Project Title
E-Commerce

Group Members:
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1.Introduction

Project Idea: Create an E-commerce website to sell school merchandise to students.

Project Rationale: We want to be able to allow the school merch team to sell their merchandise year-round like hoodies, pencil cases and files. We are also planning to collaborate with other schools who also sell merchandise. Our website will hopefully be a platform for merchandise advertising and smoother user payment experience. This will be convenient for students to buy and sell merchandise.

Focus of Project: Designing and creating a website that allows users to add and purchase items. The website should also have a good user interface and make the user experience feel smooth, such as adding search bar, filter, user account system etc.

Project Audience: Schools and Students (HCI student council)

Scope of Project:
1. Create home page of website
2. Create cart page and include add to cart system
3. Add description page for products - should include name, price and description of item
4. Add database to store products
5. Use database to create search bar
6. User account page/login
7. Filter
8. Payment Page

Take note that most of this information can be found in our GitHub repository here:
https://github.com/Vincent-Cayadi/Website-Backup

The name of the website is called Cotton Road

2. Literature Review/Theoretical Framework/Reference Models

Case Study:

Shopee and Carousell: We looked into 2 well known E-commerce websites in Singapore which are shopee and carousell. We focused on three topics which are security, delivery and payment. In Carousell and Shopee, the buyer's payments will be held in trust and only released to the seller once he/she has confirmed that he/she has received the item in good condition which will prevent sellers from scamming buyers. Sellers are able to offer a variety of delivery methods for buyers to choose to receive their purchases quickly and securely. Sellers are responsible for delivering items as advertised to buyers. In Shopee after confirmation of order by the buyer, the seller will be notified to arrange a pickup. Therefore, we plan to implement some of these methods to prevent scams and improve security of the website. We also looked into Shopee and carousell's user interface and plan to take inspiration and allow our website to have a better user interface.

The theme of the website is based on simplicity unlike Shoppe or Carousel with ads occupying more of the screen compared to the product themselves

Reference materials are based on the open-source code from the internet where people who wants to refer to the code of the website can refer and adapt the code to their needs so that they would not spend a lot of their time researching for the technologies used.

3.Study and Methodology

Methodology:

a.   Programs used:
- HTML
- CSS
- Javascript
- NodeJS – Most of the packages uses this
- Auth0 – To handle authentication
- MongoDB - Database
- Slick Carousel
- Icons from Font Awesome

b.   Methodology
      Add To Cart:

```javascript
// add item to the cart
function addToCart(id) {
    data[id].sizeselected = document.getElementById("detail-
size").options.selectedIndex
    if((data[id].sizeselected == 0) && (data[id].sizeInPage ==
true)){
        alert("Did not choose size!")
        addToCart()
    }
    if(!data[id].itemInCart){
        alert('Item Added to Your Cart')
    }
    else{
        alert('Your Item is Already There')
    }
    data[id].itemInCart= true
    updateCartPage()
    updateCookie()
    detailsPage.style.display = 'none'
}
```

