

DOTNEXT

WORKSHOP Building Cloud Native applications with .NET 5 and AKS

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Who am I

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Agenda

Building Cloud Native applications...

- **Part 1** (75 minutes, day 1)
 - *Cloud native in .NET 5*
 - *ASP.NET WebApi, Worker Services, gRPC*
 - *Project Tye*
 - *Configuration & Logging*
 - *Cloud services (Azure KeyVault, ...)*
- **Part 2** (75 minutes, day 1)
 - *Containers and Docker*
 - *Project Tye and Docker*
 - *Local Docker development*
 - *Azure Container Registry (ACR)*
- **Part 3** (75 minutes, day 2)
 - *Azure Kubernetes Service (AKS)*
 - *Kubernetes, Pods, Deployments, Replicas, Services,*



Cloud Native

Cloud Native Technologies

Cloud native is **microservices** hosted in **containers** and/or **serverless** apps, that can run in **multi-cloud** environments and are managed by **DevOps** processes

.NET 5

.NET 5



- Platform independent
- High performance
- Very lightweight
- Future-proof
- Cloud Native compatible
- The way to go for new apps

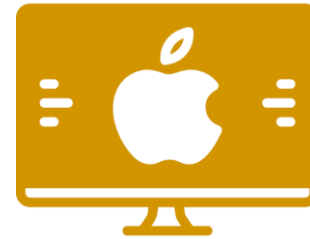
.NET 5 is platform independent



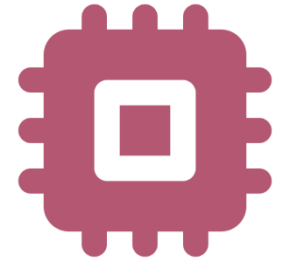
Windows



Linux



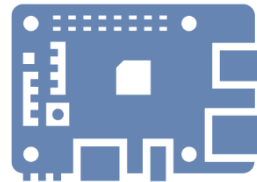
Mac



x86, x64, arm64



Cloud



IoT



Docker

.NET 5 SDK is not bound by tools

```
Welcome to .NET 5 SDK CLI...
```

```
> dotnet new  
> dotnet restore  
> dotnet build  
> dotnet publish  
> dotnet test  
> dotnet run
```

SAY MICROSERVICE



ONE MORE TIME



My personal examples

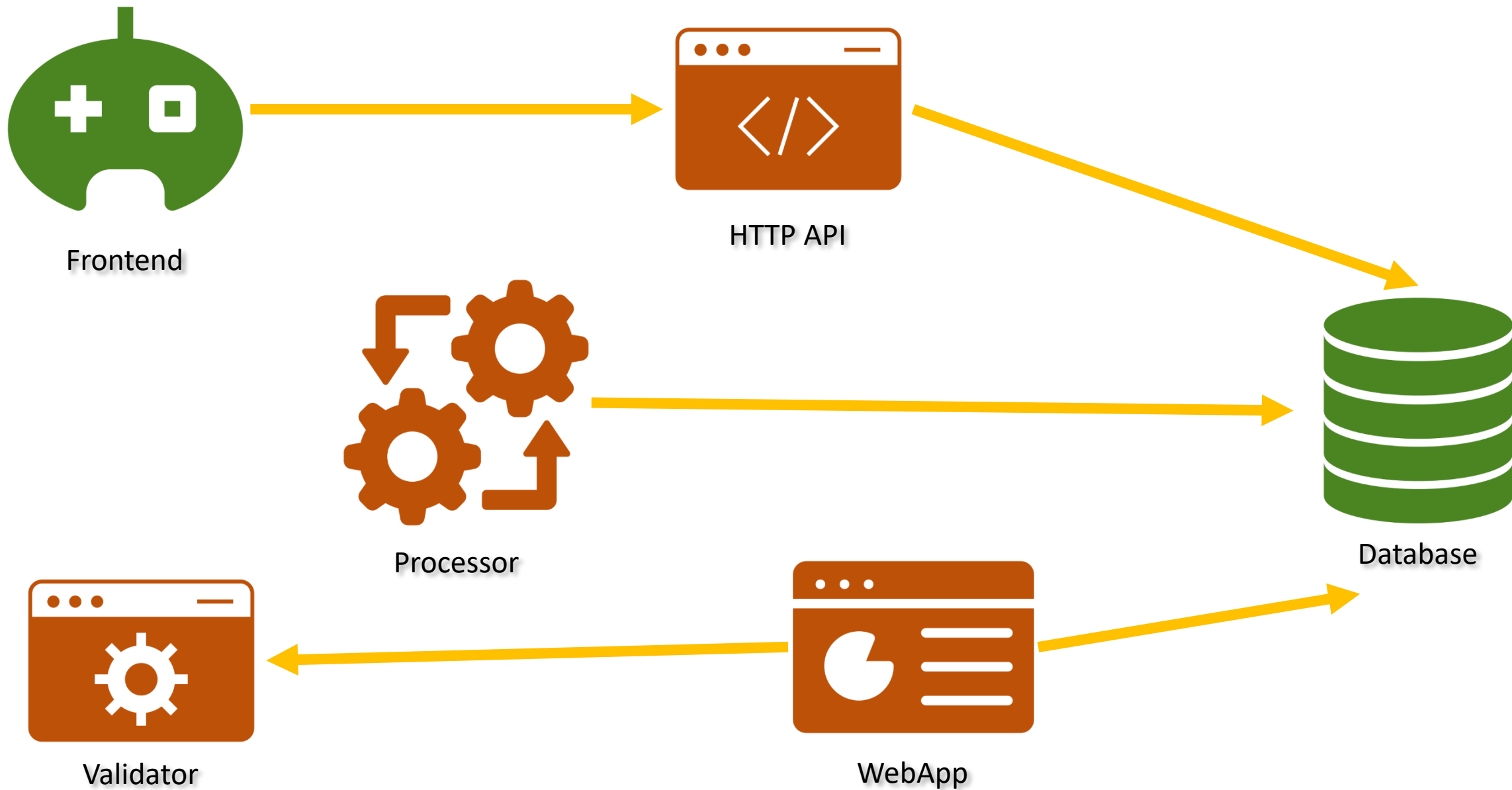
killer (djohnnie)

