RK UNIVERSITY

R X U
M E T A V E R S E

PARTH PARMAR (17SDSCE01034)

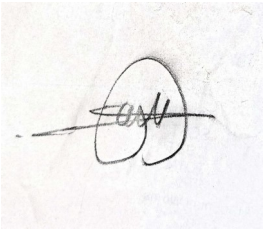
DECLARATION

I hereby certify that I am the sole author of this project work and that neither any part of this project work nor the whole of the project work has been submitted for a degree to any other University or Institution. I certify that, to the best of my knowledge, my project work does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my project document, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. I declare that this is a true copy of my project work, including any final revisions, as approved by my project review committee.

Parmar Parth H. (17SDSCE01034)

Date: 03/05/2021

Place: Rajkot



Signature: _____


CODIZIOUS
TECHNOLOGIES
(BEST IT TRAINING, WEBSITE AND MOBILE APPLICATION DEVELOPMENT COMPANY)
CERTIFICATE
OF EXPERIENCE
PROUDLY PRESENTED TO
Parth H Parmar
We're delighted to confirm your successful completion of a year-long Web Developer internship at Codizious Technologies, as part of your academic studies. During your time with us, you excelled in front-end and back-end technologies, led key web application projects, and earned an offer for a full-time position. Despite the challenges of the COVID-19 pandemic, you adeptly balanced remote work and academic commitments, demonstrating resilience and adaptability.
Mr. Alpesh Rathod
For, Codizious Technologies.
HR Manager
CODIZIOUS TECHNOLOGIES RAJKOT
Declaration
+91 81605 19719
info@codizious.com
609, Shivalay Complex, Mavdi Circle, Nr. Ashirwad Hospital, Mavdi Main Rd, 150ft. Ring Rd, Rajkot - 360004

ABSTRACT

The Metaverse is the post-reality universe, a perpetual and persistent multiuser environment merging physical reality with digital virtuality. It is based on the convergence of technologies that enable multisensory interactions with virtual environments, digital objects and people such as virtual reality (VR) and augmented reality (AR). Hence, the Metaverse is an interconnected web of social, networked immersive environments in persistent multiuser platforms, we created an virtual land (Realestate) platform where user can buy virtual land according to their need and those after being redirect as form of payment gateway (crypto wallet) is an oxidration to pay (ETH) in real time. It enables seamless embodied user communication in real-time and dynamic interactions with digital land. Its first iteration was a web of virtual worlds where lands were virtual. The contemporary iteration of the Metaverse features social, immersive VR platforms compatible with massive multiplayer online video games, open game worlds and AR collaborative spaces.

