Flipkart GRiD 4.0

2022 Campus Challenge

MetaCommerce - The Future of Shopping with Metaverse

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Team members details

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Team Members >	**1 (Leader)**	**2**	**3**
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Batch	2023	2023	2023

Deliverables/Expectations for Level 2 (Idea + Code Submission)

The solution should focus on:

- Building a web-based metaverse using out-of-the-box Avatar generation tools for users to enter and experience. **HInt - Existing open source solutions can be used.**
- Building a shared 3D space on the web that is shared concurrently by many users. **Hint-** Any existing 3D spaces can be used.
- We are listing a few feature suggestions below - Feel free to use a part or all of them in your experience Or additional features can be added too. The idea is to build a next-gen futuristic Metaverse Shopping experience.
- Ability to view products in 3D in the shared spaces and AR as well (You may allow users to scan a QR code to view products in AR on their phone)
- Ability to try-on apparels etc on the Avataar.
- **Bonus**- Add-to-cart/checkout of the product
- **Bonus- Voice chat with fellow shoppers, enablement of camera**
- **Bonus- Use your imagination and create innovative experiences.**

Glossary

- **Portals: A gateway that links user to different product section.**

- **Avatars: An icon or figure representing a particular person in a video game, internet forum, etc.**
- **Canavas: A 2D Space where we can display photos or NFTs.**

- **NFT: Non-Fungible Token is a financial security consisting of digital data stored in a blockchain, a form of distributed ledger.**
- **PreFabs: It is short for “prefabricated” which means “made beforehand”. We have created prefab for similar portals and canavas.**
- **SpawnPoint: A location in a space where the customer will appear.**

Instructions (You Can Delete this Slide)

Dear Team,

Congratulations on reaching this stage - We look forward to some amazing & innovative solutions.

Please find some important instructions before you begin to prepare your submission decks.

Slide Limit	:	10 Slides of Content post (after) this Slide
Saving Format	:	Save the file as a PDF to ensure your formatting remains intact
Submission Guide	:	Only the 'Team Leader' will be able to submit the Deck. Only the latest submission will be considered as final (You can keep updating your deck within the deadline)

Wishing you all the very best !

Team Flipkart GRiD

Use-cases

- Listing the use cases:

❑ Customer -> Admin
❑ Customer -> Customer

- Prioritizing the use cases:

❑ P0 – Invite Friends/Customers to shop together
❑ P1 - Text and Voice chat with Other Customers/Friends
❑ P2 – Walk around experience in the virtual shopping world
❑ P3 – View Products in 3D
❑ P4 – Create Personalized Avatar Using their Photo
❑ P5 – Enter different sections of products using Portals
❑ P6 – Can be accessed through VR gear
❑ P7 – Add or Delete Items to Shopping Cart
❑ P8 – Check Out the Shopping Cart

Solution statement/ Proposed approach

Creating a connected Metaverse experience on the web for E-Commerce:

We have developed a virtual space for a E-Commerce from scratch using tools like Unity 3D and Mona.

Customers can join and experience a 3D world of shopping along with their friends:

We have added the feature to invite friends while shopping which will also safeguard their privacy as only the person, they want will have access to the space.

This system also allows voice and chat enabled conversations with other customers/friends on the platform:

We have added the feature to interact with each other inside the virtual space using text chat or voice options.

The user can also create his/her own avatar which will give them a customizable experience:

The Customer can create their own avatars which can be customized at any point of time.

Customers can also view the items in 3D format in the virtual space:

