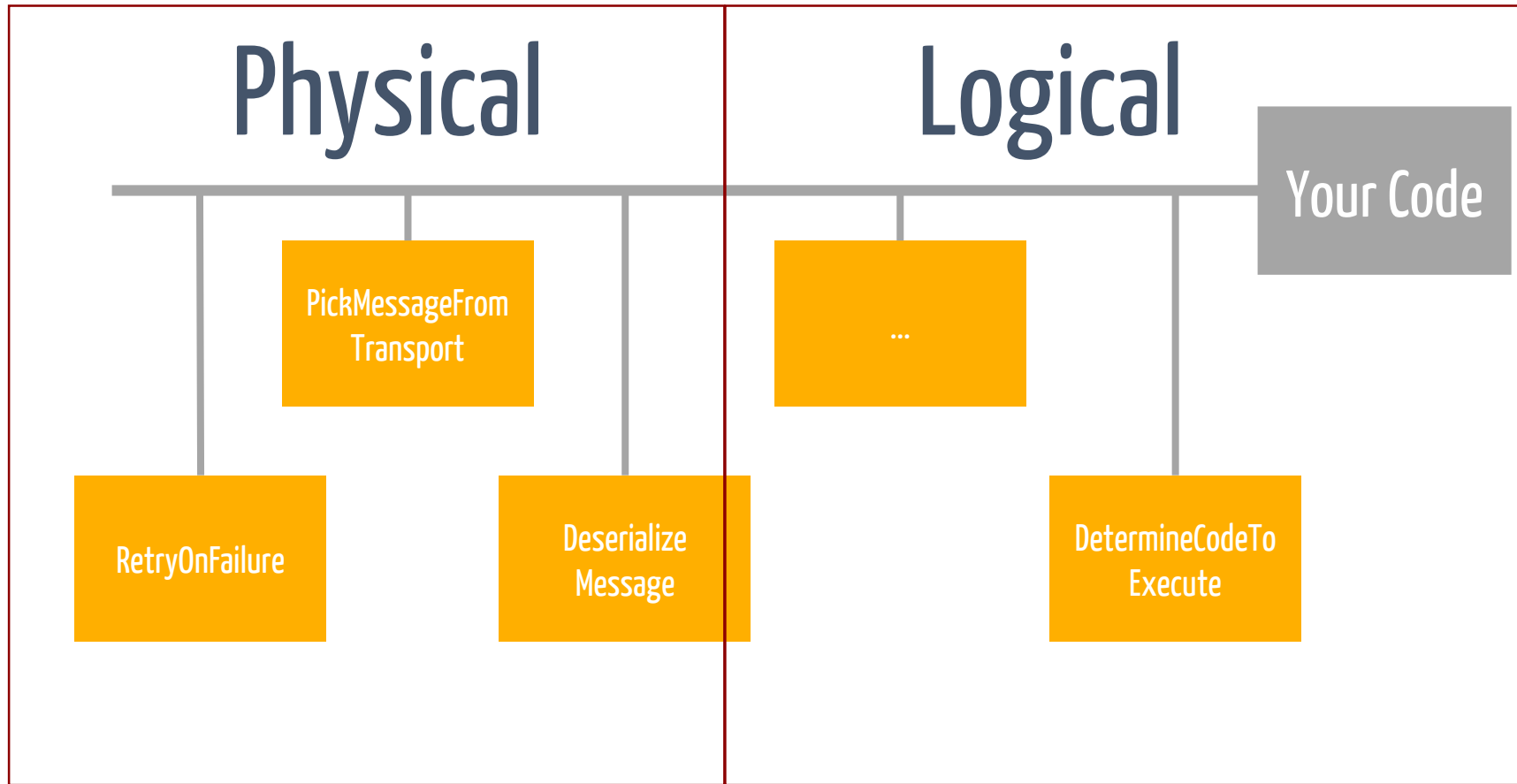
Build It

WrapUp

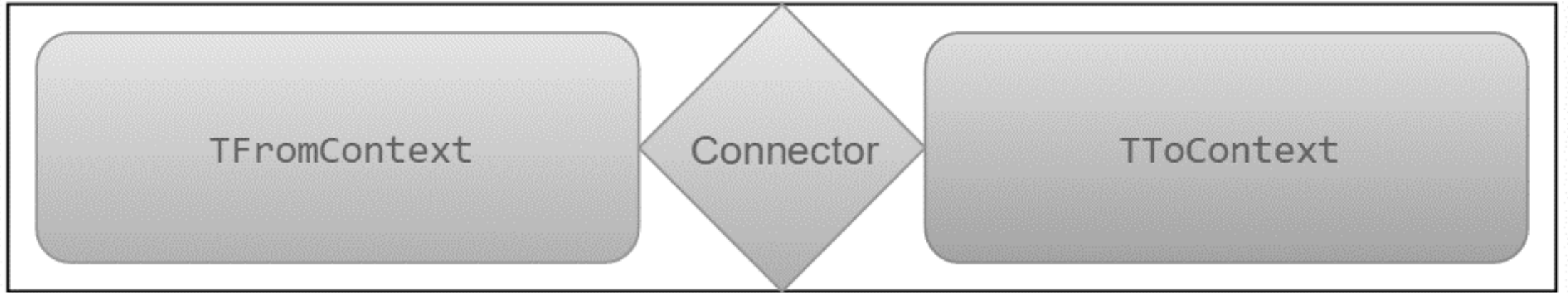
await Demo



Where to place links?