TABLE OF CONTENT

Short Forms

Acronym	Full Form	Acronym	Full Form
AGI	Artificial General Intelligence,	**MLRF**	Multimodal Local-Global Ranking Fusion
ANR	Articulated Neural Rendering	**MMORPGs**	Multiplayer Online Role-Playing Games
AP	Average Precision	**MONET**	Multi-Object Network
AR	Augmented Reality	**NMT**	Neural Machine Translation
BDA	Bidirectional Domain Adaptation	**NPC**	Non-Player Character
BERT	Bidirectional Encoder Representations from Transformers	**NPIs**	Negative Polarity Items
CABB	Crop Recognition Bounding Box Regression Loss	**OCR**	Optical Character Recognition
CGI	Computer-Generated Imagery	**OSN**	Online Social Network
CL	Continuous Learning	**PBL**	Problem-Based Learning
CNN	Convolutional Neural Network	**PHALCOR**	PHase ALigned CORrelation
CURL	Contrastive Unsupervised Representations for Reinforcement Learning	**PiCA**	Pixel Codec Avatars
DIAYN	DIversity All You Need	**PLMs**	Pre-trained Language Models
DOA	Direction Of Arrival	**PLR**	Prioritized Level Replay
ECL	Natural language in Cognitive Linguistics	**PQ**	Panoptic Quality
EFT	Efficient Feature Transformations	**QACNN**	Query-based Attention CNN
EMIL	Embodied Multi-modal Interaction in Language learning	**ReAVAE**	Region-adaptive Adversarial Variational Variational AutoEncoder
EQA	Embodied Question and Answer	**ReTiSAR**	Real-Time Spherical Array Renderer
ERM	Empirical Risk Minimization	**RL**	Reinforcement Learning
FED	Foveated Entropic Differencing	**RNN-T**	Recurrent Neural Network Transducer
FR	Full Reference	**RRR**	Remembering for Right Reasons
GAN	Generative Adversarial Network	**SDC**	Silent Data Corruption
GCN	Graph Convolution Network	**SDM**	Spatial Decomposition Method
GNN	Graph Neural Network	**SIR**	Spliced Image Retrieval
GPSA	Gated Positional Self-Attention	**SLU**	Spoken Language Understanding
HE	Homogeneous Encryption	**SQ**	Speech Quality
HIMN	Hierarchical Interactive Memory Network	**SS-OD**	Semi-Supervised Object Detection
HiP-MDPs	Hidden-Parameter Markov Decision Processes	**STOI**	Short-Term Objective Intelligibility
HMD	Head Mounted Display	**TERM**	Tilted Empirical Risk Minimization
HRTF	Head-Related Transfer Function	**ToM**	Theory of Mind
I2A	Imagination-Augmented Agents	**VAE**	Variational AutoEncoder
IBP	Indian Buffet Process	**ViTs**	Vision Transformers
KD	Knowledge Distillation	**VLN**	Visual Language Navigation
KG-A2C	Knowledge Graph A2C	**VLP**	Unified Vision Language Dictionary Training
LBM	Local Bipartite Matching	**VoIP**	Voice over IP
LCEs	Learning Controllable Embeddings	**VPMs**	Video Pre-trained Models
LCMV	Linearly Constrained Minimum Variance	**VQA**	Visual Question Answering
LH	Location History	**VR**	Virtual Reality
LSTM	Long Short-Term Memory		

1. Introduction

1.1 Purpose

The term ‘metaverse’ is a portmanteau that combines the worlds ‘meta’ and ‘universe.’ It is used primarily to refer to an anticipated future iteration of the internet that’s often hailed as Web 3.0. This evolution of the internet is expected to see the rise of online 3-D or virtually integrated environments that provide users access to virtual reality and augmented reality experiences.

The metaverse is a concept of a persistent, online, virtual universe that combines multiple different virtual spaces. You can think of it as a future iteration of the internet. The metaverse will allow users to work, meet, game, and socialize together and become part of Gen Z.

1.2 Requirement Gathering

The metaverse will be a collection of limitless virtual worlds where everything is connected and shared. This will make it very easy to move around and have conversations apart from this it will also make it possible for businesses and people to own land in the metaverse.

It's a way to represent an asset that can be exchanged for crypto or real money. Virtual land also comes with many interesting opportunities, users can buy or sell out their virtual land, or even turn it into a business to sell products and services if they choose to do so , also they can build hotels, sports buildings or any other infrastructure to buy or sell.

Millions of dollars are being spent today on the purchase of virtual land and stunning architecture that you can't wait to explore. It is regarded as a wise investment with the potential for future rewards by those who purchase it.

1.3 Product Scope

Our Mission is to Parcel empowers people with the tools they need to find their home in the metaverse. It opens up a wider pool of investors: The metaverse offers to all in various shapes, sizes, locations and price points. It can be purchased with a wide range of currencies. The affordability and accessibility mean almost anyone can invest.

In the metaverse, the aim of purchasing land is to develop it or lease it out. This prioritizes size and location, while utility falls to the wayside.

In the future, people may be hosting more real-world activities on the metaverse including trade shows, exhibitions, weddings, and other social gatherings. This may reduce the demand for brick-and-mortar properties used for these purposes.