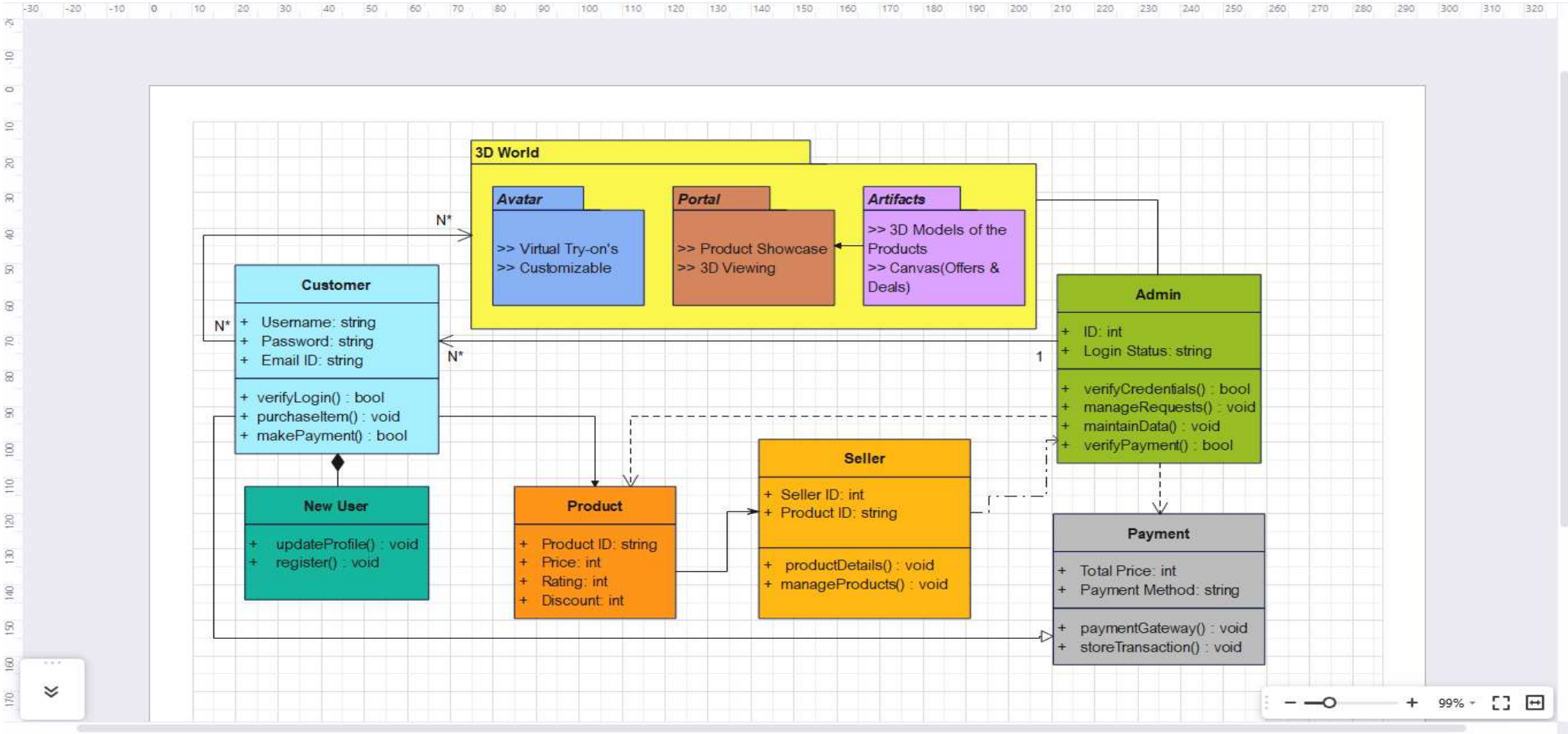
We have given a whole new experience to the customer in viewing their product i.e., the product can be viewed in 3D.

Customers can teleport through various sections of products(Fashion, Electronics, etc.) using portals which will take them to a whole new space of the selected section.

