Software Engineering Fundament

COMP 120 - Section 003

Team 1

(Metaverse)

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❖ ***Content***

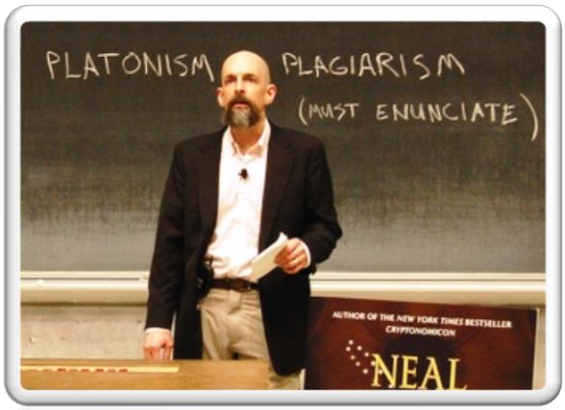
Introduction

An online virtual environment that includes augmented reality in the metaverse through the use of 3D holographic avatars, video, and other means of communication, and provides a hyper-real alternate world in which you must cohabit. The development of many tools and technology has altered our way of life. These technologies are evolving at a rapid pace. We can see that new technologies are being developed regularly. The advancement of technology has altered and improved our lives. Humans' way of existence will be altered by advanced technology that emerges shortly. It is an innovation and thus it is a topic dealt with great curiosity.

The Metaverse is an intriguing technology that has been described as the "newer version of the Internet." At first, the entire globe is migrating toward digitization. Many countries throughout the world have achieved complete digitalization. This present kind of internet technology, which gives us access to many elements, is about to change into a better and newer version. This type of internet is known as a metaverse. This topic has acquired interest after Facebook stated that it is the world's first metaverse corporation. The metaverse technology will not be restricted to gadgets but will allow us to experience our presence in the virtual world in real life. Simply put, the metaverse is a virtual replica of the real world in which we live. The metaverse firms will make operational the construction of the virtual world through the conjunction of various technical gadgets.

The History Of Metaverse

In the year 1992, the term "metaverse" was established. It was developed by Neal Stephenson in his science fiction novel Snow Crash. The humans in this story were shown as avatars. In a 3-D virtual environment, these avatars interacted with one other and computer programs. Stephenson primarily popularized the phrase to demonstrate that virtual reality is a newer version of the Internet.



The attribute of Metaverse

The Metaverse, often known as a virtual world, is more than just a concept; it will become a reality in the next years. The building of this digital universe will be achievable via the collection of various technical instruments. In this virtual environment, we can easily do tasks such as shopping, playing, office work, meetings, seminars, leisure, and so on. This will be made feasible by the efforts of firms such as Facebook, Microsoft, and others that have expressed an interest in working on this concept to make the presence of the virtual world a reality. The virtual world has been shown in films such as The Matrix and Ready Player One.

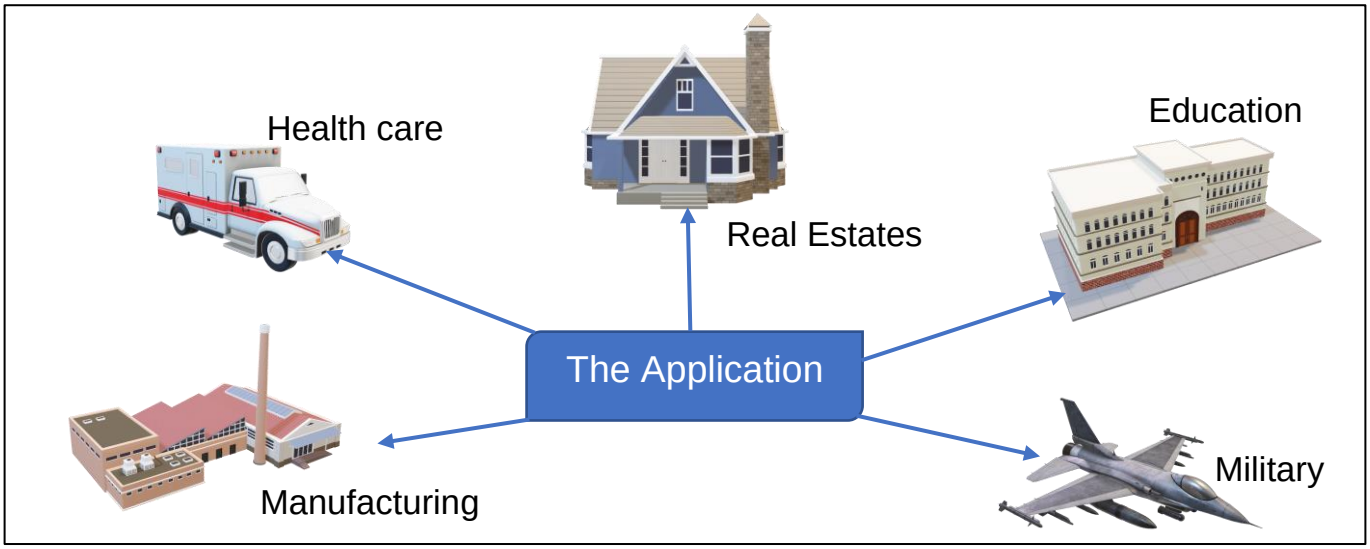
The Attribution:

