

# Design Model of Documenting Challenges

## Introduction

Each new challenge needs to be documented and organized into GitLab so that there can be some understanding from competitors about what the challenges are after the competition is over. Along with that with keeping/maintaining a organized GitLab we can expand the longevity of the project by passing it down to the Cyber Security Club to host their own competition. For documenting each challenge there are four main requirements: all the files that are used to make the CTF, a README.md, a description.md, and a writeup.md. Together these create the design model of the documenting challenges.

## Challenge

For each challenge a new directory within the directory of its rightful category is made within the sprint branch at the time of creation. The directory title is the name of the CTF challenge. This will be the spot that holds all of the required attributes listed above.

The screenshot displays a GitLab repository interface for the 'Cybersecurity CTF Project'. The breadcrumb trail indicates the path: '2024 Capstone > Cybersecurity CTF Project > Cybersecurity CTF > Repository'. The main content area shows a file browser for the 'sprint-04' branch, specifically the 'cybersecurity-ctf / Project Documents / Cryptography' directory. A table lists the contents of this directory, including a '..' entry, a folder 'Beat My High Score', a folder 'Class Reading', a folder 'Cyber Security Homework', and a '.gitkeep' file. The 'Last commit' and 'Last update' columns show the most recent changes for each item.

Name	Last commit	Last update
..		
Beat My High Score	Add new file	1 week ago
Class Reading	Upload New File	1 week ago
Cyber Security Homework	Upload New File	1 week ago
.gitkeep	Creating a file to hold all of the Cryptography Challenges	1 week ago

Below the main repository view, a secondary view shows the directory structure for the 'Beat My High Score' challenge. This view includes a table with the following entries:




Name	Last commit	Last update
..		
Beat My High Score Files	Upload New File	1 week ago
.gitkeep	Directory to hold snake CTF	1 week ago
README.md	Add new file	1 week ago
description.md	Add new file	1 week ago
writeup.md	Add new file	1 week ago

## Files

Each challenge will then have a subsequent directory of files/commands that are needed to enact the challenge. This directory will have the title of the challenge plus files for easy understanding as seen above.


cybersecurity-ctf / Project Documents / Cryptography / Beat My High Score / Beat My High Score Files

/

Name	Last commit	Last update
..		
 .gitkeep	Add new directory	1 week ago
 Snake.html	Upload New File	1 week ago
 Snake.js	Upload New File	1 week ago

## README.md

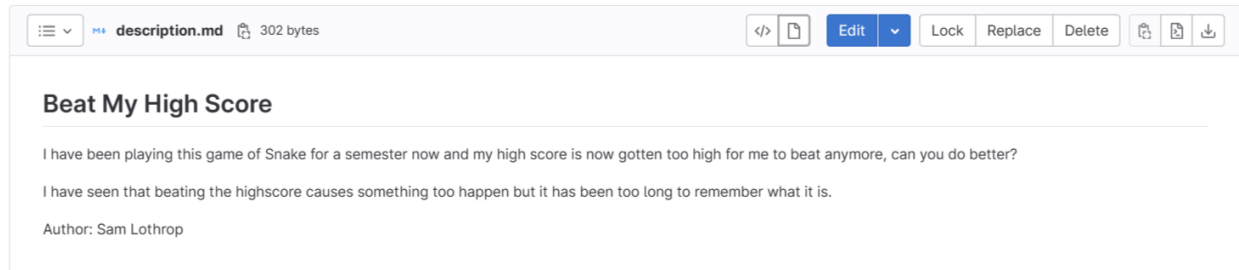
Each challenge also has a quick brief summary of what the problem is (categorically), its difficulty, and a brief hint towards the solution that doesn't blatantly say it. As in the example below.

 README.md
<h3>🔗 Beat My High Score</h3> <p>This is a mid level cryptography puzzle that ties in some simple reverse engineering.</p> <h3>Solution</h3> <p>Look at the code and make sure to keep track of the high score as you continue to try and beat it.</p>

## Description.md

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This is a small bit that is how the challenge will be presented to the user through the competition, normally it is witty and has something to do with the theme of the event although it doesn't have to be. This description will help give a general feel for what the challenge is asking the participant to do to find the flag.



## Writeup.md

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Writeup.md is the solution to the problem that identifies the key aspects to the puzzle that allow the participants to solve the challenge. If the problem has more than one solution, make sure to include all of them. The solutions should be easy to follow, so that players of all skill levels will be able to follow along to eventually find the flag.