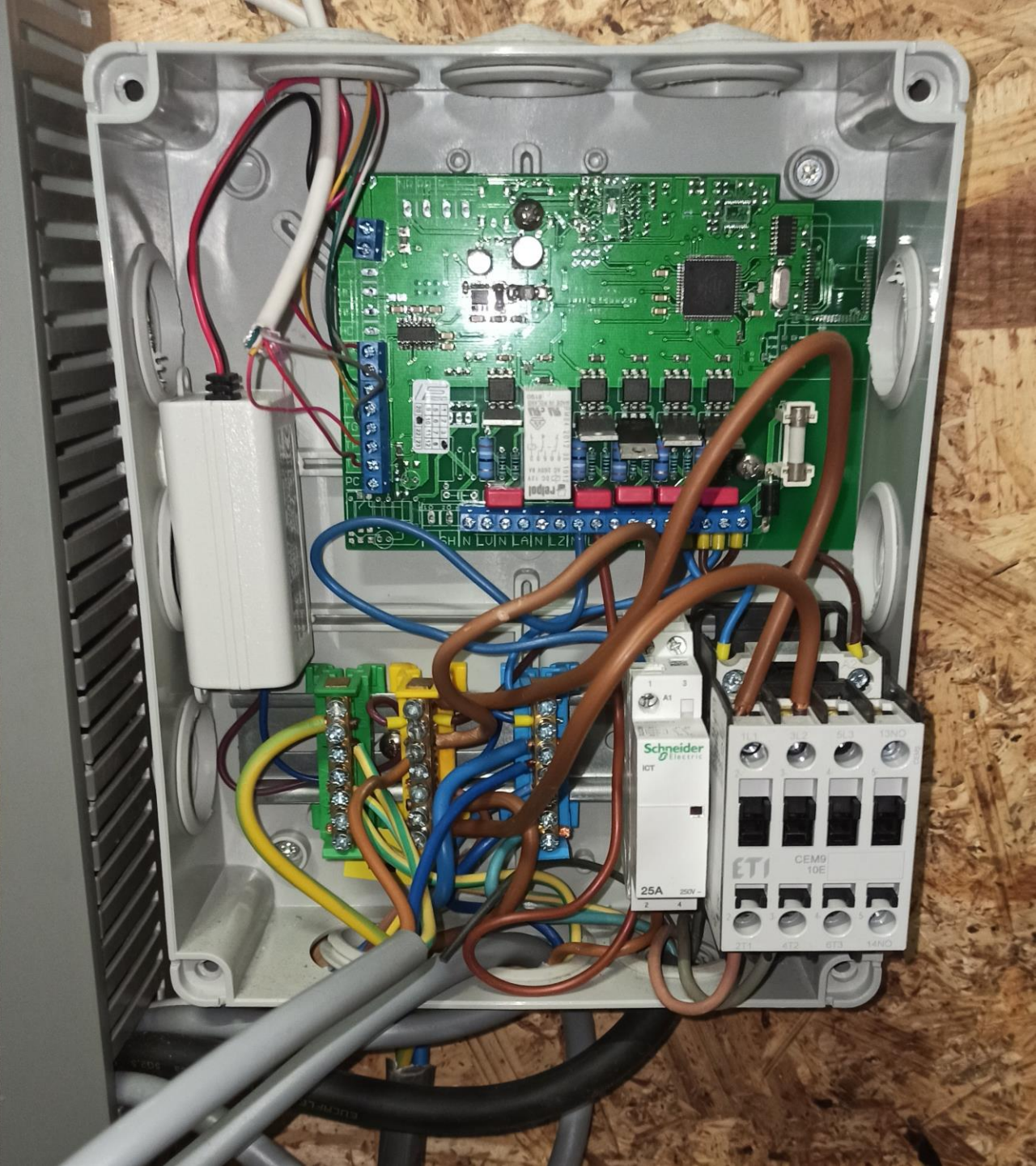
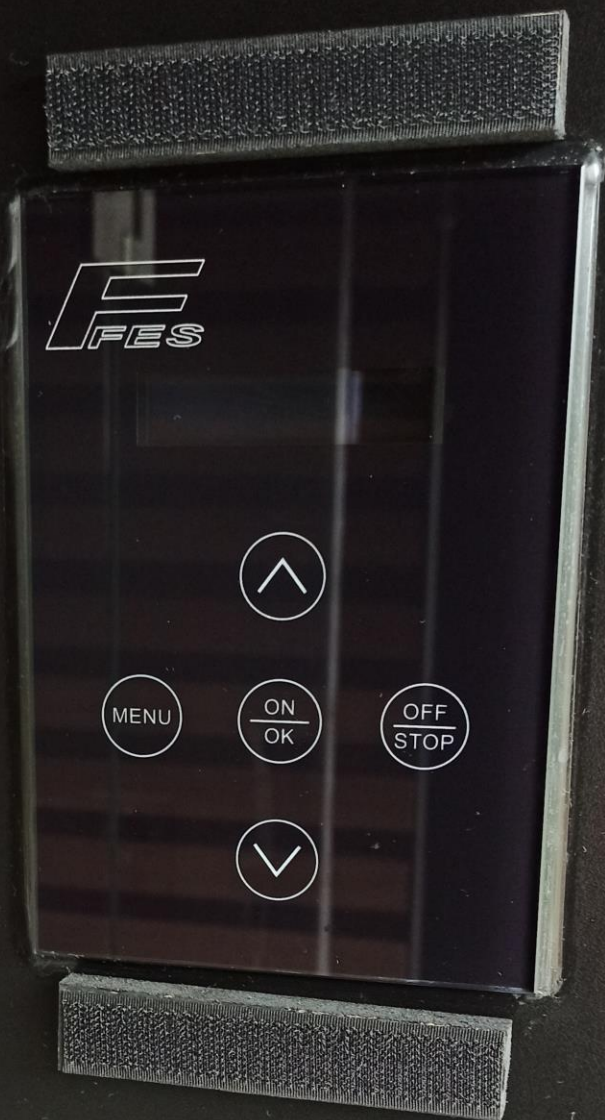
geert (geert)