1. The term "decentralized technology" refers to the fact that access to this technology and system will not be centralized by a single authority. As a result, all users will have access to the system.
2. Existence Of Digital Applications and Economy - The virtual reality world will be entirely digital. Only digital money such as cryptocurrencies will be accepted.
3. It will be a continually operating technology that will never cease working. This technology will always be available to consumers in real-time.
4. Simple Information Exchange- There is no need to log out after completing a single job. It is quickly completed as soon as we begin the following duty.

The benefits of Metaverse in learning and industries

After the globe was shaken by the aftershocks of the Covid-19 outbreak, the notion of conducting internet work from home became popular. Employees will be able to collaborate in a virtual environment with adequate interaction thanks to the usage of the metaverse. Similarly, the metaverse will be advantageous in the online learning system. Students will be able to attend lessons from the comfort of their own homes and interact with their classmates and professors in a virtual 3-D world.

The Applications Of Metaverse



a) ***The health care***

Surgical assistive tools are pieces of technology, such as the Microsoft Hololens, that surgeons use to aid and speed up surgical procedures. AR headsets are utilized to see vital real-time patient data like heart rate, body temperature, blood pressure, and breathing rate, in addition to pre-operative images from CT, MRI, and 3D scans.

The metaverse examples also suggest the usage of augmented reality improves vein detection. As a result, the usage of metaverse technologies can aid in the challenge of detecting a vein, particularly in highly pigmented skin or blood veins that are small in size. Visual-based technologies, like CT scans and X-rays, are potential prospects for the metaverse transition of healthcare. Consider a virtual environment in which medical practitioners and healthcare professionals may examine the insides of patients' bodies to determine the source of the problem.

b) ***The manufacturing***

VR applications, as one of the leading metaverse technologies, may assist instruct employees on safety procedures while also encouraging involvement in risk scenario simulations. As a result, metaverse applications can make a significant contribution to lowering the risk of accidents. In the long run, the most popular metaverse applications in manufacturing might aid in the production of superior goods.

A VR headset, for example, may assist producers in thoroughly inspecting all aspects of a product. Furthermore, metaverse applications aid in landscape design for industrial plants and

improved equipment location. Ford is a household name that is utilizing virtual reality technology to get access to its locked-down vehicles via a metaverse.