- Gets data saved on database from item id and makes its item in cart = true
- Updates Cart Page to show Item and Updates Cookie to save it

```javascript
//display your cart page
function displayCart(){
    document.getElementById('main').style.display= "none";
    document.getElementById('details-page').style.display= "none";
    document.getElementById('cart-container').style.display= "block";
    updateCartPage()
}

// hide your cart page
function hideCart(){
    document.getElementById('main').style.display= "block";
    document.getElementById('cart-container').style.display= "none";
}

// Update cartList and corresponding elements.
function updateCartPage(){

    let cartList = data.filter(
        function(e) {
            return e.itemInCart;
        }
    );
    if(cartList.length==0){
        document.getElementById('cart-with-
items').style.display= "none";
        document.getElementById('empty-cart').style.display= "block";
    }
    else{
        document.getElementById('empty-cart').style.display= "none";
        document.getElementById('cart-with-
items').style.display= "grid";

    }

    totalAmount=0;
    totalItems = 0;
    totalSaving=0;
    temp_quantity=1;
    var clrNode=document.getElementById('item-body');
    clrNode.innerHTML= '';
    console.log(clrNode.childNodes)
```

```javascript
cartList.map((cart)=>
{
    var cartCont = document.getElementById('item-body');

    var tempCart = document.createElement('div')
    tempCart.setAttribute('id',cart.id);
    tempCart.setAttribute('class','cart-list');

    var listImg = document.createElement('img');
    listImg.setAttribute('id','list-img' + cart.id);
    listImg.setAttribute('class','list-img');
    listImg.src = cart.img
    tempCart.appendChild(listImg)

    var listPayContainer = document.createElement('h3');
    listPayContainer.setAttribute('class','payContainer');
    listPayContainer.innerHTML ='$'
    var listPay = document.createElement('h3');
    listPay.setAttribute('id','pay' + cart.id);
    listPay.setAttribute('class','pay');
    listPay.innerHTML = cart.price;
    tempCart.appendChild(listPay);
    tempCart.appendChild(listPayContainer);

    var listQuantity = document.createElement('input');
    listQuantity.setAttribute('id','quantity' + cart.id);
    listQuantity.setAttribute('class','quantity');
    listQuantity.setAttribute('type','number');
    listQuantity.setAttribute('value',"1");
    tempCart.appendChild(listQuantity);

    var totalPriceContainer = document.createElement('h3');
    totalPriceContainer.setAttribute('class','totalPriceContainer');
    totalPriceContainer.innerHTML = '$';
    var totalPrice = document.createElement('h3');
    totalPrice.setAttribute('id','totalPrice' + cart.id);
    totalPrice.setAttribute('class','totalPrice');
    totalPrice.innerHTML = cart.price;
    tempCart.appendChild(totalPriceContainer)
    tempCart.appendChild(totalPrice)

    var listName = document.createElement('h3');
    listName.setAttribute('class','list-name');
    if (data[cart.id].sizeselected == 1){
        listName.innerHTML = cart.name + " S";
```

```
        }
        else if (data[cart.id].sizeselected == 2){
            listName.innerHTML = cart.name + " M";
        }
        else if (data[cart.id].sizeselected == 3){
            listName.innerHTML = cart.name + " L";
        }
        else{
            listName.innerHTML = cart.name;
        }

        tempCart.appendChild(listName)

        var listTrash = document.createElement('i');
        listTrash.setAttribute('class','fa fa-trash ');
        listTrash.setAttribute('id','remove');
        tempCart.appendChild(listTrash);

        totalAmount = totalAmount + cart.price*temp_quantity;
        totalItems = totalItems + temp_quantity;
        cartCont.appendChild(tempCart)
    })
    document.getElementById('total-amount-
container').innerHTML = 'Total Amount : $ '
    document.getElementById('total-amount').innerHTML = totalAmount;
    document.getElementById('total-items-
container').innerHTML = 'Total Items : '
    document.getElementById('total-items').innerHTML = totalItems;
    document.getElementById('total').style.display= "block";
    ready()

}
```

- Update cart function
- Create new elements and values are equal to item data on database
- Total Amount page created as well, value equal to quantity times price of item

Details Page:

```
// details function
function handleDetail(e){
    detailsPage.style.display = 'block'
    getId= this.parentNode.id;
    detailsImg.src= data[getId].img;
    detailTitle.innerHTML=   data[getId].name;
    detailPrice.innerHTML= 'Price : $ ' +data[getId].price;
    detailDescription.innerHTML = 'Description:' +data[getId].delievery;
    if (data[getId].sizeInPage == true){
        detailSize.style.display = 'block'
    }
    else{
        detailSize.style.display = 'none'
    }
}
```

- Displays detail page and information on the page is equal to database information

Members Role:
- o Vincent: Designed product card, added user account info and login page, filter page, created database, maintain database and research
- o Wang Chen: Add to Cart function and designed cart page, details page, payment page and research

3.Timeline

This timeline would be very brief about the details and only cover the significant milestones of the website for more information please refer to the Github link above

January 4th 2021:

- The Github repository was made
- Initial Website design was published

May 4th 2021:

- Attempted Dark mode but was a huge mistake🤦

May 5th 2021:

- Clean up of the repository was there was a lot of junk🧹

May 6th 2021:

- Wang Chen was added to the project

June 15th 2021:

- Add to cart complete

June 30th 2021:

- MongoDB integration

July 4th 2021:

- EJS integration
- Uploaded images to MongoDB Database

August 2nd 2021:

- Full dark mode integration across the website 🥴

August 5th 2021:

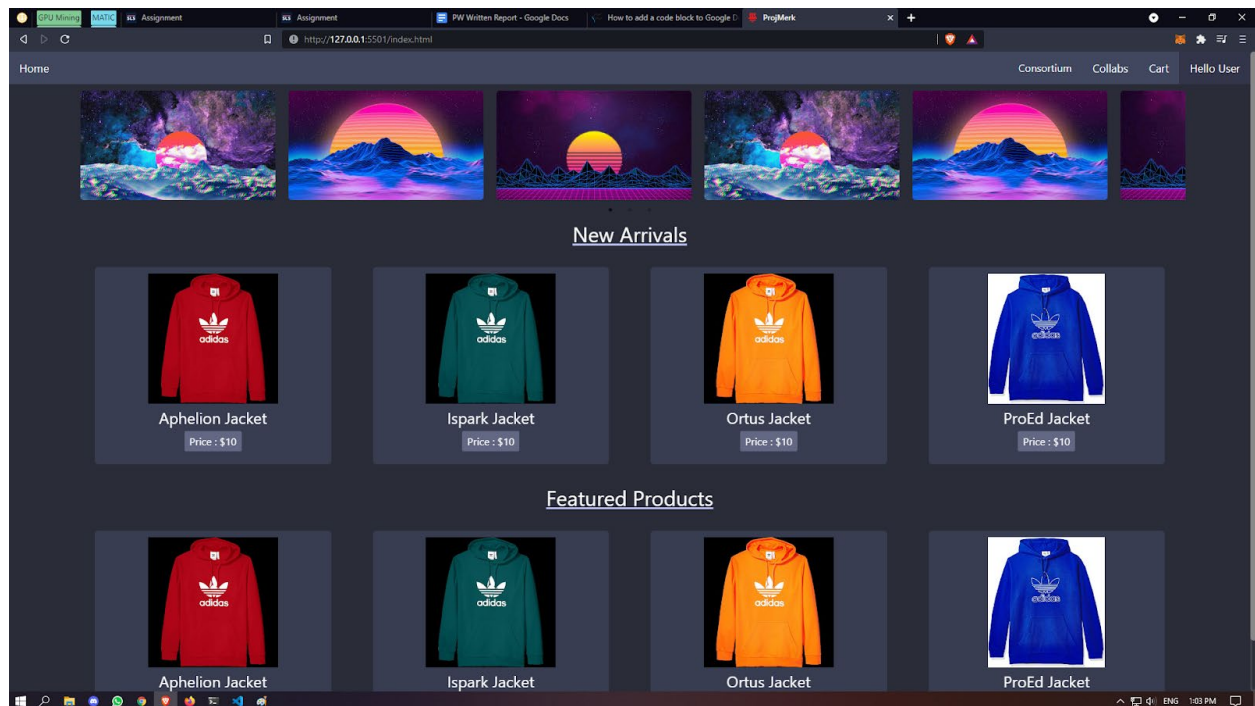- Auth0 integration
- Repository turned public

4.Outcomes, Analysis and Discussions

When the website was first given for testing, there was a lot of issues with it mainly because that it was not user-friendly enough.
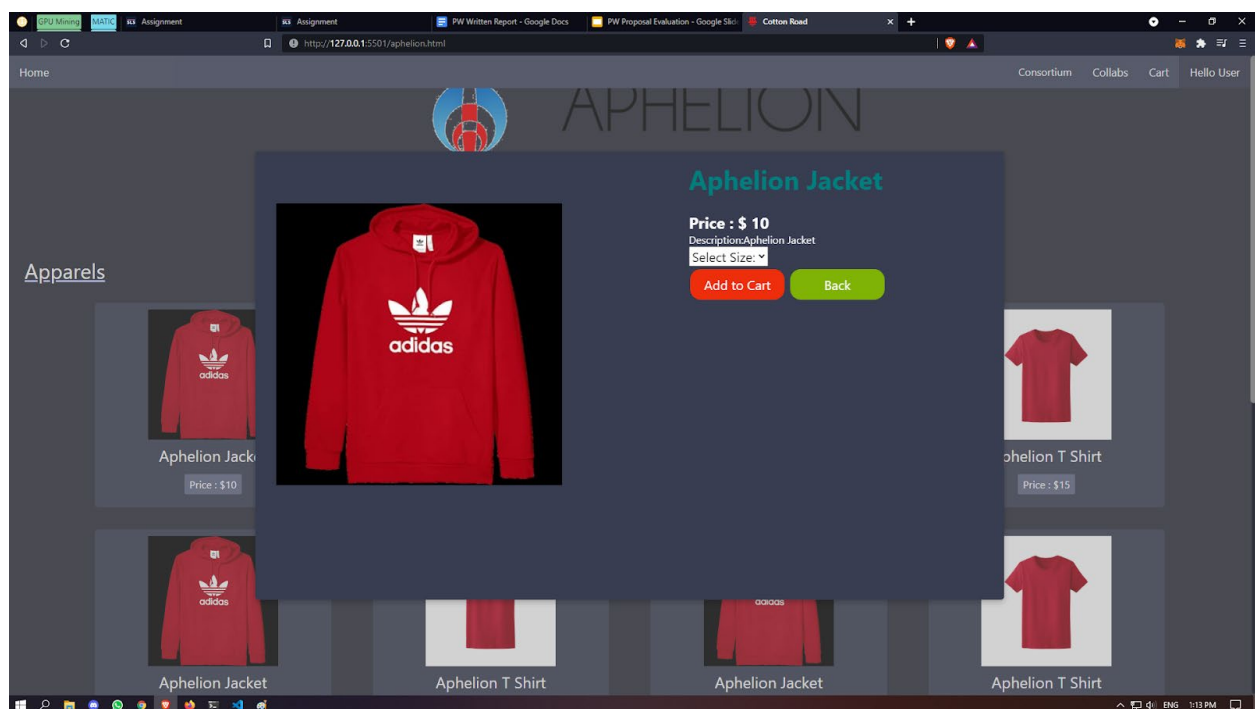
And with discussions with Mr Yong mainly pointing out that we were focusing on the coding too much and not the design aspects of the website

