Weekly Update

Group Name and Number: IllegalGroupNameException Group8

TA:_____Li Yunkai_____
We met with our TA for _45__ mins, in person/on Zoom this week.

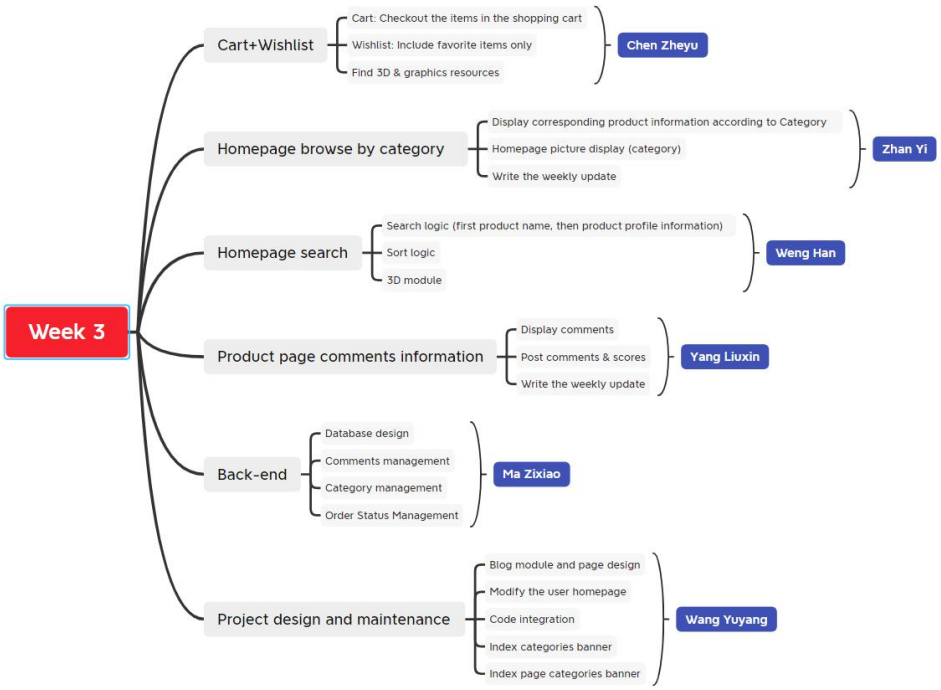
	Item
1.	What our group has done since our last meeting: 1. Group meetings This week, we have two face-to-face meetings. One with our TA Li Yunkai lasted for 45 minutes on Monday. Another meeting happened on Saturday within our group members. In the **meeting with our TA**, he told us to include the **contribution percentage** and the **detailed labour allocation** in the weekly update. In this way, the **equal work** done by each team member can be identified quickly and more fairly. Moreover, our TA gave us some instructions about the execution of the **Gantt** chart. According to him, we are recommended to attach great importance to the core functionalities that are crucial in presenting our web project. If the core functionalities are allocated simultaneously as the trifle functions, it may result in a possible **risk of the delay** of our project due to irrational **cost management**. Inspired by TA's advice, we reallocate the individual work that each team member needs to finish to ensure the **stability and on-time delivery** of our project development. Our **own meeting** lasted from 2 pm to 6 pm on Saturday, the purpose of which is different from the meeting with our TA. Instead of focusing on the project plan for the next week, this meeting concentrated on **solving encountered problems as a team**. Our strategy for collaborative software development is to **write codes in separate branches** and **merge them into the main branch** after finishing and testing the development of a small functionality in case of collision. If a collision occurred, we would identify what resulted in such collision and discuss to accept which version was written by which team member. The reason for this strategy, developing and testing first, merging next, is to guarantee the **correctness** of our project in case casual "rollback" will result in chaotic project management. We learn from this strategy that we can always find the optimal approach to address difficulties when we sit together **as a team**. The following figure shows that our group members develop the project together, during which process, we understand the **individual and overall**

project progress. We are firmly convinced that this consciousness offers us much internal security, not only for the project but also for the cooperation of our web project development.

Figure - one team member works online with us because of his quarantine

2. Develop functionalities

The following figure gives an overview of what we have done for week3.