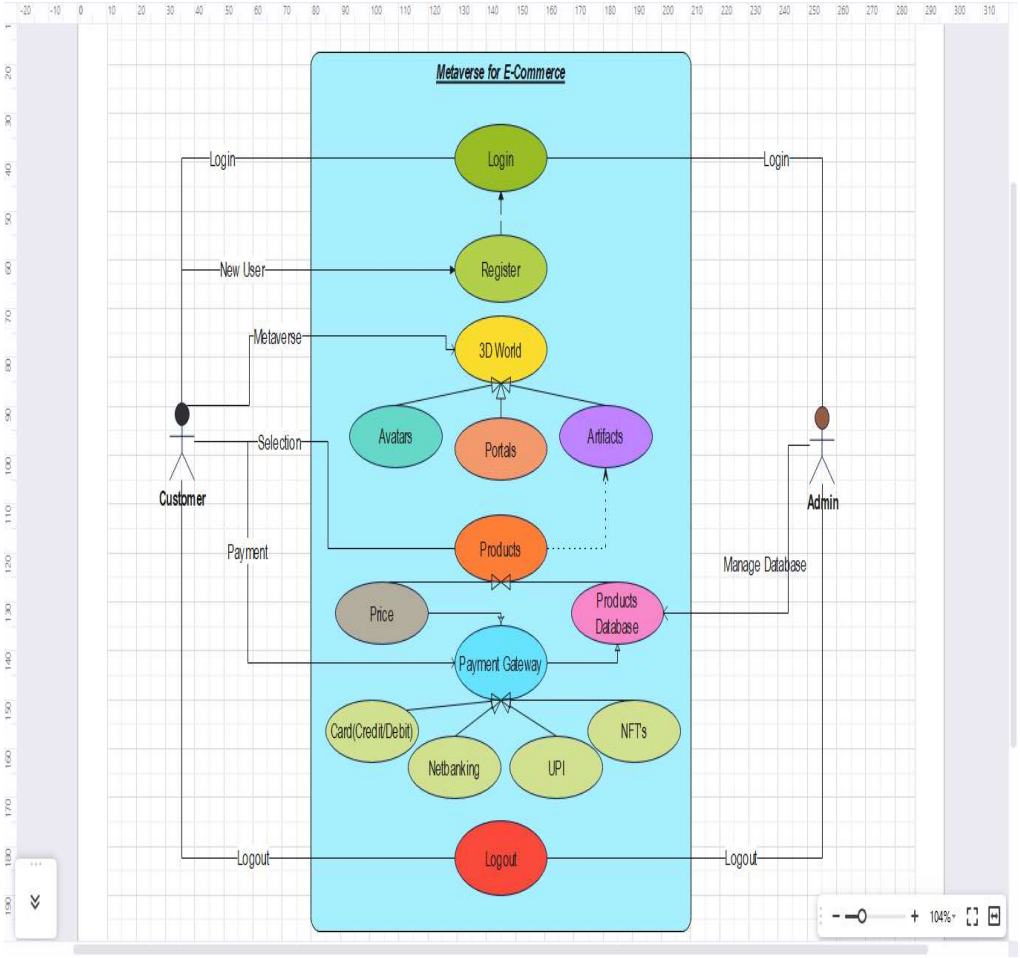
Customer can add, delete or edit products to their cart and check out which will lead them to an online merchant system to buys the products.

