Assessment Submission Form

Student Number (If this is group work, please include the student numbers of all group participants)	GH1023340
Assessment Title	LaTeX Report
Module Code	B201
Module Title	Computer Science Lab
Module Tutor	Prof. Dr. Mohammad Mahdavi
Date Submitted	29.06.2023

Declaration of Authorship

I declare that all material in this assessment is my own work except where there is clear acknowledgment and appropriate reference to the work of others.

I fully understand that the unacknowledged inclusion of another person's writings or ideas or works in this work may be considered plagiarism and that, should a formal investigation process confirms the allegation, I would be subject to the penalties associated with plagiarism, as per GISMA Business School, University of Applied Sciences' regulations for academic misconduct.

Signed.....Akerke Nurmagambetova Date .....29.06.2023.....

Computer Science Lab

Akerke Nurmagambetova

June 29, 2023

Contents

Chapter 1

Introduction to Computer Science

Lab

During this session, we dived into computer science abilities and obtained a thorough comprehension of the topic. Computer science is the study of computers, automation, and information, and it includes both theoretical topics such as algorithms, computation theory, information theory, and automation, as well as practical parts such as hardware and software design and implementation.

We began by reviewing the fundamental principles and disciplines of computer science, emphasizing its many applicability in a variety of businesses. Understanding computer science's fundamental abilities gives a solid foundation for pursuing employment and future study in the subject.

In addition to investigating theoretical parts of computer science, we concentrated on practical skills. We reviewed the resumes of other developers, identifying typical mistakes that should be avoided while building a profes-

sional CV. This activity provided us with insights into efficient resume writing approaches, emphasizing the need for clear and succinct presentations, relevant skills and experiences, and highlighting successes.

We also learned how to make a CV and an online portfolio. We spoke about the main components of a CV, such as biographical information, education, professional experience, abilities, and achievements. We also discussed the advantages of keeping an online portfolio, which serves as a platform for showcasing projects, abilities, and successes to future employers or clients.

In conclusion, this session offered an overview of fundamental computer science abilities, including both theoretical and practical components. We gained a deeper understanding of the field and its applications. Furthermore, we concentrated on practical skills by reviewing resumes, detecting frequent errors, and learning how to design a CV and an online portfolio.

Chapter 2

Touch Typing

We worked on touch typing during this session, a method that allows us to type without depending on sight to identify the keys on the keyboard. Touch typing, also known as blind typing or touch keyboarding, relies on muscle memory to memorize key locations, allowing us to write more correctly and efficiently.

We began by reviewing the advantages of touch typing, which include lower mistake rates and faster typing. Touch typists can type without continually glancing at the keyboard because they depend on muscle memory, which leads to increased productivity and a more pleasant typing experience.

Finally, this lesson focused on touch typing, its benefits, and its use in real-world circumstances. We actively tried to improve our typing ability and embrace touch typing as an efficient and effective typing method by engaging in typing exercises and passing the typing speed exam. Following the lecture, I began to practice and execute the typing exercise, as seen in the pictures below.

