REFLECTIVE ESSAY

Abhinab Prajapati

2214618

In my course, Fundamentals of Computer Science (FCS), I learned a lot of important fundamentals. Firstly, the course introduced the importance of effective tools for learning and organization. Understanding how to use BREO, an online learning platform, efficiently was crucial in managing coursework, accessing resources, and engaging in collaborative learning. Additionally, gaining knowledge about Bloom's Taxonomy helped in structuring study approaches to achieve higher-order thinking skills. The practical application of organizing tasks and managing projects was another essential part of the learning process. The exploration of Gantt charts and their role in project management offered a practical understanding of scheduling, task allocation, and project visualization, which are fundamental skills in the field of computer science and software engineering. In week 6 we were taught about Belbin roles which helped us in group formation, it taught us to form a group based on the traits of a person rather than their comfort zone, which we further implied in class activity where our instructor gave us a task and asked us to form a group based on Belbin roles. After that, we were introduced to De Bono's six thinking hats which show different perspectives on decision making. It helps participants to be more mindfully involved and focused during discussion. It can be applied in many ways, both in groups and as individuals. PowerPoint presentation skill is one of the major skills to have, it is the most common and preferred way to deliver complex information to a large number of people. This course delved deep into its importance and taught me how to deliver a good presentation. Being a computer science student it is a must for me to know about computer legislation and ethics, this course covers various cyber acts, that aware me to perform computer-related crimes. This law covers a wide range of cyber-related crimes, from making threats over social media to data breaches. Finally, in week 10 this course motivated me to seek out opportunities to enhance my skills and experience.

The course, Fundamentals of Computer Science (FCS), Seminar part has shown me a clear path to achieve the ultimate goal of my life. The personality tests helped me to know my strengths and weaknesses which will help me to avoid the mistakes I can possibly make before having the reference of it. Time management will help me to prioritize tasks, focus on important assignments, and complete them more effectively. This leads to higher productivity as I can accomplish more in less time. Belbin roles will help me understand the different roles, employees can appreciate the diverse strengths of their colleagues. By recognizing and appreciating the diverse roles each member plays, teams can achieve a better balance of skills and capabilities. As I will be working in the IT field, knowing about various cyber acts will prevent me from committing any illegal activities that may lead to serious problems in my career. This understanding promotes more effective communication and collaboration among team members, ensuring tasks are allocated based on each individual's strengths. Conflict resolution becomes smoother as team members comprehend why others approach tasks differently. This awareness not only aids in resolving conflicts but also contributes to a positive work environment where everyone feels valued for their unique contributions. Ultimately, leveraging Belbin roles leads to increased productivity, improved teamwork, and personal development opportunities for employees to grow within their roles. Going further De Bono's Six Thinking Hats will serve as a guiding framework in my professional journey. They will revolutionize how I approach tasks, offering a structured method to tackle complex problems. The White Hat will ensure I base decisions on factual information, fostering a grounded approach. Expressing emotions through the Red Hat will encourage a more open and empathetic team environment. When evaluating risks, the Black Hat will help me identify potential pitfalls, prompting proactive solutions. The Yellow Hat's optimistic viewpoint will highlight opportunities and positive outcomes, driving innovation. The Green Hat will fuel creativity, enabling me to explore unconventional solutions. Lastly, Blue Hat's role in organizing discussions will ensure everyone's input is heard, enhancing our team's decision-making process. These hats will not only

sharpen my problem-solving abilities but also foster a more collaborative and inclusive work environment, contributing to our team's success. Developing strong presentation skills is a pivotal asset that I'm committed to honing my future as an employee. These skills aren't just about standing in front of a crowd and delivering information; they embody effective communication, confidence, and the ability to convey ideas compellingly. As I envision my future, I see how polished presentation abilities will be instrumental in various aspects of my career. Whether it's pitching ideas to colleagues, sharing project updates with supervisors, or engaging with clients during meetings, these skills will serve as my gateway to success. By mastering the art of presentations, I'll not only be able to articulate my thoughts clearly but also capture and maintain the audience's attention, ensuring that my ideas are understood and valued. Furthermore, these skills will bolster my credibility and professionalism, elevating my profile within the organization and potentially opening doors to new opportunities. As I invest time and effort in refining my presentation skills, I anticipate a future where I can confidently articulate my ideas, influence decisions, and contribute meaningfully to the growth and success of both my career and the teams I work with.