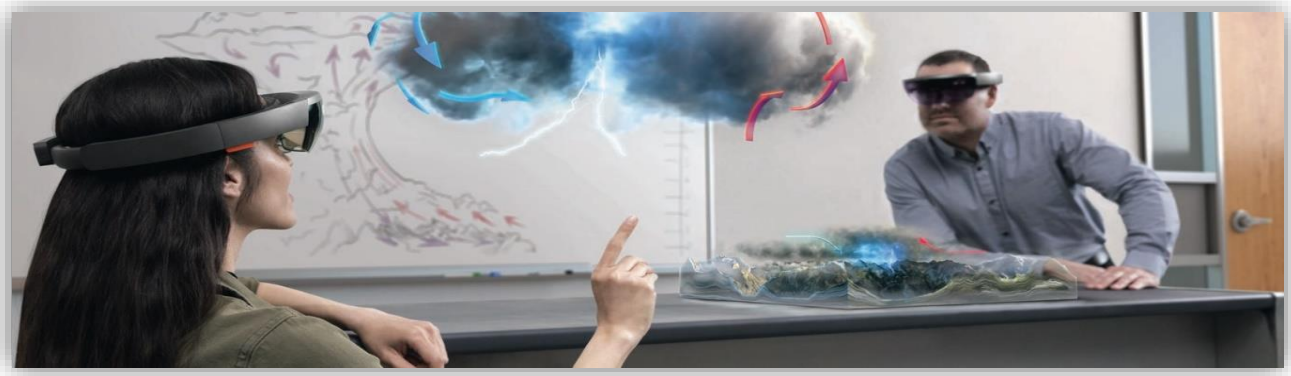
c) ***The military***

Military applications of AR and VR have also witnessed significant advancements. Tactical Augmented Reality is a gadget that resembles night-vision goggles but has many more capabilities. It may show a soldier's exact location as well as the positions of allied and opposing troops. The system, which is affixed to the helmet in the same way that the goggles are, may be utilized at any time of day or night. As a consequence, Tactical Augmented Reality efficiently replaces the traditional portable GPS device and glasses.

The Synthetic Training Environment (STE) is an initiative of the United States Army that aims to transform the Army's whole training paradigm. By increasing the efficiency and realism of live training, creating terrain familiarity, providing mission repetition, and simulating battle, STE is especially important for boosting Soldier lethality and survival. STE will deliver accessible, interoperable training that represents real-world terrain in all of its complexity by merging live, virtual, constructive, and game training settings. Its powerful three-dimensional mapping program is also operationally useful.

d) ***The Education***

With the advent of the metaverse school and virtual learning environment, individuals from the most remote corners of the planet will be able to obtain a quality education in settings that are perfectly suited for the absorption of new information and experience. Microsoft, for example, has developed Mesh, a mixed reality platform in which students, instructors, and staff may engage using 3D avatars. They will be able to participate in an immersive classroom or view avatars in a standard video conference using Microsoft HoloLens. As a result, evident that there are thousands of good answers to the topic of how to use metaverse in education.



e) ***The real estates***

Allowing clients to explore the home in real-time might easily enhance their confidence. Before making a purchase, clients may be confident of the numerous requirements, and real estate agents can save a lot of time and money. Furthermore, agents can utilize metaverse instances to their advantage and create unique tours to the preferences of their clientele.
The metaverse's potential also opens up new avenues for incorporating other multimedia aspects into virtual reality excursions. VR real estate tours, for example, can include ambient music, lighting, and sound effects in addition to the narrative. All of these characteristics combined in the most popular real estate metaverse apps may provide a near-real-time experience of the properties.

The technical sides of Metaverse

Elements	Descriptions
NFT technologies	When transitioning from one metaverse to another, NFTs assist your avatars in retaining their look (face, body, clothes), contacts, history, experience, and content. From Fortnite to Call of Duty, for example.
VR/AR	VR/AR will generate a 3D model and beam it to the users' VR/AR glasses. These devices already exist, such as the VR BOX, which uses two cameras and software to scan the space of the natural world and create a VR model, a #D map of surfaces and objects.
Mixed or Extended Reality	More than 60% of respondents believe XR will become widespread over the next five years as a key component of the metaverse ecosystem. All of these technologies are promising and will ultimately take Metaverse to new heights. It is inescapable that we adopt them in our professional environments and daily lives, whether they combine their qualities or only shine in one.
Distributed computing and storage	Huge computational power is required to develop metaverses with massive and vivid objects and contents. The simplest method is to distribute calculations over numerous nodes, as in blockchain systems.
Artificial intelligence (AI)	AI is required to create intelligent assistants for live contact with people, faster software development, and more secure security systems, as well as to improve analytic approaches (Big Data, research, marketing, etc.) and biological virtual worlds.
5G mobile data	Only the fifth-generation network, 5G, will be capable of providing the required data transmission speed, with download and upload speeds an order of magnitude faster than 4G - 10 GB/s against 100 MB/s. Furthermore, 5G technology can manage millions of concurrent data streams with a short duration of action.

Conclusion

The success of Facebook in the metaverse is vital to its future. The continuous privacy battles have exposed Facebook's risk of depending on Apple's and Google's app stores and smartphone operating systems.

The metaverse is no longer a dream; it is already a reality, and our actual world will become increasingly virtual in the coming days as a result of this technology. Virtual reality will evolve over time and elevate our experiences to new levels. Many individuals will be able to find work as a result of this technology, and millions will be able to experience a new technical marvel. Every technology has its own set of drawbacks and benefits, and when Metaverse becomes a reality, you'll be able to see them for yourself.