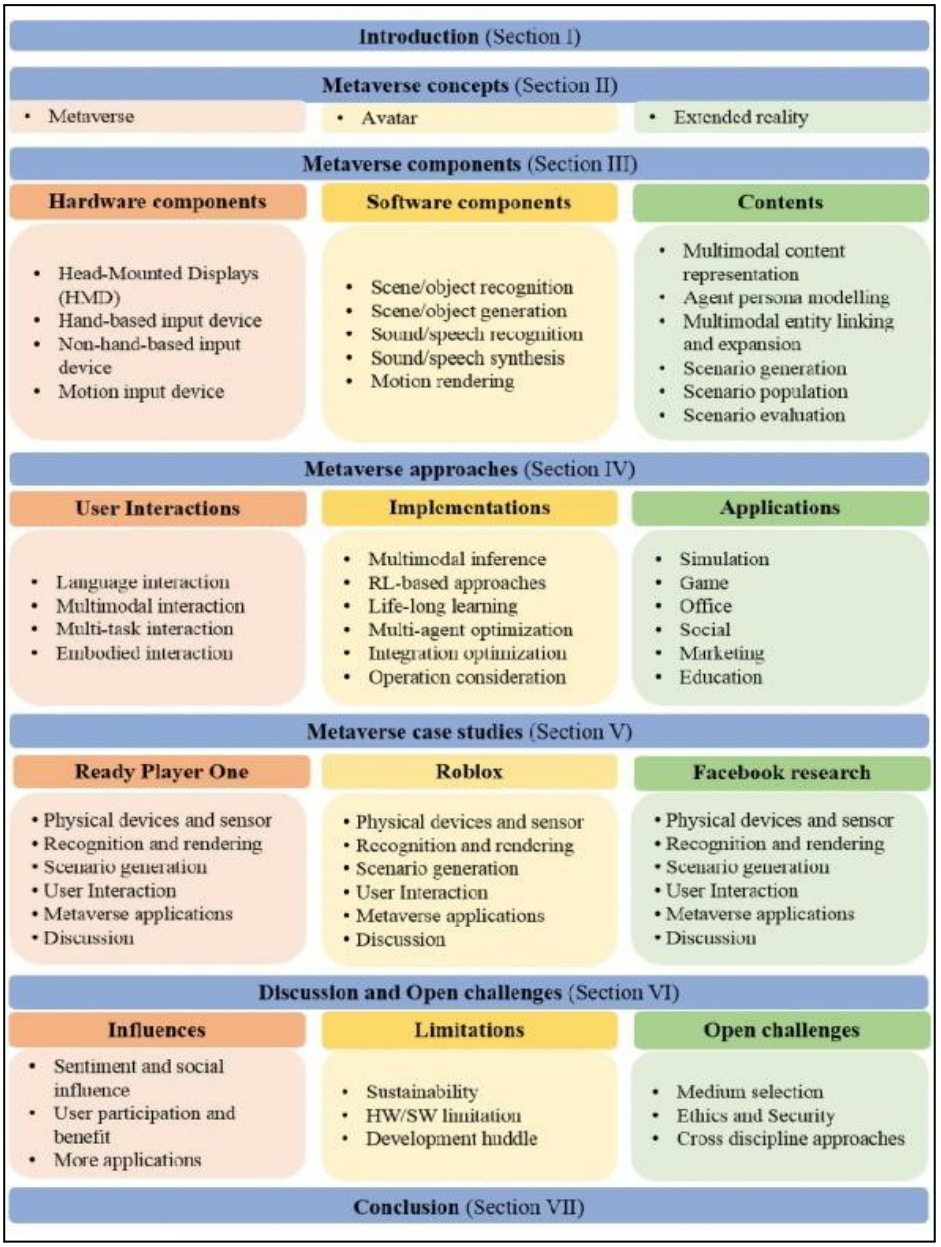
1.4 References

1. Guillermo Angeris, Hsien-Tang Kao, Rei Chiang, Charlie Noyes, and Tarun Chitra. 2019. An analysis of Uniswap markets. arXiv preprint arXiv:1911.03380 (2019).
2. Richard A Bartle. 2003. Designing Virtual Worlds: Bibliography. bearing a date of (2003), 1--36.
3. Chris Berg, Sinclair Davidson, and Jason Potts. 2019. Blockchain technology as economic infrastructure: Revisiting the electronic markets hypothesis. Frontiers in Blockchain, Vol. 2 (2019), 22.
4. Vitalik Buterin et al mbox. 2014. A next-generation smart contract and decentralized application platform. white paper, Vol. 3, 37 (2014).
5. Wei Cai, Zehua Wang, Jason B Ernst, Zhen Hong, Chen Feng, and Victor CM Leung. 2018. Decentralized applications: The blockchain-empowered software system. IEEE Access, Vol. 6 (2018), 53019--53033.