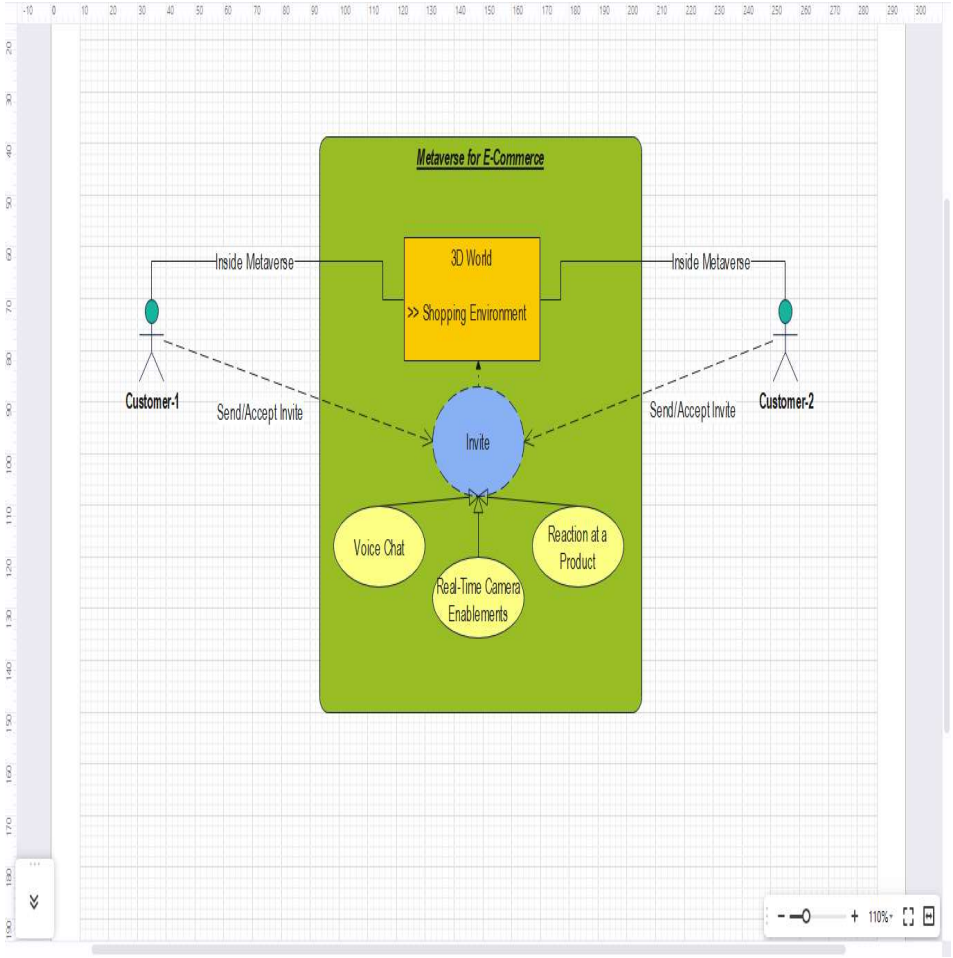
- **Working Demo -- https://youtu.be/X5GerfH11Wo**

Block Diagram



Software Design – Use Case Diagram



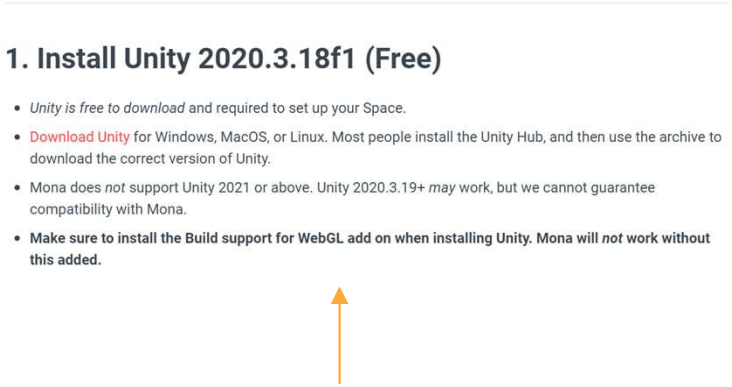


The Virtual Space!!

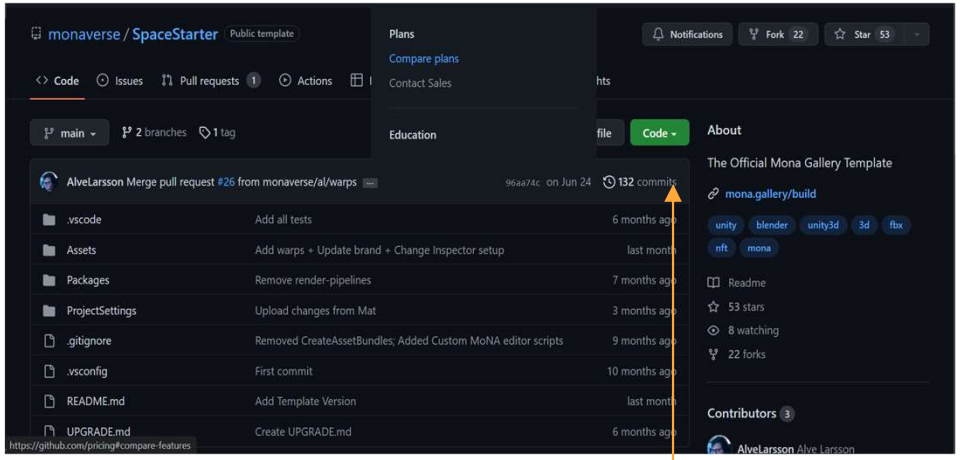
Working Demo -- https://youtu.be/X5GerfH11Wo