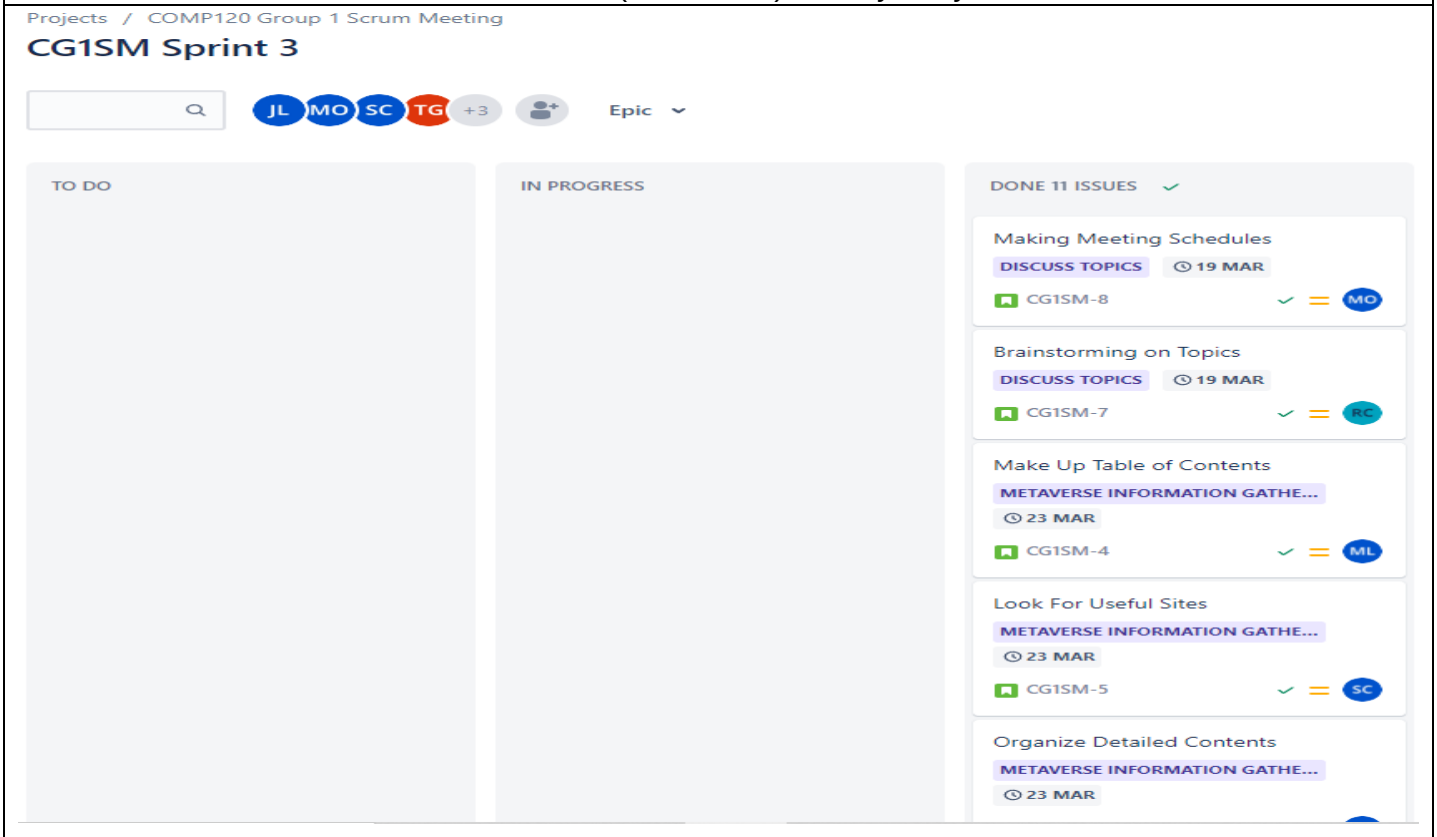
Jira & Scrum meeting

Scrum Meeting Minutes		
Task	Main Assignee	Time Spent
Making Meeting Schedule	Manvibolreach Ouk	40m
Brainstorming on Topics	Ryan Cappelli	1h
Make Up Table of Contents	Mar Jerico Lagmay	40m
Look for Useful Sites	Salma Chaaban	1h
Organize Detailed Contents	Jungyu Lee	30m
Write a Word Document	Manvibolreach Ouk	1h 20m
Create PowerPoint	Tingting Guo	1h 10m
Review the Word and PowerPoint	Munira Negash Hussien	40m
Update Jira	Jungyu Lee	1h
Summarize Information for Presentation	Salma Chaaban	20m
Rehearse the Oral Presentation	Tingting Guo	20m