2. Overall Description

2.1 Product Perspective

- Why Moralland Metaverse? Our metaverse provides reagent virtual land which oformes and buyable, users vary to select particular land area and buy the particular land using wallet (as in ETH).



2.2 Product Functions

- Users can login using their wallet address or private key.
- Users function as a buyer and seller on a ligament/virtual land that norms the possibility of a virtual universe.
- Once all the coordinates are aligned the particular part of land of anes the particular address , node of an user.
- Once the claim button is clicked the page redirects to the payment gateway (as a wallet) funds the gas fee , toremental tax and once the payment is confirmed the particular land area selected/bought by users being vibrant.

2.3 User Classes and Characteristics

- In the metaverse, users traverse a virtual world that mimics aspects of the physical world using such technologies as virtual reality (VR), augmented reality (AR), AI, social media and digital currency. The internet is something that people "browse." But, to a degree, people can "live" in the metaverse.
- Users -> Buyers / Sellers , own parcels of virtual land where people can sell NFTs, socialize and play games. Metaverse real estate consists of programmable virtual reality spaces that provide people with places to attend meetings, sell NFTs, socialize, go to virtual concerts, and perform an extensive amount of virtual activities.

2.4 Operating Environment

➢ **Frontend :**

- **HTML :** HTML is an acronym which stands for Hyper Text Markup Language which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.
- **CSS :** Bootstrap is a free, open source front-end development framework for the creation of websites and web apps. Designed to enable responsive

development of mobile-first websites, Bootstrap provides a collection of syntax for template designs.

- **Web3 :** Web3 enhances the internet as we know it today with a few other added characteristics. web3 are Verifiable , Trustless , Self-governing , Permissionless , Distributed and robust , Stateful , Native built-in payments . In web3, developers don't usually build and deploy applications that run on a single server or that store their data in a single database.
- **MetaMask :** MetaMask is a software cryptocurrency wallet used to interact with the Ethereum blockchain. It allows users to access their Ethereum wallet through a browser extension or mobile app, which can then be used to interact with decentralized applications.