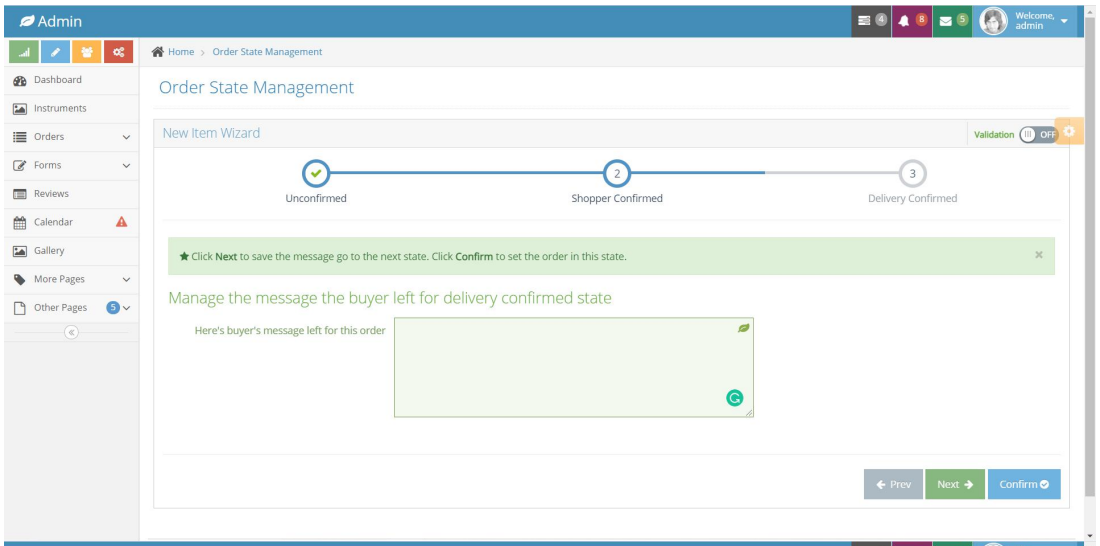
The main task we have finished for week3 is developing instruments category, shopping cart, comments or review, order management.

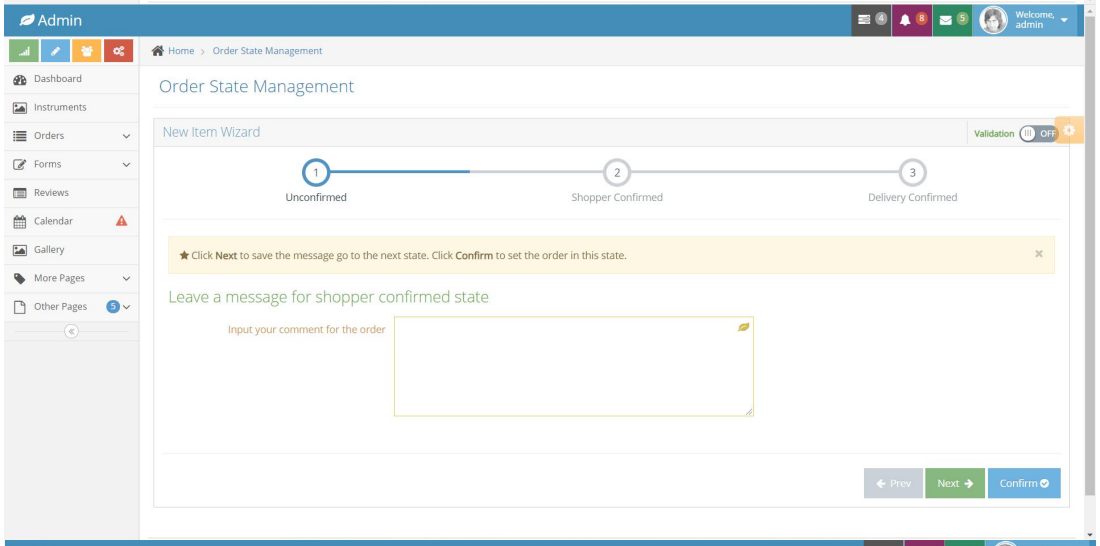
The **categorization** includes the search by different instrument names and the division of the home page by category. To achieve this, we **redesigned the database mode**l and introduced the Category tag, which has a name, a description and a creation time. We display all category tags on the homepage, and when a user clicks on a tag (e.g. piano), he will be redirected to the piano section, where there are descriptions of the different types of pianos and the different types of pianos that are for sale. At the same time, when the user uses the search bar above and searches for the label piano, he can also enter this section or a specific piano product. The back-end of this feature has already been implemented.

