Explanation of portfolio:

Click on the "portfolio" file to enter the page. You can see the index above. Each logo corresponds to a web page. There are links to jump between each web page.

The upper left corner shows some basic information about the portfolio.

By clicking "Home" in the index, you can see some private information about me, including my photos.

Click on the page in "Curriculum" and move the mouse to the table. The row where the mouse is located will change color, making it easier to find courses at the corresponding time.

Continue to click "Resume" to jump to my CV. Click "Resume", "Home", and "Curriculum" in the index again to jump back to the page corresponding to the title.

The last Class1, Class2, Class3... provide downloads of corresponding course exercises. Courses without exercises do not have corresponding icons displayed.

Summary of learning content for the 2023/2024 WS school year:

Class 1: Key Concepts

* Course overview and objectives:

People can interact with others through social media.

Social media relies on various media, such as images and text.

Connect with others through social media.

Study the principles, concepts, and impact of social media on people's lives.

* Definition of Designing and online medias:

Design content includes user interface, interaction design, visual design, etc.

Online media refers to the use of images, audio and video to communicate over the Internet. Social media is a form of online media.

* The evolution of online medias platform:

In the early days, communication was mainly conducted through text in forums.

After the development of the Internet, video and voice have become convenient.

Later, people could use the Internet to share their stuff freely, including pictures, videos, and music.

* Key technologies driving platform development:

Smartphone mobile technology, data analysis and personalized recommendations, artificial intelligence and machine learning

* Terminology related to platform development:

API, SDK, UI, DBMS, cloud computing

### Class 2: Platform Architecture and Infrastructure

* Definitions

Study the overall structure and organization of a system or application.

* Client / Server architecture：

It is a computer system architecture. Clients and servers communicate and interact over the network. The client refers to the terminal device used by the user. A server refers to a computer or system that provides services. The server receives the client's request and processes it

* Client / Server infrastructure:

It includes server hardware, operating systems, network equipment and protocols, databases and storage systems.

Provides reliable communication and data transfer properties.

The computing and storage capabilities of the server are used to meet the needs of the client.

Class 3: Frontend Development

Front-end development refers to developing web pages and user interfaces.

The key technology is web development. Create web pages using HTML. Using CSS can make web pages more beautiful, and overlay links with HTML to get a better UI experience.

### Class 4: Frontend Development

* CSS layouts

CSS layout refers to using CSS to define and control the position, size, and arrangement of web page elements to achieve the structure and appearance of the web page. Through CSS layout, you can create different types of page layouts such as multi-column, responsive, and grid.

* Javascript:

JavaScript is a programming language used to add interactive and dynamic functionality to web pages. Through JavaScript, you can operate web page elements, process user input, perform animation effects, send network requests, etc.

Class 5: Frontend Development

Programming languages are formal languages used to write computer programs. They consist of a set of rules and symbols that define the structure, behavior, and logic of a program. Here are the main concepts of programming languages:

Syntax，Variables and Data Types，Operators and Expressions，Control Flow,Functions and Modules，Input and Output

Class 6: Backend Development

API is a tool used for communication and interaction between different software applications. It connects the front-end and back-end of the application. The front-end refers to the user interface, while the back-end is the core functionality and data processing part of the application.

Backend development refers to the process of building and maintaining the backend components of an application. Backend development focuses on tasks such as processing data, executing business logic, and interacting with databases.

API plays an important role in back-end development, allowing front-end applications to send requests to the back-end through defined endpoints and obtain required data or perform specific operations.

By using APIs, front-end developers can take advantage of the functionality and data provided by the back-end without knowing the specific implementation details of the back-end. This separation allows front-end and back-end development to proceed in parallel and promotes collaboration between teams and code reuse.

### Class 7: Backend Development

* Server, Hosting, and Deployment;

A server is a computer or computer system that stores and processes data and provides services to clients (such as browsers, mobile applications, etc.)

Hosting is placing the running environment and data storage of an application or website on the servers of a third-party service provider. The hosting provider takes care of the configuration, maintenance, and security of the servers, allowing developers to focus on application development without paying attention to the underlying infrastructure. Deployment is the process of moving an application or website from a development environment to a production environment. It involves placing the application's code, dependencies, and configuration files on the server and ensuring that the application runs correctly and serves users.

* Backend programming;  
  Backend programming refers to the process of developing and maintaining the backend of an application. Backend developers use programming languages and frameworks to process data, execute business logic, interact with databases, and provide APIs for use by front-end or other applications. Backend programming focuses on the core functionality and data processing of the application, ensuring that the backend can handle requests efficiently and provide the required functionality.
* Data Storage and Databases;

Data storage refers to the process of saving data in a computer system. A database is a piece of software specifically designed to store and manage data. It provides a structured way to organize and access data, and supports data query, update and delete operations. Databases can be used to store user information, application configuration data, business data, etc. Backend developers use databases to store and manage the data required by their applications, ensuring data security and consistency.

Class 8: Backend Development

Command line interface - CLI

CLI is a way of interacting with a computer by entering text.

Node.js and vscode

Node.js is a tool that allows Javascript to run.

VSCode is an open source editor that supports the operation of multiple computer languages.

Dependencies

Dependencies refer to situations where an application becomes overly dependent on other modules during the development of the backend. This dependency is necessary so that operations between various software can interact.

Application ports

Application ports identify specific programs or numbers on the Internet and facilitate communication and information exchange between different computers.

Class 9: Backend Development

* Application debugging:

Program debugging is the process of identifying and fixing errors in code. Here are some common debugging methods:

1. Print debugging:

2. Debugger:

3. Unit testing:

5. Code review:

6. Find error messages and logs:

7. Re-read the code:

8. Use debugging tools:

Class 10: Data Storage and Databases

* Data Storage:

Data storage refers to the process of saving data in a computer or other storage device. Data storage can be temporary or long-term.

* Databases:

Database is an electronic system for storing data. It is a structured data collection that can define, store, retrieve and manage data.

* Types of database:

1. Relational Database: Relational database uses tables to organize and store data, and uses SQL (Structured Query Language) to query and operate data. Common relational databases include MySQL, Oracle, Microsoft SQL Server, etc.

2. Non-Relational Database: Non-relational database, also known as NoSQL (Not Only SQL). Non-relational databases use various data models to organize and store data, such as key-value pairs (Key-Value), document (Document), column family (Column Family), and graph (Graph). Non-relational databases are suitable for large-scale, distributed and high-performance data storage needs. Common non-relational databases include MongoDB, Cassandra, Redis, etc.

3. Object-Oriented Database: Object-Oriented Database is a database system for object-oriented programming languages. It can store and manage object-oriented data, such as objects, classes, properties and methods, etc. Object-oriented databases map and store objects more directly. Common object-oriented databases include db4o, ObjectDB, etc.

4. In-Memory Database: In-memory database stores data in the computer's memory instead of on the disk. It has very fast read and write speeds and is suitable for applications that require high performance and low latency. In-memory databases can be relational or non-relational. Common memory databases include Redis, Memcached, etc.

Class 11: Full web application (study case)

* Version Control System:

Version Control System (VCS) is a software tool that records file change history and manages multiple versions. It tracks file modifications, additions, and deletions, and provides a way for development teams to work together so that multiple people can edit and manage the same code base or project at the same time.

* GIT / Github:

Git is a distributed version control system. It is widely used in software development and can effectively track file changes, manage branches, merge code, and collaborate on development.