**Exposing services to the external world (45’)**

**Exercise 1 – Deploy simple web app and test it locally**

In this exercise, you must expose a web application to the external world. You can use the image stephaneey/simplewebapp:dev.

Once deployed, test it locally using kubectl port-forward

Tips:

* You will need one deployment and one service
* You will need kubectl

**Exercise 2 – Expose the service through the ingress controller**

In this exercise, you must expose simplewebapp to the external world. To do this, you must:

* Install the ingress controller using helm
* Create an ingress rule that exposes the simplewebapp service created in exercise 1.

Tips:

* You will need helm to install the ingress controller
* You must deploy a resource of type “Ingress”

**Exercise 3 – Using TLS termination to expose the service**

In this exercise, you must expose the same web application to the outside world using a trusted authority for the certificate.

Tips:

* You will need helm to install cert manager
* Because you don’t own a domain, you’ll have to use the nip.io domain to make your request to Let’s Encrypt.
* You will need an ingress rule for TLS