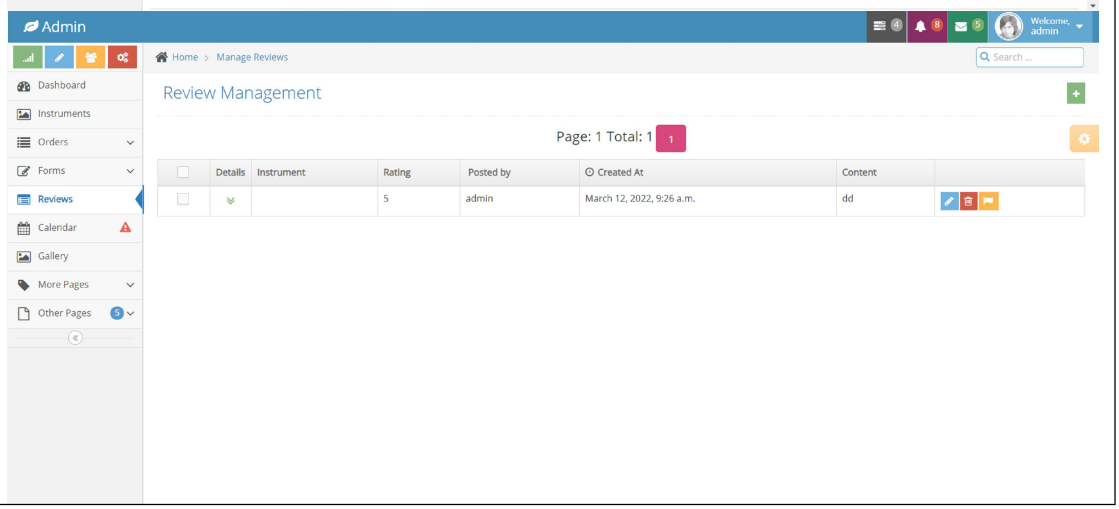
In implementing the **shopping cart** functionality, we wrote a database bound on different users to store different shopping cart data. When a user adds his desired product to the shopping cart, he can select the quantity he wants, and the shopping cart will be billed uniformly. When the shopping cart order is submitted, a new bill is created in the database successfully.

Another accomplished task is the functionality of **reviews**. Currently, we have implemented the function of first level reviews, i.e. users can comment on the purchased products after purchasing them. We intend to implement a review with multiple levels in the following week, which means other users can reply to or comment on its parental review.

The last core functionality developed in the last week is **order management**. This deals with the order status changes, such as unconfirmed, shopper confirmed, and delivery confirmed. The following figures present this functionality.







Besides, we **optimized and integrated** the data of the collated project, as described above, **redesigning the database**, **integrating different functions**, **merging each member's branch to the main branch**, **resolving conflicts between different functions**, etc.

3. Particular functionality - 3D development

We want to develop an interactive instrument customization module, where the user can customize the color of the different parts of the product he wants to buy. This feature is one of the highlights of our project. For this, we need a lot of time to complete a whole set of processes. We need to prepare the instrument model, learn how to render the model to the web page, and then learn how to modify the model on the web page. This is a time-consuming and labor-intensive process. Last week, we learned how to use Blender to color-change the base model of the instrument, and prepared models of different instruments in different colors. This week, we learned *Three.js* to render models to a website. It is an open source *Javascript* framework capable of achieving 3D effects. With it, we successfully displayed the model on our web page. During the process, we found that the loading of the model was relatively slow. This means that if we prepare models of different colors and let users choose, it will take too long and may affect the user's experience. We wanted to avoid this problem, so after discussion, we decided to provide a simple model that allows the user to modify the color of each part of the model. With this approach, the model actually only needs to be loaded once, and the overall usage is smoother.

We have implemented several supporting functions for **<u>partial highlighting, component disassembly, and color change</u>** of the model. The following are some pictures from the website.