In the hardware part, I started by understanding number systems, like binary (0s and 1s), hexadecimal, and decimal systems. These are the different computer-understandable languages. Learning this helped me understand how computers store and work with information. It's like learning the ABCs before reading and writing. Furthermore, the exploration of logic gates was an eye-opening experience. Understanding how the basic building blocks of digital circuits function to process information and perform logical operations was fascinating. Learning the complexities of AND, OR, NOT gates, and their applications in designing complex digital circuits broadened my understanding of how computers process data. Learning about CPU architecture, its components, and how it carries out instructions was an enlightening experience. Along with this, the exploration of memory systems shed light on the different types of memory, their functions, and how data is stored and accessed, forming the backbone of computational tasks. We were also been taught about the PIC kits, which we experimented with using the simulation tool Proteus. Firstly, I set up MPLAB and Proteus on my computer. I made the IDE work for my PIC16F684 microcontroller, which showed me how hardware simulation and code execution work. With the assembly code file given to me, putting it into MPLAB was easy. Making the code created the important HEX file. Seeing the code change into instructions that the machine could understand helped me understand how software changes into what the microcontroller does. Connecting the circuit in Proteus Simulator and using the HEX file showed how the microcontroller would act, making my digital creation work virtually. Doing this over and over, programming, simulating, watching, and fixing things helped me get better at the technical side and taught me how important it is to be careful when working with microcontrollers. These experiences weren't just about learning to program a microcontroller. They helped me understand how software and hardware work together, something that keeps me excited about embedded systems and digital electronics.

The course in Fundamentals of Computer Science (FCS) has been an eye-opener. I learned a lot about using online tools like BREO, organizing study methods with Bloom's Taxonomy, and managing projects with Gantt charts. Understanding how groups work through Belbin roles and decision-making with De Bono’s hats was interesting. I also got a handle on making good PowerPoint presentations. Learning about computer laws and ethics was crucial for my career in IT. In the hardware part, I started with basic computer languages like binary and hexadecimal. I learned how computers store info and work with it. Exploring

logic gates, CPU parts, and memory systems was fascinating. Working with PIC kits, MPLAB, and Proteus simulation software was a hands-on way for me to learn about microcontrollers. Setting up the IDE, writing code, and seeing it translate into machine instructions was eye-opening. Experimenting in the simulator with the circuit and HEX file showed how the microcontroller behaves. Through repetition, I improved my technical skills and learned the importance of caution in working with microcontrollers. These experiences went beyond just programming; they taught me how software and hardware collaborate, fueling my enthusiasm for embedded systems and digital electronics.

Action Plan for Personal and Professional Development

S.N	Goal	Action	Target date
1	Full stack developer	Take online courses like Coursera, Free Code Camp	Gain an online degree within a year.
2	Engage in Real-World Problem Solving	Seek out projects or internships that allow me to apply my skills and knowledge to real-world challenges.	Secure an internship or project-based opportunity within a year.
3	Expand Professional Network and Skills	Attend industry-related conferences and workshops.	Establish connections with at least 20 professionals and acquire a new skill within the next year.
4	Develop a Digital Presence and Personal Brand	Create or enhance your professional online presence through platforms like LinkedIn.	Establish a professional online presence within the next six months, and engage in consistent networking and content sharing over the next year.
5	Improve Time Management and Productivity	Develop a daily and weekly schedule that allocates specific time for studying, coursework, and personal development activities.	Create a structured schedule within the next month, and consistently follow it over the next six months.