Defining the SDK's Used

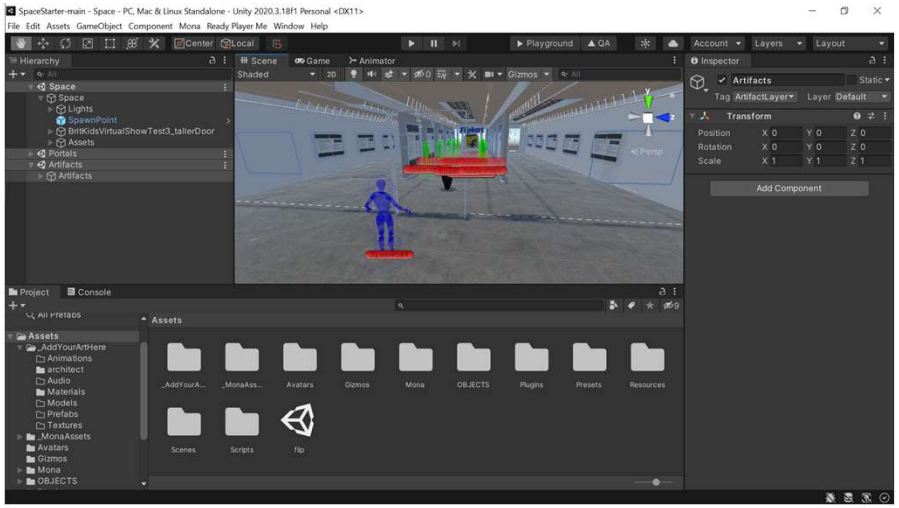
- We have used **Unity 2020.3.18f1** to develop the 3D space with **Mona** gallery template. We have used **Revit** to build 3D architect of the buildings and **Blender** for creating 3D objects.
- We have used **ReadyPlayerMe** for Avatar integration in the space.
- Languages Used: **JavaScript, C#, HTML, CSS**
- We have also used **Sketchfab** for some 3D models.

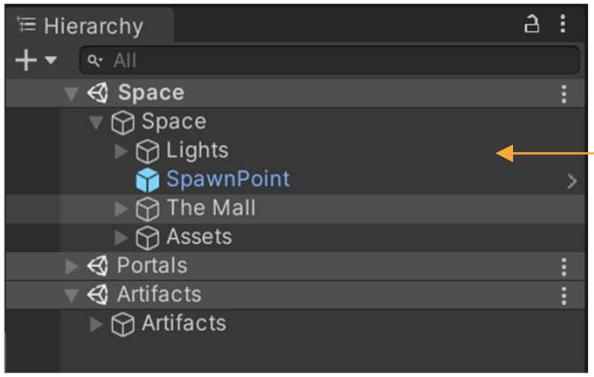


We have used 2020.3.18f1 version of Unity because it is most compatible with Mona

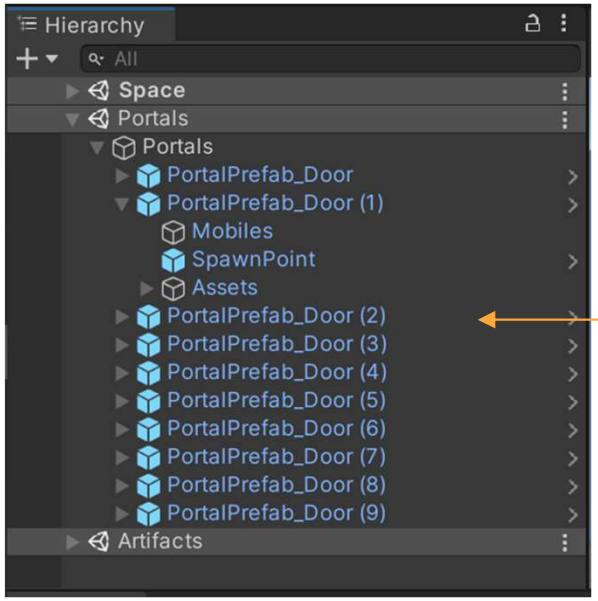


We downloaded the Mona Gallery Template which lets us use the hierarchy required to load our space on Mona.