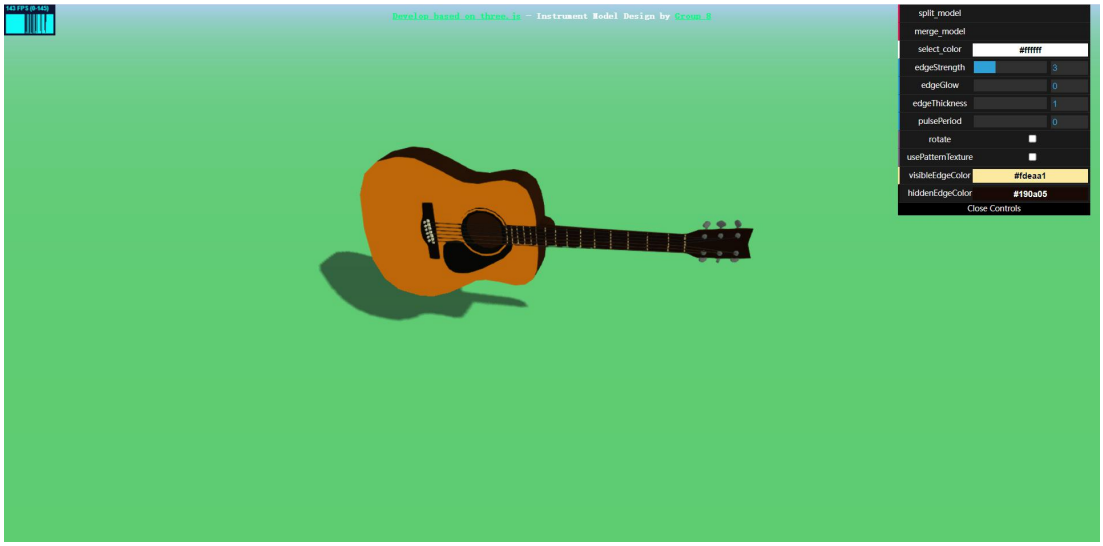


Figure – Real-Time 3D model rendering

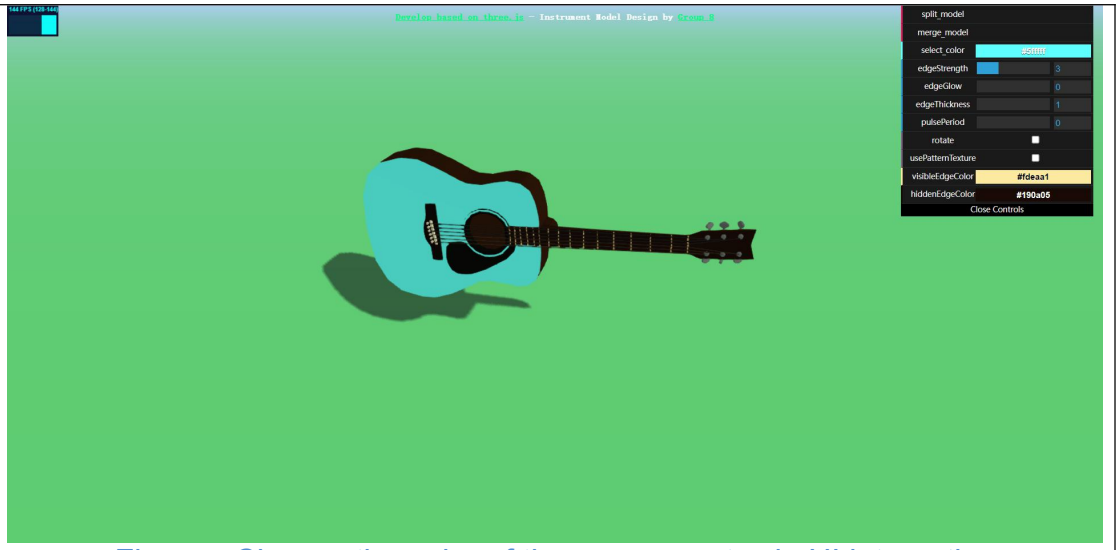


Figure - Change the color of the components via UI interaction