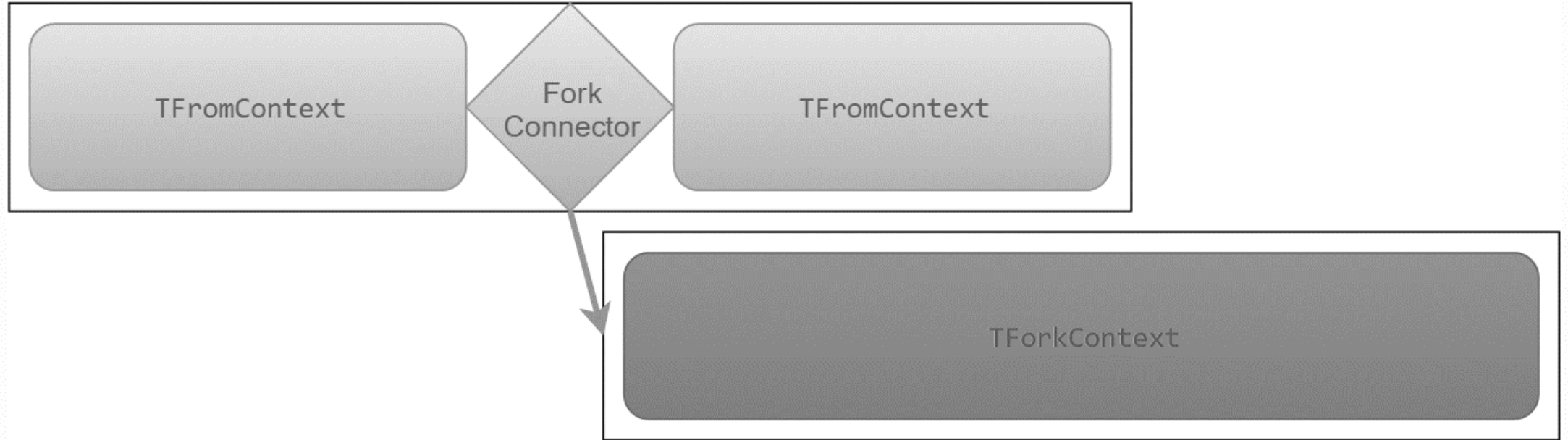
Stages



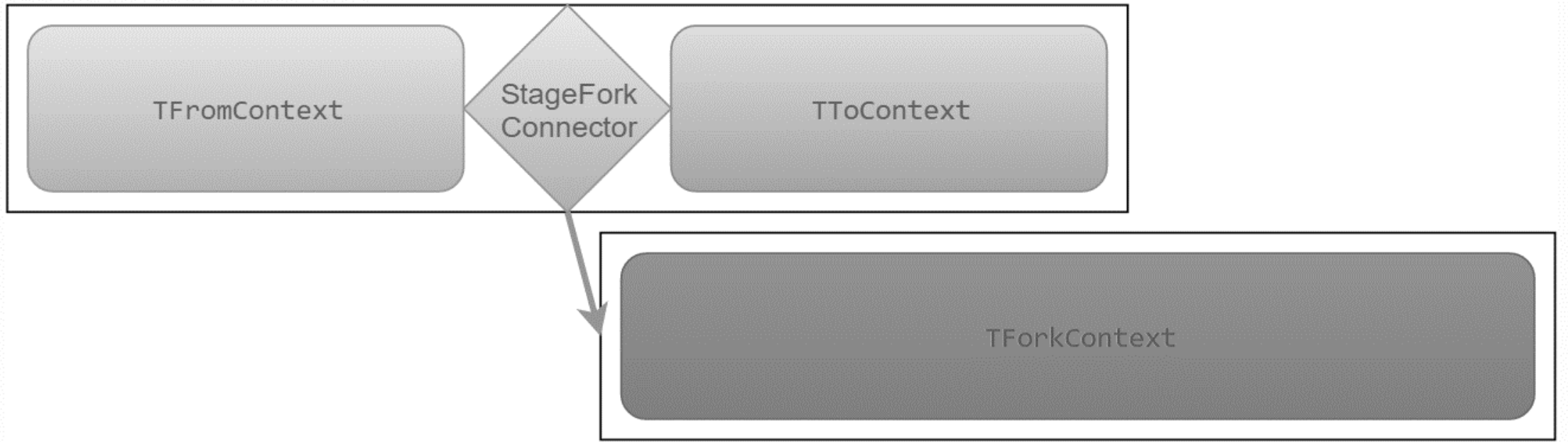
Stage Connector

await Demo

missing ConfigureAwait(false) ;)