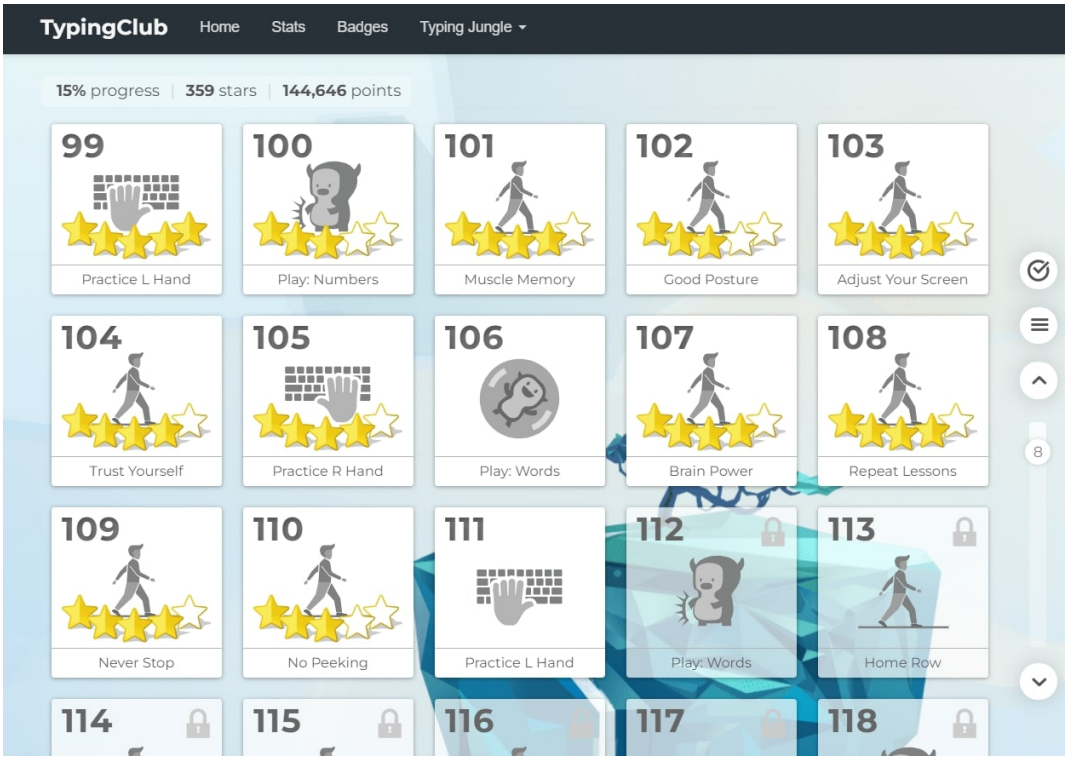

Figure 2.1: The completed levels in TypingClub

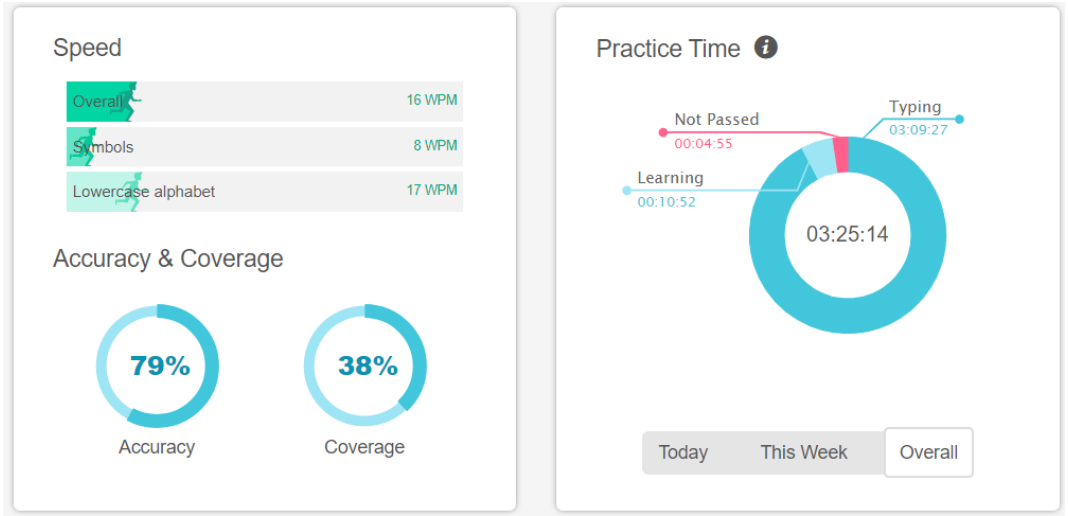

Figure 2.2: The progress in TypingClub

Chapter 3

LaTeX

During the class, we focused on LaTeX, a strong tool for creating professional-looking texts. We covered several elements of LaTeX and looked at various features and commands.

First, we learned how to create a LaTeX document and arrange it with sections, subsections, and paragraphs. We spoke about how to define the document class and specify the title and author information.

We highlighted throughout the session that LaTeX allows us to focus on the substance of the text while leaving the visual appearance and formatting to the computer. This separation of text and formatting allows us to simply change the look of the document without affecting the underlying content.

Finally, we had an informative presentation on the principles of LaTeX. We learned how to begin a LaTeX document, include photos, include different LaTeX papers, and modify font sizes. With this knowledge, I constructed a CV using the Latex template.

Chapter 4

Linux

During this session, we covered the fundamentals of the Linux shell, which acts as a text interface to the computer system. The Linux command line, often known as the shell, terminal, console, prompt, or by a variety of other names, is a powerful tool that is essential to Linux-based operating systems. After, we tried several shell commands in order to become acquainted with the Linux shell. We used commands to explore the file system, list directories, and files, create and remove files and directories, modify file permissions, and conduct other typical tasks.