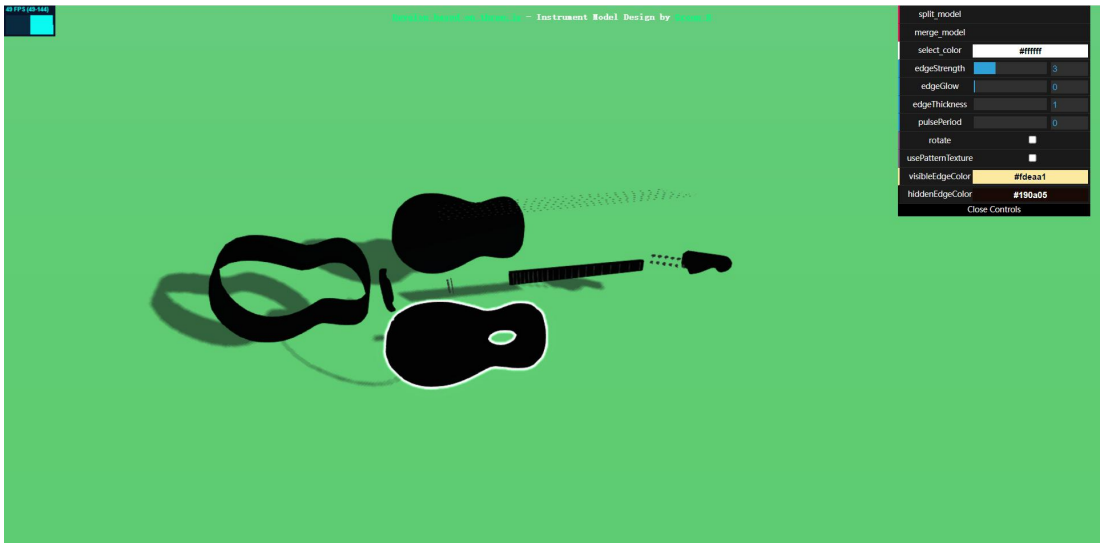


Figure - Split the components via UI interaction

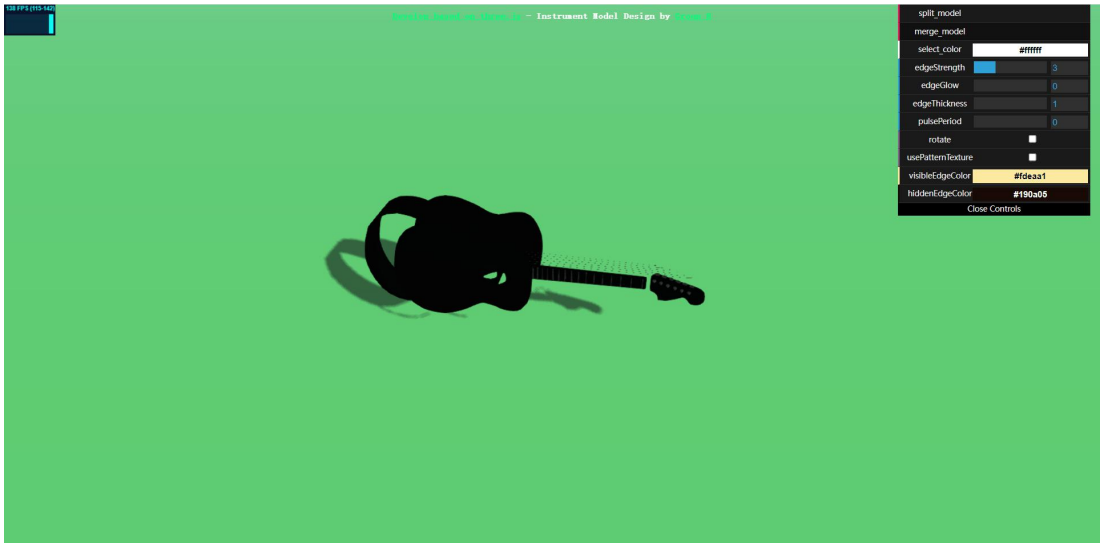
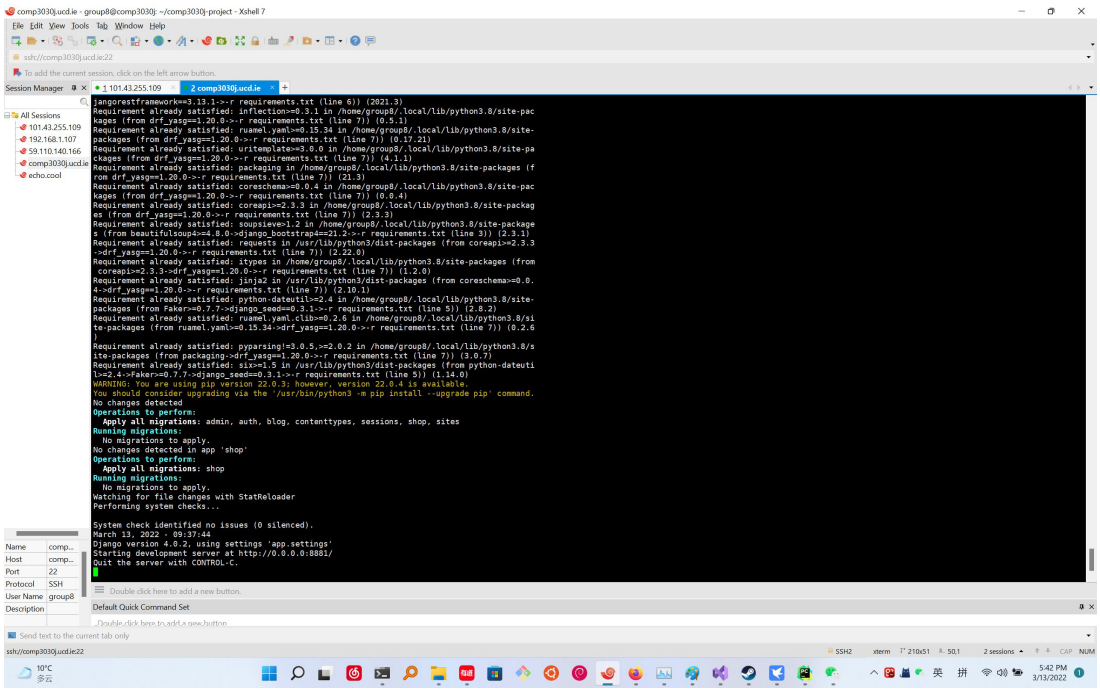


