**Task**

This assignment is intended to be done in pairs.

Some people say you only understand something once you try to teach others. This assignment attempts to engage students in a hands-on learning experience by having them conceptualise, design, create, implement, and then reflect on creating a CTF-style challenge and the tutorials required to teach students concepts.

## Conceptualisation

You must conceptualise a cybersecurity/programming challenge based on your exposure to previous topics or through your research. Examples of challenges include programming, system commands, security tools, or something you have discovered independently.

This stage encourages students to think creatively and apply their knowledge novelly.

## Research and Design

After selecting a challenge, students will research and design the specifics, including the process a learner would undergo to solve it and the resources required for construction.

This stage involves critical thinking and problem-solving. You must anticipate potential obstacles and devise appropriate solutions.

## Implementation

Students will bring their design to life by creating the finished product, [a markdown document](https://developers.google.com/tech-writing/one/markdown#:~:text=Markdown is a lightweight markup,%2C bullets%2C and so on.) for CTFd, a Google form for peer review, build scripts for automation (if required), and a tutorial (in a recipe/poster format) for others on how to solve the challenge.

This stage showcases your technical expertise and ability to create comprehensive, user-friendly resources. The implementation process will encourage you to improve your documentation and communication skills.

## Reflection

Lastly, you will write a short reflection on the entire experience incorporating feedback from your peers. This reflection is intended to enable students to evaluate their process and identify improvement areas critically.

Outputs

You must produce a [markdown document](https://developers.google.com/tech-writing/one/markdown#:~:text=Markdown is a lightweight markup,%2C bullets%2C and so on.) with your challenge for CTFd.

You must produce your challenge material, including any build scripts and documentation, to allow the material to be deployed.

Additionally, you must construct two A3 posters (templates provided).

###### Poster 1 must include the following:

The conceptualisation of your challenge

* a brief description of your challenge
* explanation of the challenges relevant to networking, systems, and/or security

Research and Design

* Documentation of the challenge, including the intended learning outcomes
* required material

Reflection

* a short reflection discussing the following process, including the following points
* Overall experience
* challenges faced and how they were overcome
* areas of improvement
* the value of collaboration and peer feedback
* What was learnt, that could be useful in future projects

###### Poster 2:

You will provide your “recipe” tutorial. This recipe will guide the user step by step to solve the problem given.

Lastly, you must include a short note documenting:

* What percentage of work each member of the group did.