geert (geert)

CSharpWars Robot Scripting

```
var step = LoadFromMemory<Int32>("STEP");  
if( step % 3 == 0 )  
{  
    TurnLeft();  
}  
else  
{  
    WalkForward();  
}  
step++;  
StoreInMemory<Int32>("STEP", step);
```



zaterdag 2 mei 2020

17:02

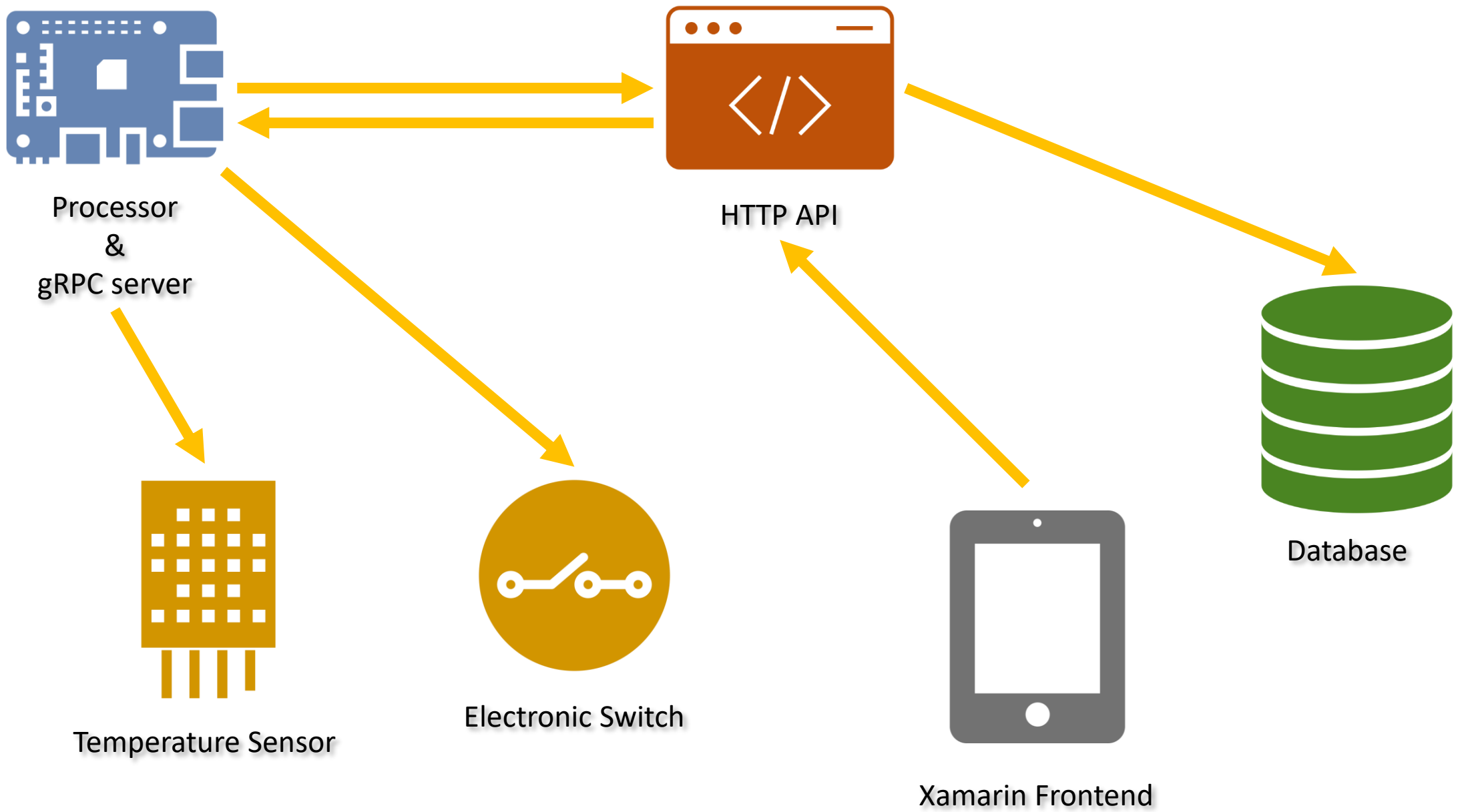
sauna

106 °C

52:45

Lenovo





A large audience of people is seated in a tiered lecture hall, facing a stage. The audience is diverse in age and appearance, many wearing lanyards. The stage features several large projection screens displaying content. The overall lighting is dim, with the stage area being brighter.

Containers & Docker



BONAVENTURE

KENDAL

KENDAL

Greek
Shipping
Miracle





What are containers?

- OS-level virtualization
- Software packages
- Includes dependencies, libraries and configuration
- Isolated from one another
- Communication via well defined channels
- More lightweight than Virtual Machines
 - Single operating system kernel, multiple containers
- Resource limiting

What about application state?

- Containers should not hold state!
- Use environment variables or volume mapping for configuration
- Use external caching services like Redis
- Use external storage services like databases

A large audience of people is seated in a tiered lecture hall, facing a stage. The audience members are mostly men, many wearing blue lanyards. The stage features a large screen displaying a presentation. The room has a modern design with a grid ceiling and recessed lighting. The word "Kubernetes" is overlaid in white text on the audience.

Kubernetes

Thank You

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github.com/Djohnnie/BuildCloudNativeApplicationsWithDotNet5-DotNextPiter-2021