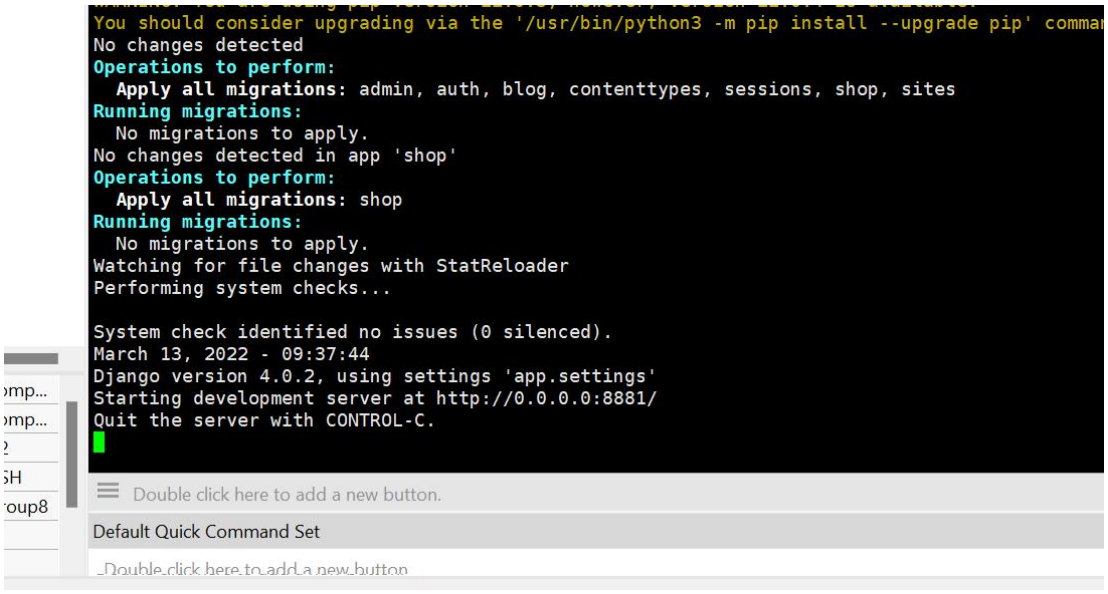
Figure - compound components via UI interaction (Animation)

4. Server deployment

Our group asked some questions related to the server deployment on the *CSmoodle*. Moreover, here is some accomplishments of our deployment progress.

4.1 Upload related program files to cs server
4.2 Install the relevant dependencies
4.3 Deploy the project's website on the server





5. Write reflections about the *Collaborative Software Development*

Each our group members write our individual reflection of *Collaborative Software Development* on the overleaf. The following figure shows what we have done for the overleaf to track our important points and progress.

Following is the content presented in our Overleaf:

COMP3030J Software Engineering Project 2021-2022
Group 8: IllegalGroupNameException

Wang Yuyang
Yang Liuxin
Zhan Yi
Weng Han
Ma Zixiao
Chen Zheyu

1 Membership Introduction

All members of Group 8 firmly believe that we can make great progress through unity, mutual help and equal division of labor. From left to right in the following figure, the group members are Weng Han, Zhan Yi, Wang Yuyang, Yang Liuxin, Ma Zixiao and Chen Zheyu shown in the iPad who is attending our online meeting because of quarantine.

Figure 1: Members of Group 8

2 Reflection of Cooperative Software Development

The following parts present our reflections about reading the book.