Fork Connector

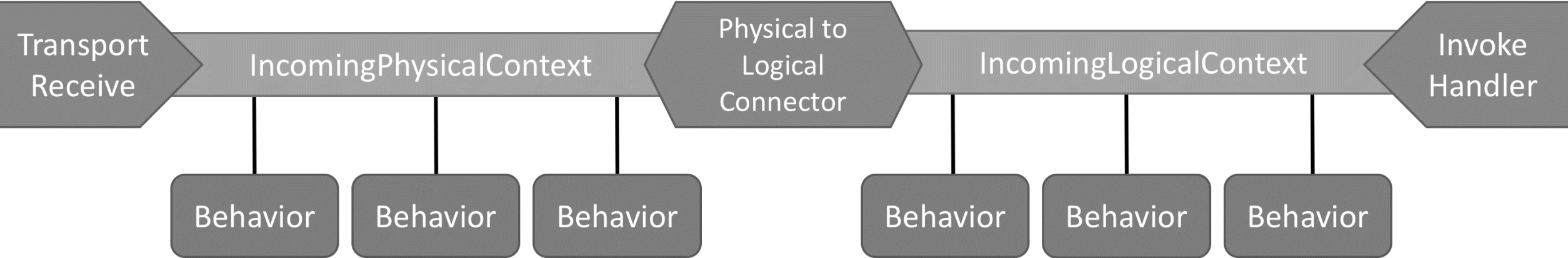


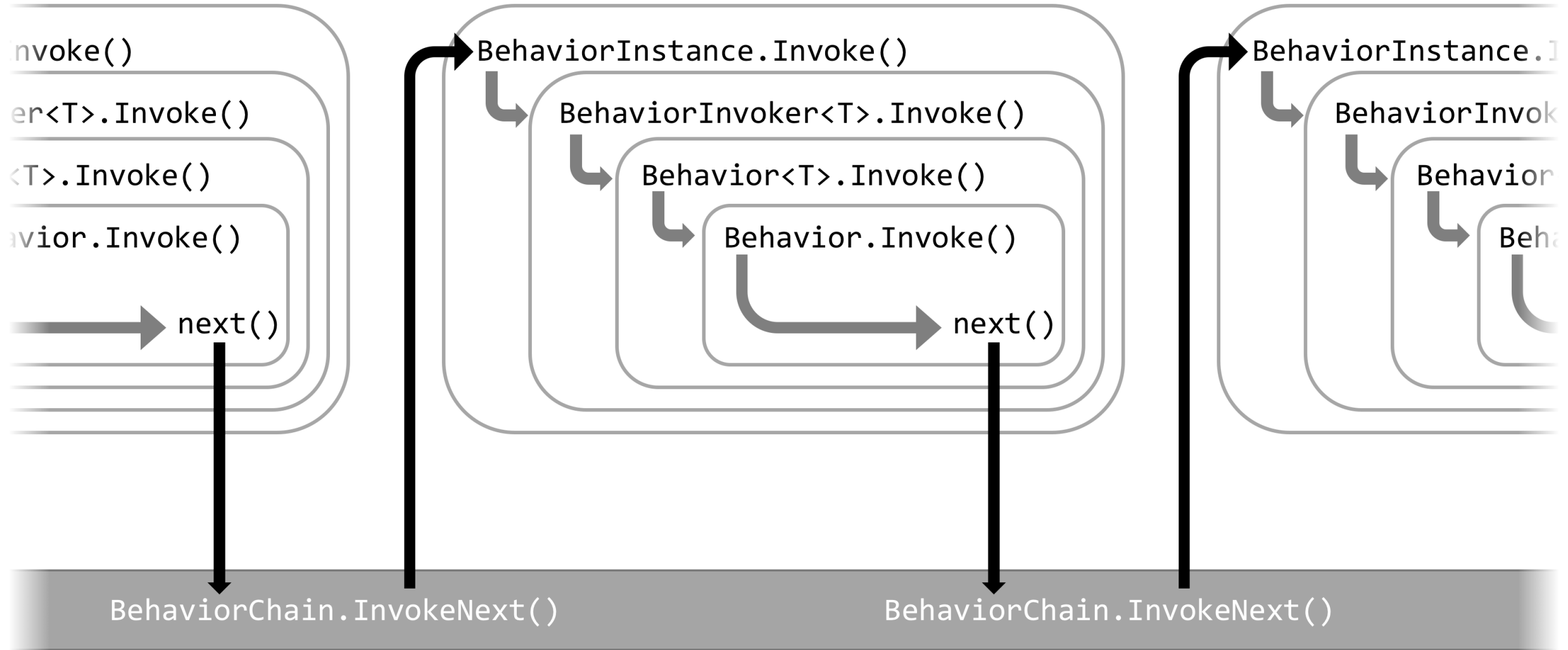
Stage Fork Connector

Tree of Responsibility

Keep calm and let your head explode

The need for
speed





What if we write
this code by hand?

```
behaviorOne.Invoke(context0, context1 => {  
    physicalToLogicalConnector.Invoke(context1, context2 => {  
        behaviorTwo.Invoke(context2, context3 => {  
            invokeHandlersBehavior.Invoke(context3, context4 => {  
                // End of pipeline  
            });  
        });  
    });  
});  
});
```


Expression Trees

go.particular.net/expressions



Pattern

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NSB v6

Is Async all the way

Uses the chain of responsibility pattern heavily

particular.net/blog/async-await-its-time

docs.particular.net/nservicebus/pipeline/customizing-v6

Recap

reminder

Chain of Responsibility or Russian Dolls
is a **flexensible** pattern ideally suited
to build **robust IO bound pipelines**

The pattern is used in **many OSS**
projects

Know it, learn it, love it *

Thanks

Slides, Links...

github.com/danielmarbach/async-dolls

await Q & A



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Thanks