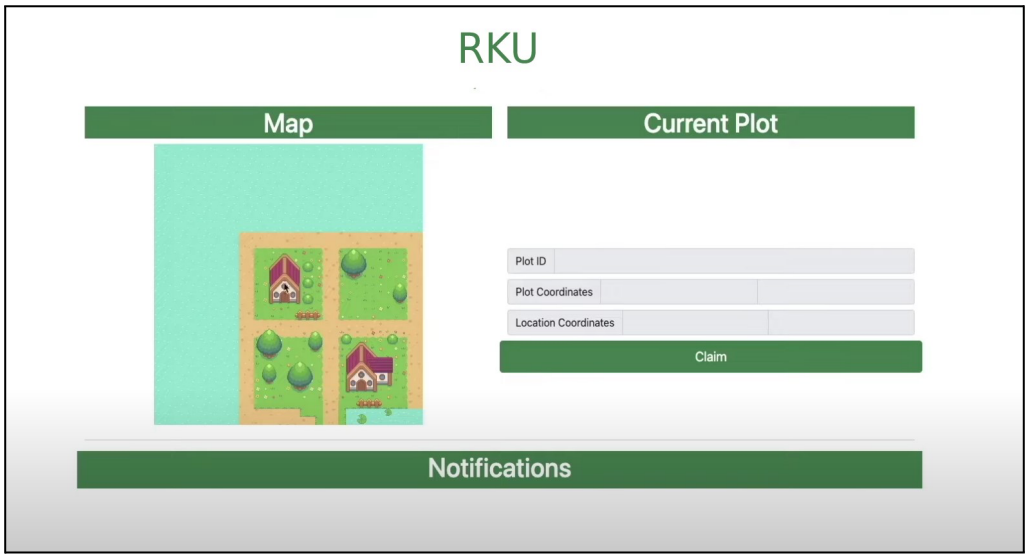
➢ **Backend :**

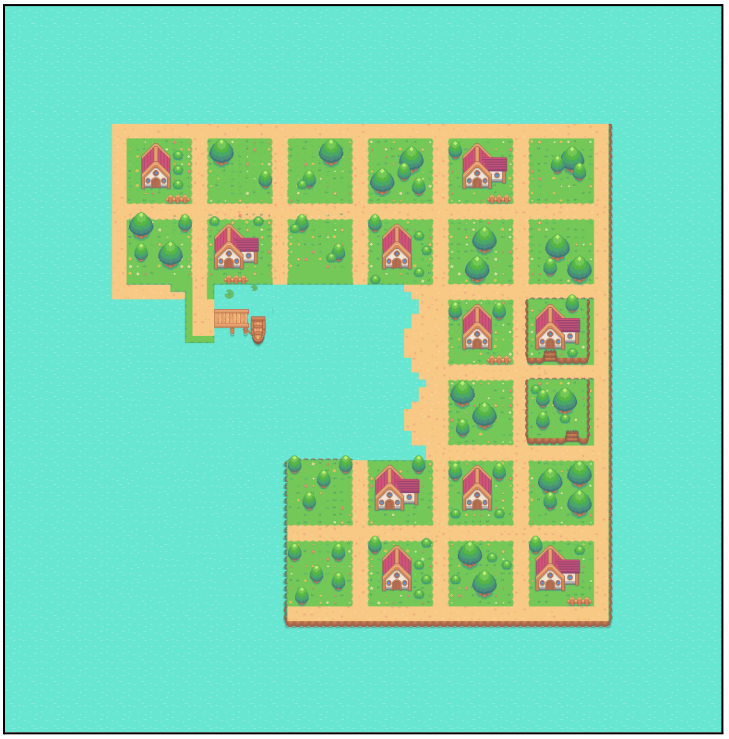
- **Three.js :** Three.js is a cross-browser JavaScript library/API used to create and display animated 3D computer graphics in a web browser. It runs in all browsers, and is built on top of WebGL (Web Graphics Library), another JavaScript API for rendering 3D graphics within any compatible web browser without the use of plug-ins.
- **Blockchain :** Blockchain will give metaverse businesses the chance to offer their customers cohesive services that'll converge their physical presence with 3D digital presences, changing how customers interact and other unique digital assets (NFTs). Digital art, virtual goods, or personal experiences can be turned into secure NFTs and stored on the metaverse blockchain as assets. To build a self-sustaining digital economy, metaverse users can exchange these NFTs for cryptocurrency to buy other metaverse entities or choose to cash out for fiat money at any moment.
- **Solidity :** Solidity is an object oriented programming language created specifically by the Ethereum Network team for constructing and designing smart contracts on Blockchain platforms. It's used to create smart contracts that implement business logic and generate a chain of transaction records

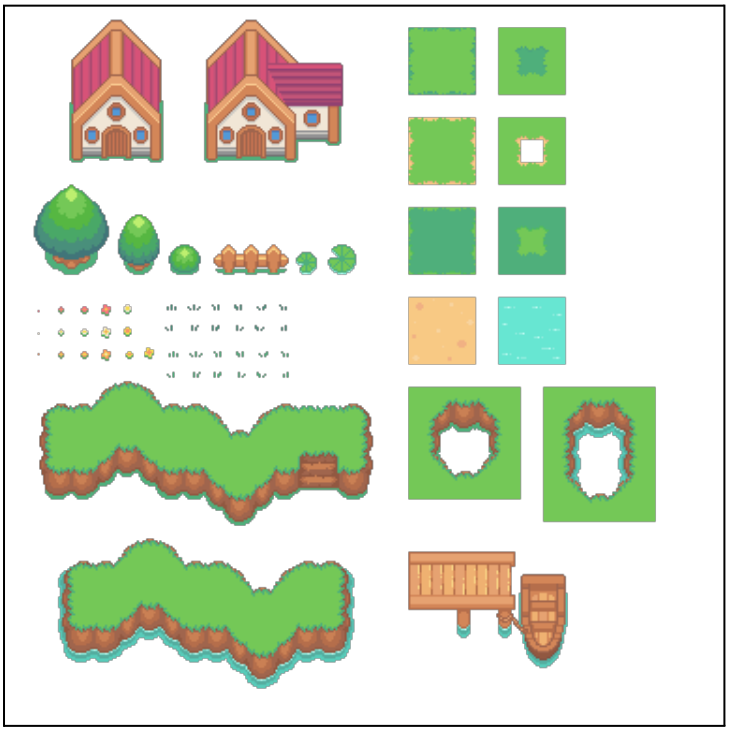
in the blockchain system.It acts as a tool for creating machine-level code and compiling it on the Ethereum Virtual Machine (EVM).