We obtained hands-on experience and a better grasp of the possibilities of the Linux shell by actively practicing these commands. We noticed how the shell delivers a diverse range of services.

Finally, this session focused on the fundamentals of the Linux shell and gave a hands-on introduction to working with the command line interface. We performed numerous shell commands and saw their potential in action.

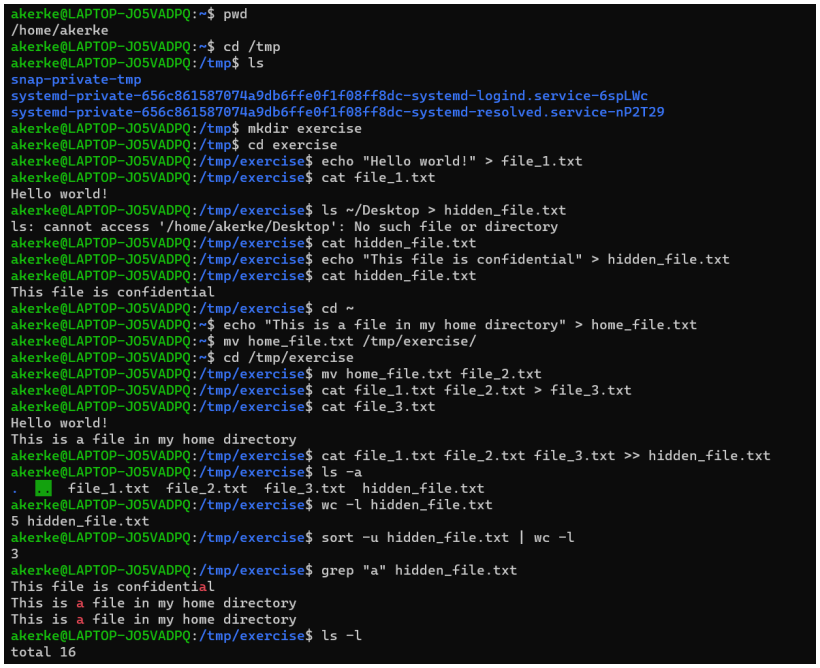

Figure 4.1:

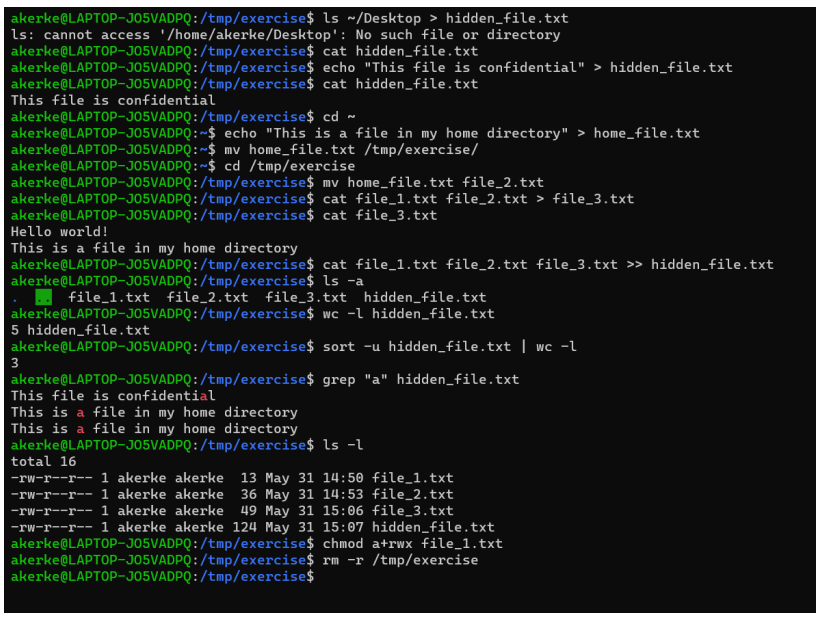

Figure 4.2: The pictures show the commands we tried in Linux Shell.

Chapter 5

HTML and CSS

During this session, we covered the fundamentals of HTML and CSS and their roles in building and structuring web pages. We started by learning about HTML, which is the standard markup language used to arrange the content of web pages. It enables us to specify the components and interactions between them inside a document, such as headings, paragraphs, pictures, links, and so on. We looked at CSS, which is used to format and style the layout of web pages. CSS allows us to customize the visual look of HTML components such as colors, fonts, margins, padding, and placement.