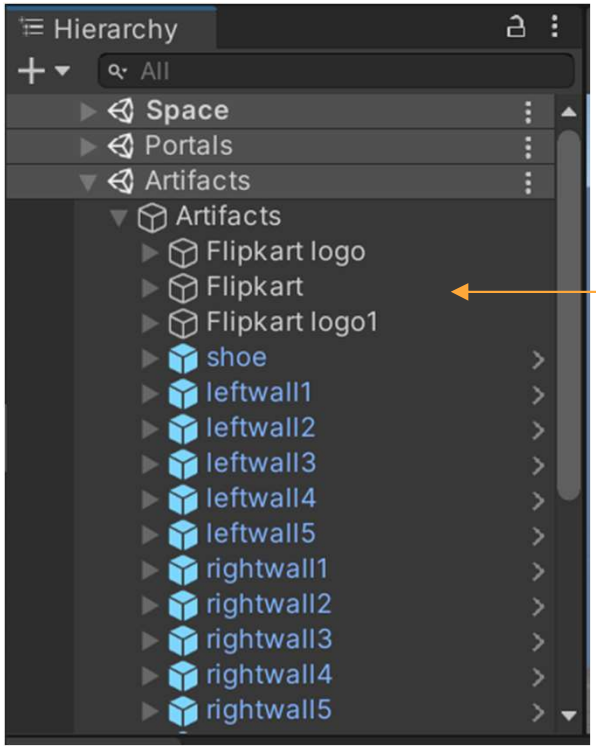




This is the hierarchy of the main space. SpawnPoint the point our customer will appear in the 3D space. The Mall is the root object where all other assets are added.