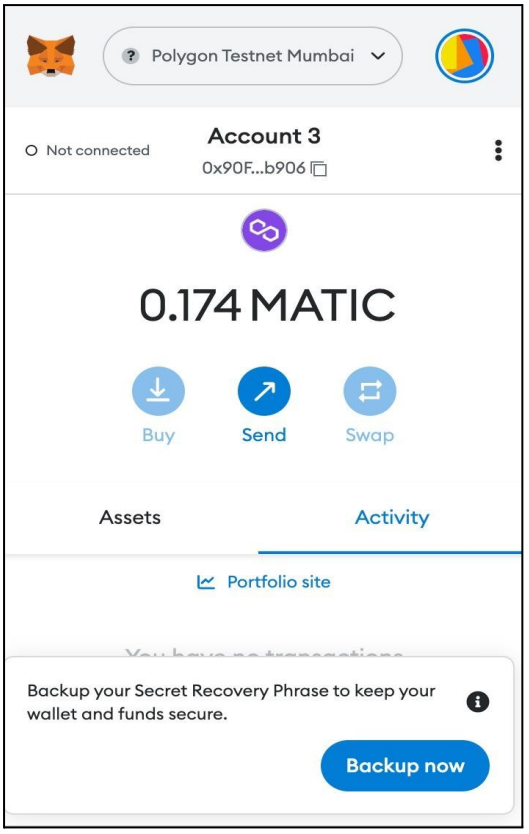
2.5 Design and Implementation Constraints

- Using **Moralis** is pretty straightforward. Moralis makes creating all sorts of dapps (decentralized applications), including metaverses, feel like a breeze. All it takes is a few minutes to complete the initial setup. So, after creating a Moralis account, we can log into the Moralis admin area and we create a Moralis server.
- After creating virtual land on Moralis we can download the pack and using Visual Studio Code we are merging that pack with our project.
- Frontend : HTML , Bootstrap
- Backend : JS we built the main logic or the functions of the entire project which means selecting the land and it'll take the coordinates of that selected land and also the particular location coordinates , the payment gateway for users as well as the ID of that server.








Polygon Testnet Mumbai
Not connected
Account 3
0x90F...b906
0.174 MATIC
Buy
Send
Swap
Assets
Activity
Portfolio site
Backup your Secret Recovery Phrase to keep your wallet and funds secure.
Backup now

2.6 Conclusion

Believe it or not, the virtual world is going to rule super soon unless there is something crazier that comes to dominate. The future is in the hands of VR. For introverts, this is a blessing; they have been praying. But, for some, it can be proved a disaster. As we still live in a world where some sellers are still unaware of online selling and still believe in real-life connections and shops, it can be complicated to shift to this change.

Adapting to this new change can be tricky, but it is necessary to grow in the market. Metaverse is made for all, either you are a business willing to explore, or you are a consumer willing to go all online, or you are an investor and searching for new things to invest in, or a creator, the list goes on and on. B2B, B2C, D2C, it has everything for everyone. One crucial thing which needs to be learned is a transaction in cryptocurrencies. Therefore, we all have to learn to adapt, invest, and explore Metaverse: The Virtual World.

References

1. Ian Ayres and John Braithwaite. 1995. Responsive regulation: Transcending the deregulation debate. Oxford University Press, USA.
2. Jeremy Bailenson. 2018. Experience on Demand: What Virtual Reality Is, how it Works, and what it Can Do. WW Norton & Company.
3. Albert Bandura and Richard H. Walters. 1977. Social learning theory. Prentice-hall Englewood Cliffs, NJ.
4. Jordan Belamire. 2016. My First Virtual Reality Groping. Athena Talks. Retrieved November 26, 2018 from https://medium.com/athena-talks/my-first-virtual-reality-sexual-assault-2330410b62ee#.8lcy2o2bh
5. Lindsay Blackwell, Tianying Chen, Sarita Schoenebeck, and Cliff Lampe. 2018. When Online Harassment is Perceived as Justified. In Twelfth International AAAI Conference on Web and Social Media.