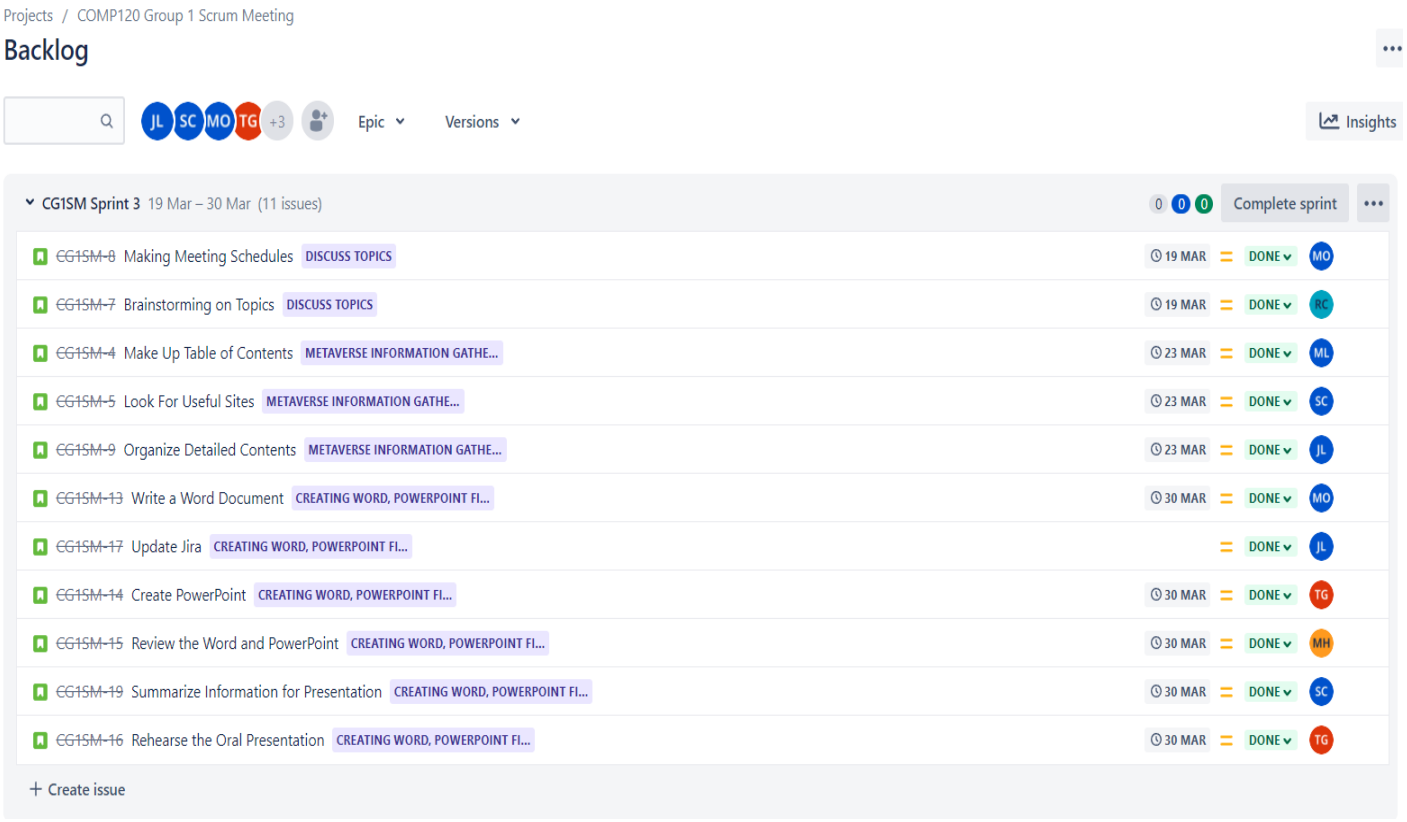
Lesson Learned
We learned about … 1. What is Metaverse 2. How to use Jira software & Scrum 3. How to work as a team 4. How to write a Word & PowerPoint document 5. How to deliver a presentation

