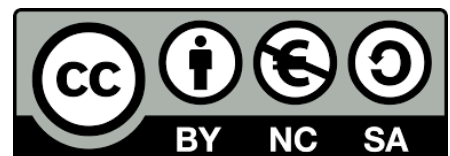# 2. Documentation and Version Control Systems

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Documentation.

Set up **JSDoc** in a JavaScript project. Document each function with detailed comments, then run JSDoc to generate HTML documentation. Try integrating this with a CI/CD pipeline.

Exercise

1. Create a function `subtract(a, b)` and document it.

2. Add descriptions and parameter types with `@param` and `@returns`.

Exercise

1. Write a function `getProductDetails` that takes a `product` object with `name`, `price`, and `tags` properties, then document it.

Exercise

1. Create a `Book` class with properties `title` and `author`.

2. Add a method `getDescription` that returns a formatted string with the title and author.

3. Document the class, constructor, and method.

Exercise

1. Write a function `multiply(a, b)` and use the `@example` tag to illustrate usage.

2. Document a sample invocation of `multiply` and show the expected output.

Exercise

1. Write a configuration file `jsdoc.conf.json` with the following content:

```
{
"opts": {
    "destination": "./docs"
}
}
```

2. Generate documentation using the command:

```
jsdoc -c jsdoc.conf.json path/to/your/file.js
```

Exercise

Create a **README.md** file for a sample GitHub project. Include a project overview, setup instructions, usage examples, and contribute guidelines.

Exercise

Choose a documentation generator (e.g., phpDocumentor) and create a basic documentation site for a simple PHP project.

Experiment with different documentation formats and see how they affect the final output.

Exercise

Use **GitHub Wiki** to document a project, including sections for an overview, setup, API endpoints, and troubleshooting. Collaborate with a team member, if possible, to practice co-authoring content.

Exercise

Create a Git repository for a web application project.

Add documentation files to the repository.

Commit and push changes to a remote repository.

Collaborate with others on the documentation by creating branches and pull requests.

Exercise

Set up a Git repository on GitHub for a project, secure it by using SSH for remote connections, and configure branch protection for the main branch.

Exercise

Create a **GitHub Action** that generates and publishes your JSDoc documentation every time a push is made to the "main" branch.