We obtained hands-on expertise in building a web page and applying various stylistic strategies by practicing HTML and CSS in the context of developing an online portfolio. This exercise helped us understand how HTML and CSS work together to generate aesthetically appealing and well-structured online content.

Finally, this session concentrated on the fundamentals of HTML and CSS and their importance in web development. We obtained practical experience by building an online portfolio website.

Chapter 6

Jupyter

During this session, we looked at Jupyter, a popular data science tool that has become the de facto standard for quick prototyping and exploratory analysis. Jupyter Notebooks provide an interactive environment in which code, documentation, and visualizations are all combined into a single document. We actively practiced utilizing Jupyter products during the workshop. To undertake data analysis, visualization, and other data science activities, we built Jupyter Notebooks and performed code cells. We investigated Jupyter Notebooks' interactive nature, which allows for rapid iterations and instant feedback on code execution and outcomes.

Finally, this session concentrated on the fundamentals of Jupyter and its importance in data science. We looked at how Jupyter Notebooks may help with quick prototyping, exploratory analysis, and documentation. We received hands-on experience with Jupyter products by building and running notebooks, executing code cells, and exploiting the interactive interface for data analysis.

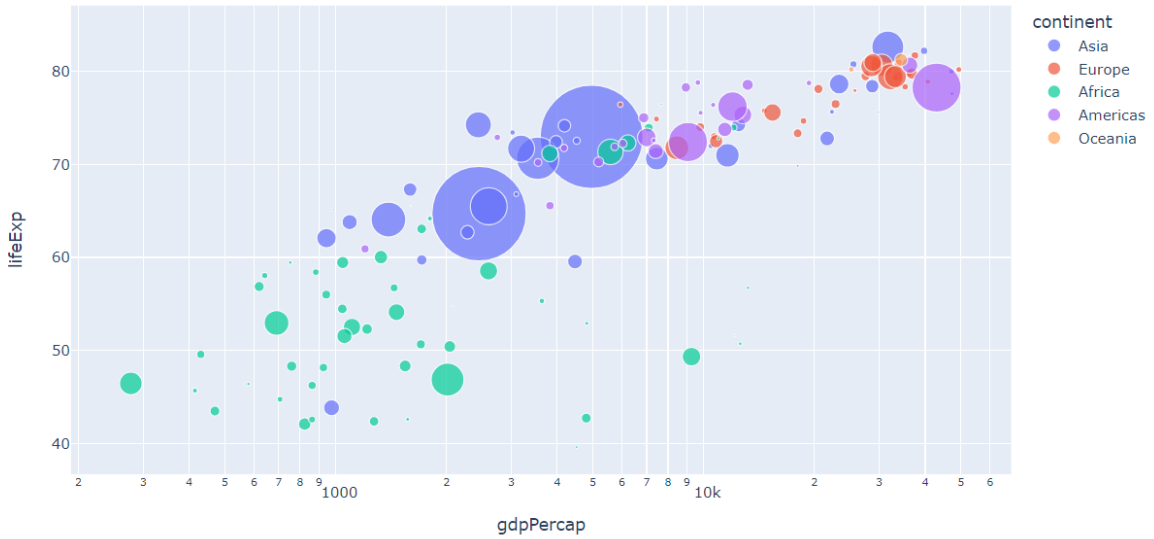

Figure 6.1:

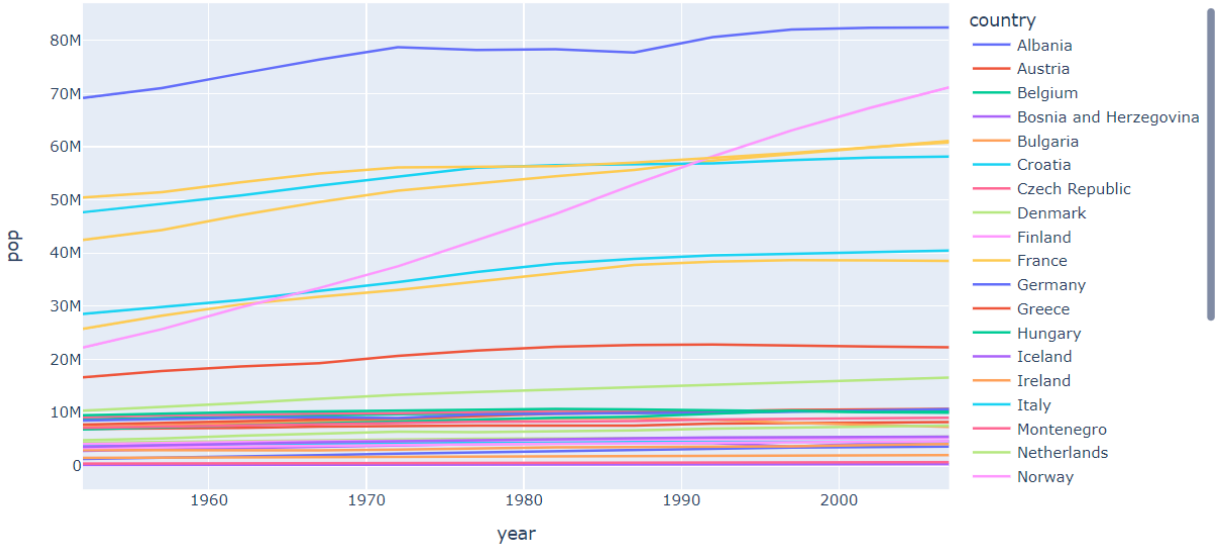

Figure 6.2: The graphs that were made for data anylysis

Chapter 7

Git

During this session, we learned the fundamentals of Git, a popular version control system that allows developers to collaborate on projects regardless of their physical location. Git has a number of features that help with productivity and code management.

Following that, we went through the essential ideas of Git. We spoke about repositories, which serve as the core storage location for a project's codebase. We analyzed commits, which indicate a certain point in the project's history and contain the modifications made to the code. Branches were another important notion we investigated since they allow for parallel work and experimentation without affecting the main source.

Finally, this session concentrated on the fundamentals of Git and its importance in software development. We looked at how Git can help with version control, collaboration, and code management.

Chapter 8

GitHub

In this session, we looked at the fundamentals of GitHub, a web-based platform that has grown in popularity among developers for version control, collaboration, and project management of software projects. GitHub acts as a centralized hub for hosting Git repositories and provides a variety of capabilities to help developers.

Following that, we looked at GitHub's primary features. We looked at repository administration, which includes creating repositories, configuring access restrictions, and categorizing code into branches and tags. We also talked about issue tracking, which allows developers to monitor and report problems, feature requests, and other project-related duties. We also looked into pull requests, which allow for code review and the merging of changes from many authors.

Finally, this session concentrated on the fundamentals of GitHub and its importance in software development. We investigated its position as a web-based platform for hosting Git repositories, as well as its many collaboration and project management tools.

Chapter 9

Conclusion

Throughout these sessions, we looked at a variety of subjects and technologies that are crucial to many sectors of technology. We covered touch typing, LaTeX, HTML and CSS, Jupyter, Git, and GitHub, all of which provide useful skills and tools for various elements of computing and communication.

During the touch typing session, we learned the value of efficient and precise typing abilities, which are vital in today's digital world. By practicing touch typing, we may improve our typing speed and accuracy, resulting in higher productivity and fewer errors in our job.

Moving on to LaTeX, we realized its ability as a typesetting system for generating professional-looking documents. LaTeX allows us to focus on the substance of the document while the machine handles the formatting.

We covered the fundamentals of web building in the HTML and CSS workshop. HTML serves as the foundation of web pages, establishing their structure and content, while CSS allows us to customize and format their layout. Following that, we looked at Jupyter, a powerful tool that is extensively used in data science and research. Jupyter Notebooks provide an interactive envi-

ronment for executing code, documenting it, and visualizing it. They allow us to rapidly prototype and experiment with data, improving the efficiency and reproducibility of the research process.

The Git session introduced us to the realm of version control, which allows developers to effectively monitor changes, communicate, and manage code. We can retain a complete history of our projects, revert to prior versions, and collaborate with others by utilizing Git.

Then we looked into GitHub, a web-based collaboration and project management software. GitHub serves as a centralized repository hosting service for Git repositories, allowing developers to effectively monitor changes, manage issues, and coordinate work. It's a great place to contribute open-source code, collaborate with others, and record your projects.

Finally, these sessions have supplied us with a wide variety of abilities and information that are necessary for the field of technology. We have received practical experience and comprehension of important technologies used in numerous areas, from boosting our typing speed to learning programs such as LaTeX, HTML, CSS, Jupyter, Git, and GitHub. These abilities will enable us to excel in our academic undertakings, research initiatives, software development projects, and collaborative work in the digital environment.

Chapter 10

GitHub Link

My Github repository to see my works