2.1 Wang Yuyang

This book introduces the origin of software engineering and its development, with the high reference value and learning significance. It is unique in two ways. First, unlike many software engineering books, this book focuses on the many facets of software engineering work in its many facets. Second, the book summarizes vital findings but also questions them, opening up a dialogue about the nature of software engineering work and the many factors that shape it.

During the teamwork process, we have encountered disagreements that required negotiation. This book provides some excellent examples to apply what we have learned and apply what we have learned in the actual project development process.

2.2 Yang Liuxin

Our professors highly recommend this deeply thought-provoking book. From this book, I know how software engineering emerges. Software engineers usually work as a team, and each of the members contributes to the group work by shouldering their responsibility. During this process, effective communication is conducive to productivity among the group to develop a high-quality product. Quality is composed of several aspects, such as correctness, reliability, performance and so on, which gives us guidance to produce a better web project for COMP3030J. Moreover, identifying the requirements is indispensable in developing a complete, precise, non-conflict, and verifiable software product.

2.3 Chen Zheyu

The book taught me many valuable experiences. Close cooperation among project team members mainly refers to finding appropriate answers to the division of labour, communication, coordination, and cooperation in the planning, development, and maintenance of software systems. When we do large-scale software development, we need to follow this principle to find the optimal solution, improving efficiency and team unity.

2.4 Zhan Yi

After reading the book recommended by the teacher, I understand the purpose of the system architecture. When we develop a large-scale project, it often results in a function needing to be completed by different people simultaneously, or there are some links and interference between multiple functions. When we need to modify some functions, it is easy to affect other functions, which often increases the maintenance cost of the project. In order to solve this problem, we need to design the structure of the web page before developing the software, such as the design of database and website functions. We need to encapsulate some of the excuses and functions, improving the stability and maintainability of our project's code.

2.5 Ma Zixiao

The book describes the way to cooperate with others to develop software. It is the first time I knew that there were so many skills to cooperate as a team. The most impressive chapter for me is communication which is the aspect that I do not good at. From the book, I know that the communication between teammates should be effective, which means that we should only transmit valuable information to our teammates. Furthermore, I learned that communication should be in time, which means that once we have something to communicate with our teammates, communicate with them face to face or through the internet. If the communication part is completed well in our team, I believe that our final product will be done well.

2.6 Weng Han

What impressed me most about this book is the part that describes how teams develop software. Although before this, I have had many cooperation experiences with my classmates, I have never learned so many details from the book. It is mentioned in the book that teamwork requires each member to contribute by taking their responsibilities. In this process, the effective communication and reasonable arrangement of customs clearance can improve the productivity among the teams, catalyze the chemical reaction among the members, and thus have a better chance to develop high-quality products. I also feel very much about it; communication is essential for teamwork. If team members are unwilling to communicate, they may not understand each other's ideas, which undoubtedly increases the possibility of conflicts and misunderstandings, increases the difficulty of cooperation, and has a vicious impact on the completion of the overall project. Conversely, effective communication helps us pass on valuable information to our teammates, allowing team members to work more efficiently. In short, I have benefited a lot from the reading process, and I will also attach importance to communication in this project development to promote effective communication, and we will be able to make a satisfactory final product.

2. Contributions of each team member since our last meeting (show overall % contribution):

Name	Contribution	Work Done
Wang Yuyang	16.7%	Project design and maintenance 1. Modify the user homepage 2. Code integration 3. Index categories banner 4. Index categories banner
Yang Liuxin	16.5%	Product page comments information 1. Display comments 2. Post comments and scores 3. Write the weekly update.

	Zhan Yi	16.5%	Allow instruments information to be displayed according to their category in the home page. Homepage browse by category 1. Display corresponding product information according to Category 2. Display instruments according to their categories in the home page. 3. Write the weekly update.
	Weng Han	16.8%	Homepage search 1. Search logic (first product name, then product profile information) 2. Sort logic 3. 3D module
	Ma Zixiao	17%	Back-end 1. Database design 2. Comments management 3. Category management 4. Order Status Management
	Chen Zheyu	16.5%	Implement the shopping cart and wishing list. 1. For shopping carts, users can check out the total amount of instruments in their carts. 2. For wishing lists, it contains the instruments that the user has preference for. 3. Search and collect 2D figures and 3D models.