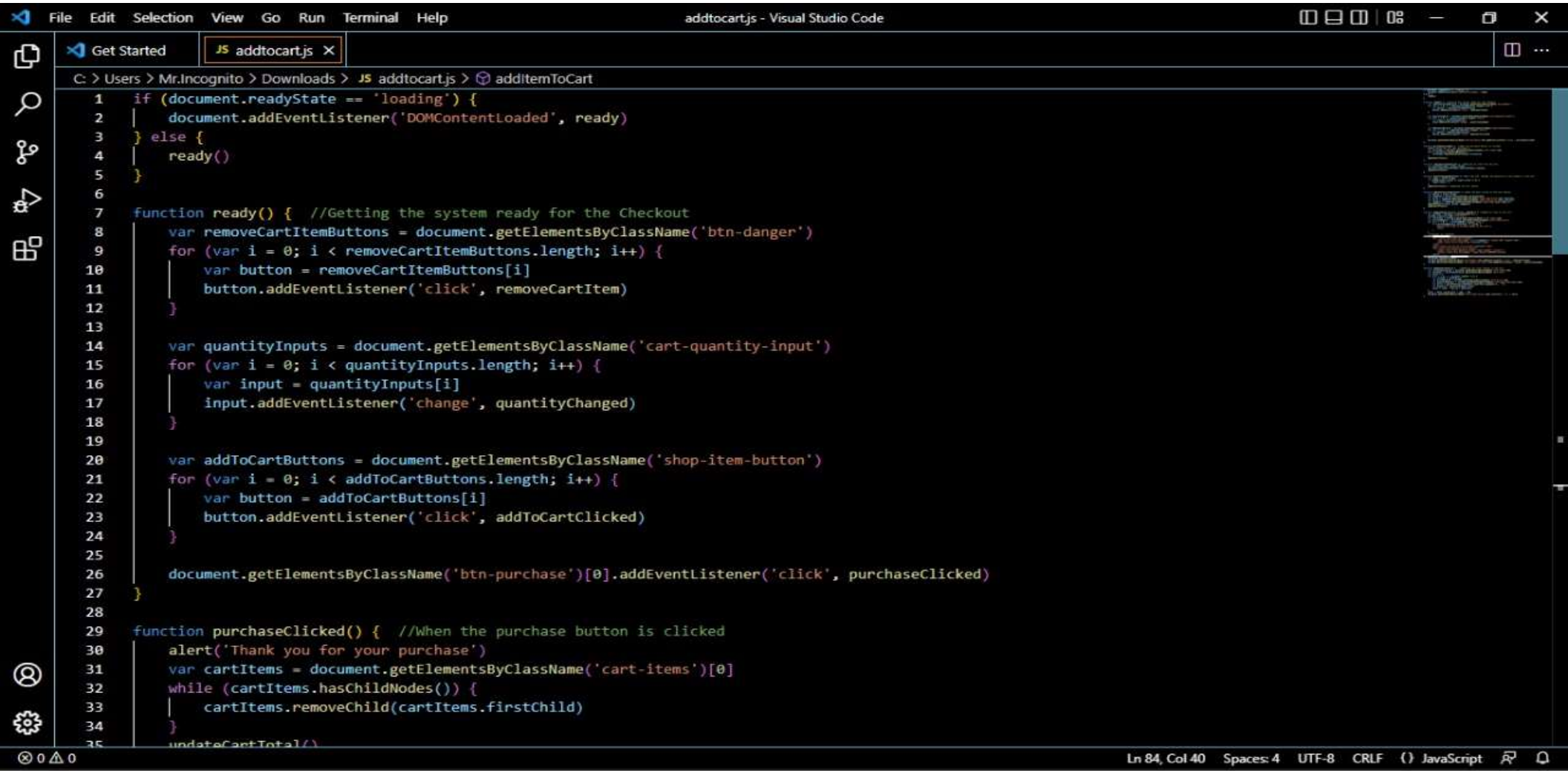


Portal Layer will have all the portals. Portals will lead us different section of products as shown in the photo(Mobiles). Each portal are linked to another space where we can view products in 3D. SpawnPoint in portal is the point where customer will appear after teleporting.



Artifacts layer will consist of all the objects, canvases to show deals, NFTs or pictures of the products, 3D models of the products will also be added in this layer.

Code for Add to Cart and Checkout Page



Limitations

- **Privacy Issues : Our model certainly has the solution to privacy of a customer while shopping as the customer can invite only the person, he/she wants to shop with.**
- **Accessing the Metaverse : Our model is not developed for Mobile application as of now.**
- **Adding 3D Models: Sellers on Flipkart will have difficulty adding 3D models of their products. But in our model the sellers will not need any prior knowledge of codes or software to add their items in 3D.**

Future Scope

- Our model is highly scalable as the architecture of the space can be as large as we want. The design of the space has only the limit of our imagination because it does not abide by the physical laws of the nature.

- Our canvases can also showcase NFTs, and our model is also integrated with cryptowallet. Both of this technologies are going to be the future of Web 2.0.

- As our model is immersive it can be accessed through VR gear. It can be easily adapted for Mobile application which in turn can use AR feature.

- Our Portals can be linked to any new space, it brings the adaptability for environment to change it after deployment and add any new feature or space to root space.

- Our model will also set new standards to the culture of E-Commerce which will be in great demand in the future and the bigger business leaders of the will have a lot to offer to the society using this technology. As we all know that post E-Commerce has seen a huge rise in demand from the customers all over the world, therefore, our model will surely act as a solution to the world of Metaverse.

- We can add or remove any portal(section) and link it to any new updated space. We have a graphically appealing design, and the avatar physics are customizable as per the wish of the user. Our model can set a revolution to the Augmented & Virtual Reality as the concept of metaverse will be highly accepted by the users of every age group in the near future as this technology gives the comfort of accessing the real-time world by sitting back at their homes.