After much discussion and planning between Wang Chen and Vincent, we sat down together on one day and started drawing drafts of how the website should look like
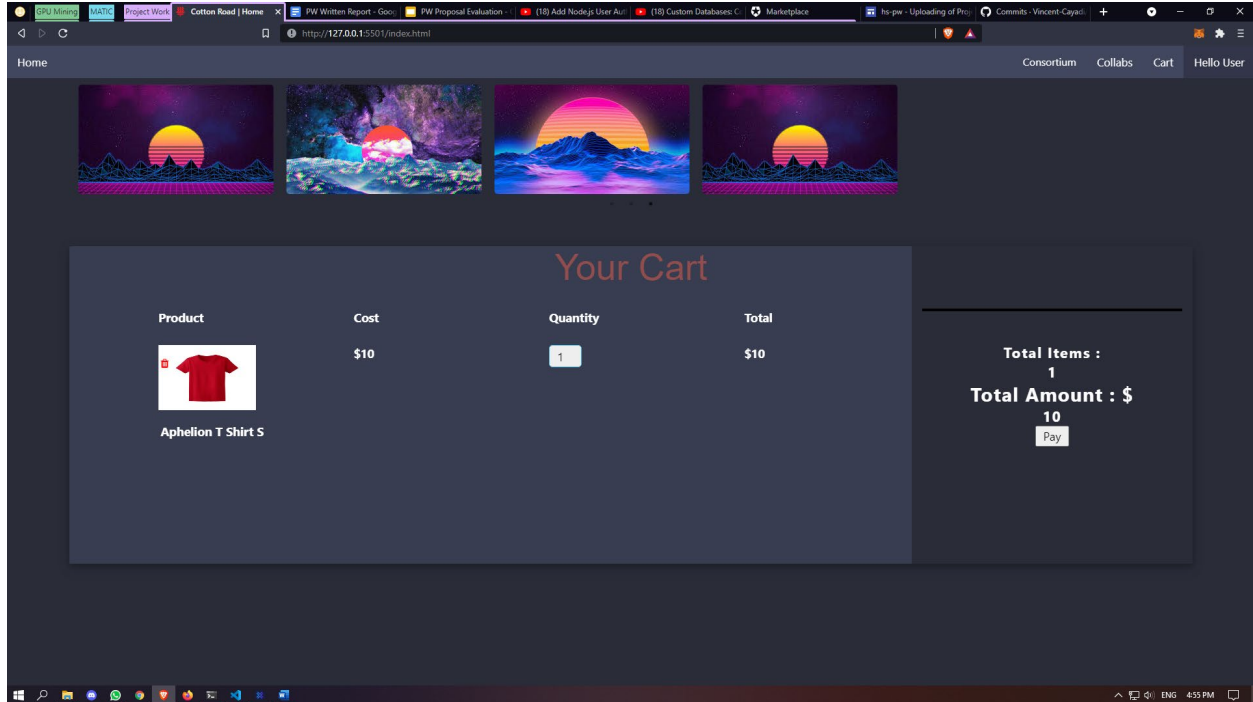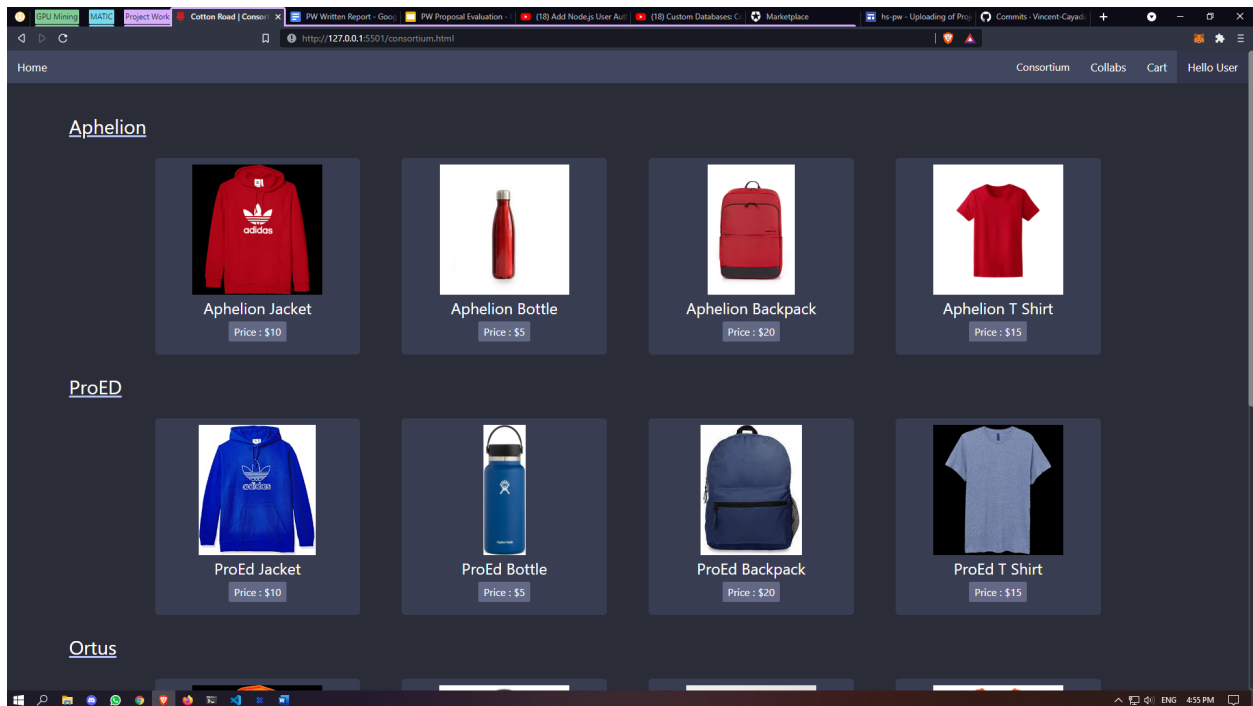
In the end it looks like this:

- Home page

- Description Page

- Cart Page

- Consortium Page

- Aphelion Page

5.Implications and Recommendations

Areas for Improvement:
1. Some areas are still buggy
2. The payment option is not functionable as a DBS Paylah account has to be made
3. Adapt the website for the smaller screen sizes/different screen sizes
4. Security
5. Better user interface (E.g Highlight certain button like the remove button when user hover over it)
6. Items which are newly added would show up on the home page new arrivals
7. Logos on the respective consortium pages

<u>6.Conclusion</u>

Grp Member Reflections/Learning Points:

Vincent:
Before I design the website I learnt that i should draft and draw out how the website should look like and not just go with the flow
Being a full stack developer is not easy as you have to learn both the server side and the user interface side and join them seamlessly
There are many different types of software solutions and you have to find what suits your needs the most

Wang Chen:
From the project, I definitely learnt more about javascript, html and css. While doing the project I had to search the web on how to program and design specific buttons and elements. Through this, I've learnt more on how to write javascript and how to debug errors. This project was pretty challenging for me at the start as I had no experience in javascript and I didn't really know what to do but after a few weeks trying to code and learning from the web, I started getting a hang of it and managed to put my ideas into action.

7.Bibliography

Shopee Information: https://help.shopee.sg/s/
Carousell Information: https://support.carousell.com/hc/en-us