

# Project #1 – Multi-Container App

## Assignment #4 – Kubernetes Deployment

19<sup>th</sup> October 2023

### Advanced Infrastructures for Data Science

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Master in Data Science and Engineering (MDSE) Course

# Project #1 – Multi-container App

Project Name: Tracking Goals Web Application

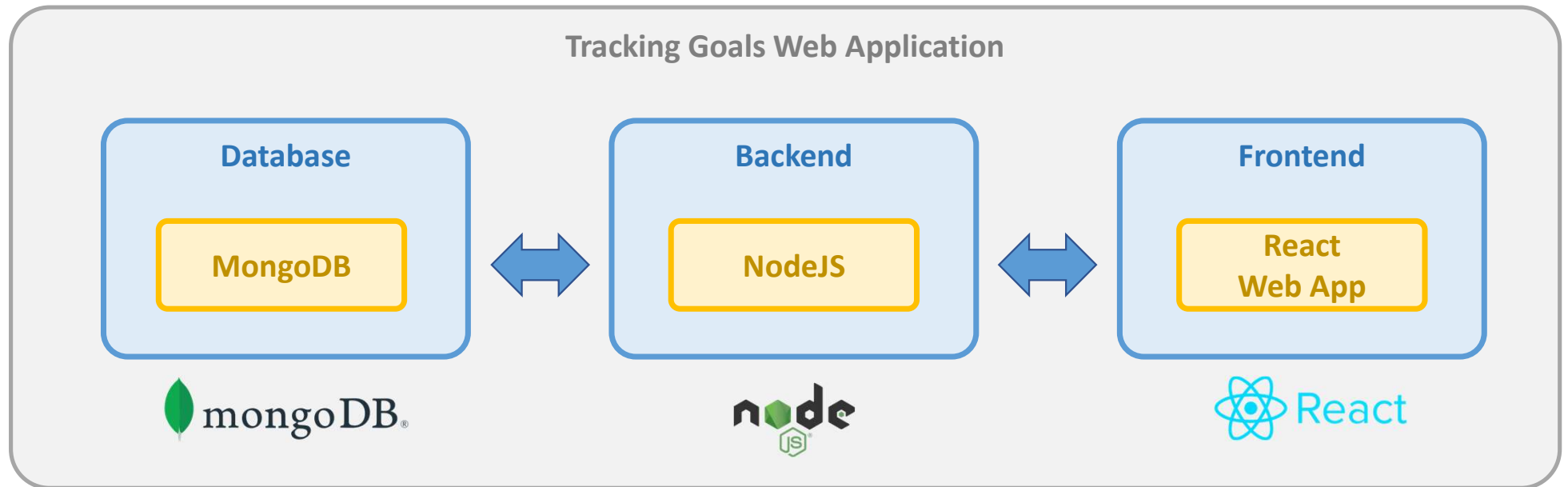
Project Objective: Deploy a multi-container app with Docker  
and Kubernetes

# Web Application Description

# Tracking Goal Web Application

App Objective, Architecture & Technologies

**App Objective:** Allows users to manage (create, view and delete) their goals



# Assignment #4

# Project #1 Assignments

- Project #1
  - Assignment #1 (28<sup>th</sup> September): Build images and launch containers
  - Assignment #2 (5<sup>th</sup> October): Configure containers connectivity and data persistence
  - Assignment #3 (12<sup>th</sup> October): Deploy the multi-container app through Docker Compose
  - Assignment #4 (19<sup>th</sup> October): Deploy the multi-container app in a Kubernetes Cluster

# Assignment #4

## Tasks

1. Install Kubernetes (minikube)
2. Deploy the multi-container application using Kubernetes Imperative Approach
  1. No data persistence
  2. Replicas (database – 1; backend – 2; frontend – 3)
3. Deploy the multi-container application using Kubernetes Declarative Approach
  1. No data persistence
  2. Replicas (database – 1; backend – 2; frontend – 3)



**Good  
Work**