User Stories	
Making Meeting Schedule	As a team, we make schedules to meet in the future so that we can create contents.
Brainstorming on Topics	As a team, we talk about group assignment topics so that we can make presentation materials.
Make Up Table of Contents	As a team, we make the table of contents so that we can organize contents.
Look for Useful Sites	As a team, we find websites regarding Metaverse to gather information and cite sources.
Organize Detailed Contents	As a team, we organized detailed content based on the table of contents so that we can document it easily.
Write a Word Document	As a team, we write a word document on Metaverse so that we can create a PowerPoint file based on it and submit the assignment.
Create PowerPoint	As a team, we create PowerPoint so that we can submit the assignment and present in class.
Review the Word and PowerPoint	As a team, we review the Word and PowerPoint to check whether there are to add or edit.
Update Jira	As a team, we update Jira every time so that we can keep track of other people's work and submit the assignment.
Summarize Information for Presentation	As a team, we summarize the information used so that we can deliver the presentation well.
Rehearse the Oral Presentation	As a team, we rehearse the oral presentation so that we can make a successful presentation.

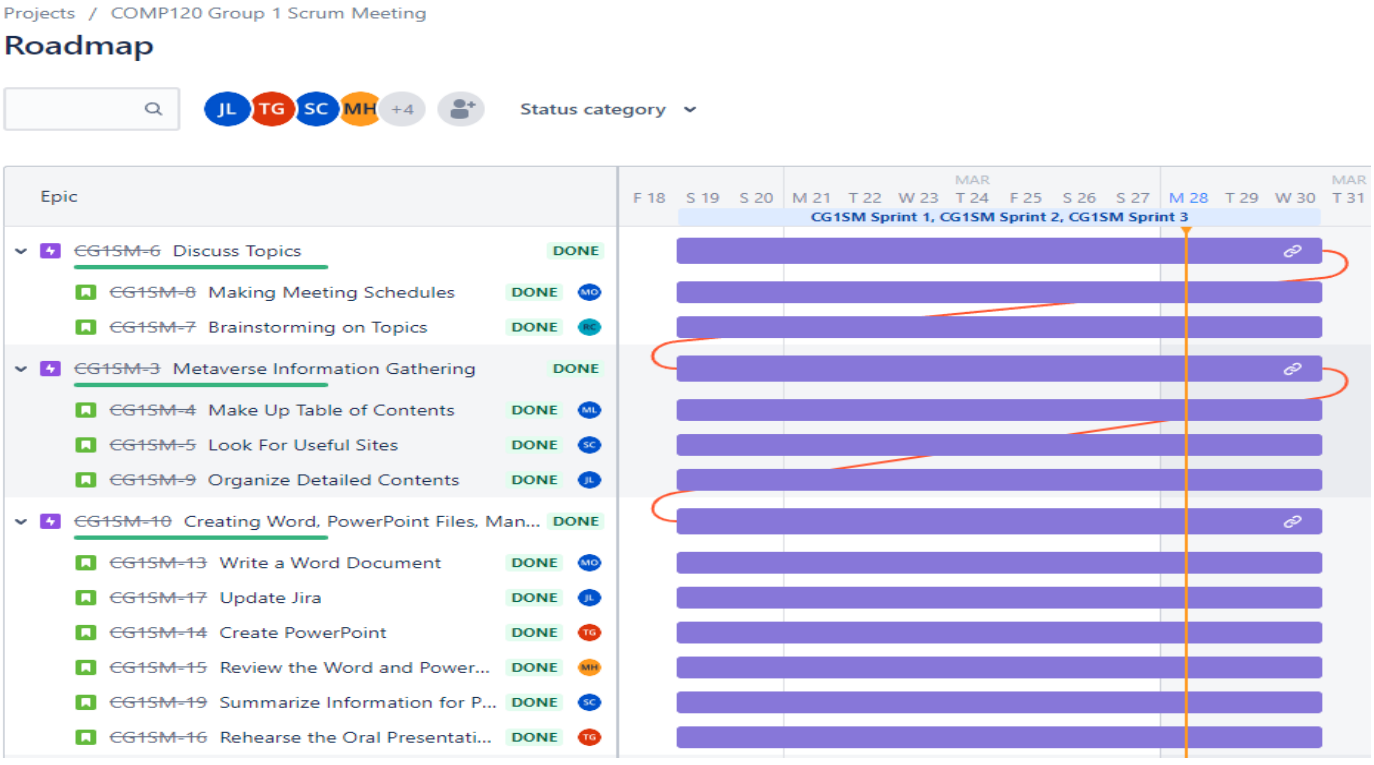
Scrum Board Screenshot (March 29th) – Every Story Marked **Done**



Backlog (March 29th) – Every Story Marked **Done**



Roadmap (March 29th) - Every Epic & Story Marked **Done**



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