# Homework M5: Advanced Concepts

Main goal is to build further on what was demonstrated during the practice

For the successful completion of the tasks, you will need a simple (two or three node) cluster as the one used during the practice

## Tasks \*

Try to solve the following set of tasks:

1. **Init Containers**
   1. Create a set of two **init containers** and **one app container** *(in fact modify/extend the example shown during the practice)*
   2. The **first init container** should generate the following two lines with **10 seconds** delay

***dd-mm-yyyy hh:mi:ss => begin initialization …***

***dd-mm-yyyy hh:mi:ss => … done***

*Please note that the dd-mm-yyyy hh:mi:ss should reflect the actual time the event is taking place*

* 1. The **second init container** should add one more line like the following

***dd-mm-yyyy hh:mi:ss => launching the application …***

*Please note that the dd-mm-yyyy hh:mi:ss should reflect the actual time the event is taking place*

* 1. The **app container** should be **nginx** based and should **display the three lines** generated by the init containers instead of the **default index page**

1. **Ingress** and **TLS**
   1. Using either **NGINX** or **HAProxy** *(the implementation should not differ significantly)* **ingress controller** try to modify/extend the **fan out** example shown in the practice to **handle TLS traffic**
   2. Note, that you will need to create a **self-signed certificate** and store it in a **secret** which then to be **used in the ingress**
2. Another **Ingress Controller**
   1. Repeat the **fan out** example shown in the practice but with another **ingress controller of your choice** *(not* ***NGINX*** *or* ***HAProxy****)*

*As usual, you are not obliged to complete all the tasks but try to tackle as many as possible*

## Proof

Prepare a document that show what you accomplished and how you did it. It can include (not limited to):

1. The commands you used to achieve the above tasks
2. A few pictures showing intermediary steps or results
3. Any configuration files and/or manifests