3.	We have the following questions and/or issues that we would like to discuss: 1. How to expose a **port** to the internet to make our application accessible? 2. Whether professors can prepare the **docker** environment on cs-server? **3. Front-end unification and development** To finish the development of the website as soon as possible and give more testing time for the subsequent development, all six students in our group focused their primary efforts on the development of the features. At the same time, to avoid database conflicts, we did not push the database to GitLab, but each student used their database to test the website, which led to a problem. Even though the database model has been built, we do not have perfect data for testing. As a result, our front-end is not user-friendly enough now. We will focus on unifying and improving the front-end before showing it in week 8.

1. Functionality testing

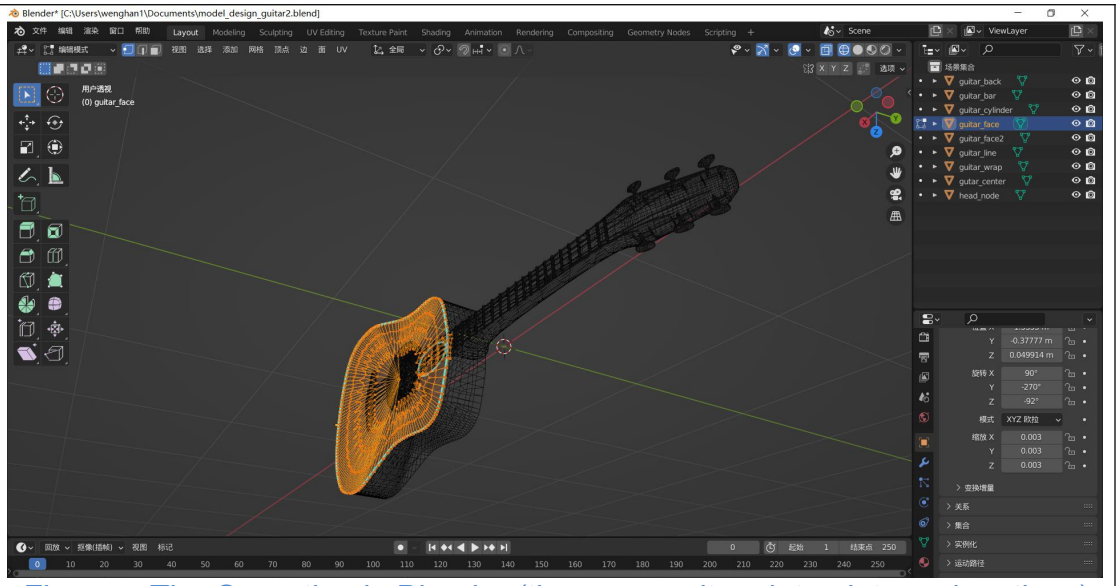
Some of the seemingly completed features have bugs and often do not work well when other members debug. This problem is that our group currently does not have a well-developed database for testing. In order to solve this problem, our group decided in our Saturday meeting to push the database to GitLab as well. This has led to a significant problem where changes to the database by different development members have led to code conflicts. Currently, this issue is still being negotiated within the group, and on Saturday, all members sat down together to develop, merge branches, and complete the version tagging to become an outlet for this issue.

2. Midterm presentation

We already know from our teaching assistants that we will present our midterm project. As the first user of our project, the professor will need to grade our deliverable. Before that, our project had to be unified front and back, so our development schedule needed to be adjusted later, from the implementation of the features to the unification and testing of the front and back ends, to better report to the professor.

3. Model Design

Finally, for the model customization function, one of the highlights of our project, although we successfully displayed the model on the page this week and made progress in stages, we also have some problems to continue to study. For example, the material of the model is lost. This problem is caused by the diverse materials of the model itself. Our models are carefully selected from network resources. Some of the models will lose information when exported due to material problems, and cannot be correctly rendered on the web page. In addition, although we have implemented the part splitting function of the model, we are also facing the problem of part specification. The split effect of the model requires us to spend a lot of time specifying the specific parts of the model in Blender, such as the different face chords of the guitar. Each model usually consists of thousands of points and faces, and we need to classify them and divide them into different sets. Later, in the process of splitting, we need to specify the movement trajectories of different parts, which greatly increases our workload.

	 Figure – The Operation in Blender (there are quite a lot points and vertices)
4.	What we plan to do before the next meeting: 1. Implement the profile page for buyers. 2. Implement some of the common functionalities of sellers and buyers, such as register and login. 3. Apply visually entertainment Bootstrap4 template to the register and login page. 4. Collect instruments' figures and their corresponding descriptions for the front-end next week. 5. Store the 3D models which can be used for customization purposes.