An Internship Report On

C++ Development

in

Third Year Engineering - Computer Engineering

by

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Under the guidance of

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CERTIFICATE

This is to certify that Internship entitled "**C++ Development** ",submitted by **Pranoti Bartakke** (Roll Number: *08*), an undergraduate student of **T.Y. Engineering (2022-23)** in partial fulfillment for the award of degree of **Bachelor of Engineering** with specialization of **Computer Engineering**. To the best of my knowledge and belief this work has not been submitted elsewhere for the award of any other degree.

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Head of Department
Prof. Shrikant Dhamdhere

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Internship Guide
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CERTIFICATE OF APPROVAL

This is to certify that **Pranoti Nitin Bartakke , Third Year (Computer Engineering)** student of Parvatibai Genba Moze College of Engineering has done his Internship Work titled **C++ Development** in our computer Department as a part of curriculum.

We have notice that, during the period, he has shown keep interest in his assignment and was also regular in attendance.

Examiners:

1. .....
2. .....
3. .....

Place: Pune

Date:.....

ACKNOWLEDGEMENTS

First of all, I would like to express my sincere and deep gratitude to my guide, **Prof. Rupali Wagh**, Faculty, Department of Computer Engineering, for his kind and constant support. His valuable advice, critical criticism and active supervision encouraged me to sharpen my methodology and was instrumental in shaping my professional outlook.

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ABSTRACT

This work done is aimed at developing an C++ based applications that is of importance to a specific department of a college.

Electronic Voting Machine (EVM) is a simple electronic device used to record votes in place of ballot papers and boxes which were used earlier in conventional voting system. Fundamental right to vote or simply voting in elections forms the basis of democracy. All earlier elections be it state elections or centre elections a voter used to cast his/her favorite candidate by putting the stamp against his/her name and then folding the ballot paper as per a prescribed method before putting it in the Ballot Box. This is a long, time-consuming process and very much prone to errors.

Nowadays, many effective heuristics methods has been successfully applied in various problem domains. The heuristic methods are possible to be used in game development as they can help to inspire a creative player experience. In computer games, player want to enjoy the games, and programmer needs to have heuristic skills to guide the software for winning the game. Thus, the program needs to be intelligent in order to make user (player) more exciting with the game.

Contents

Chapter 1

Introduction

1.1 1.1 What is C++ Development?

C++ development is the process of writing, testing, and deploying software applications using the C++ programming language. C++ is a general-purpose, high-level programming language that is widely used for developing applications that require high performance and efficient memory management.

C++ development typically involves writing code using an Integrated Development Environment (IDE) such as Visual Studio or Code::Blocks. The IDE provides features such as code highlighting, debugging, and project management to help developers write code more efficiently.

The development process typically involves the following steps:

1. Requirements gathering: Identify the needs and requirements of the application to be developed.

2. Design: Create a design for the software, including the architecture, user interface, and functionality.

3. Implementation: Write code in C++ to implement the design.

4. Testing: Verify that the software meets the requirements and works correctly by testing it.

5. Deployment: Deploy the software to the target environment and make it available for use by end-users.

C++ development is used for a wide range of applications, including desktop software, video games, operating systems, and high-performance computing. It is known for its speed, efficiency, and ability to directly access hardware resources, making it a popular choice for developing applications that require high performance.

1.2 Tools and technologies used for development

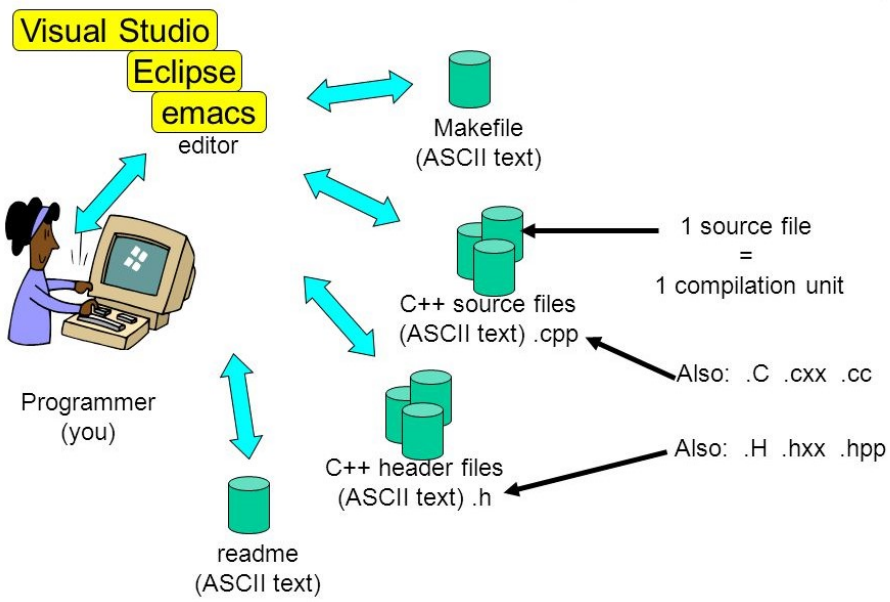

Figure 1.1: C++ Development Environment

1.3 Goals and Objectives

- Develop efficient and high-performance software: C++ is known for its ability to create fast and efficient software. One of the primary goals of C++ development is to leverage the language's performance capabilities to develop software that runs quickly and efficiently.
- Create maintainable and scalable code: As software projects grow in complexity, maintaining and scaling the codebase can become increasingly challenging. C++ developers aim to create code that is modular, well-organized, and easy to maintain and extend over time.
- Ensure software quality and reliability: Bugs and errors in software can cause serious problems for users and damage the reputation of the development team. C++ developers strive to produce software that is reliable, stable, and free from defects through rigorous testing and debugging.
- Utilize modern development practices: C++ development is not a static field, and developers must stay up-to-date with the latest tools, technologies, and best practices. C++ development goals include staying informed about new developments in the field and adopting modern development practices to improve productivity and efficiency.
- Foster a collaborative and productive development environment: Successful software development requires effective collaboration between developers, project managers, and other stakeholders. C++ development goals include fostering a positive and productive development environment that encourages communication, collaboration, and creativity.

Chapter 2

Scope

An internship in C++ development can be an excellent opportunity for me to gain practical experience in the field and develop their skills.

- Learning the fundamentals of C++ programming: An internship can provide a solid foundation in C++ programming concepts, syntax, and best practices.
- Hands-on experience in developing real-world projects: Interns can work on real-world projects, which can help them gain practical experience and develop problem-solving skills.
- Exposure to modern development tools and technologies: Interns can work with the latest development tools and technologies used in C++ development, which can help them stay up-to-date with the latest trends and best practices in the field.
- Collaboration with experienced developers: Interns can collaborate with experienced developers and learn from their expertise and experience in the field.
- Networking opportunities: An internship can provide opportunities to network with professionals in the industry, which can help in career development.
- Building a portfolio: Interns can showcase their work in a portfolio, which can help in future job applications.

Chapter 3

Literature Survey

A literature survey for a C++ development internship would involve researching and reviewing the relevant literature in the field of C++ programming and software development. Here are some potential sources of information for a literature survey:

- C++ programming books: Reading C++ programming books can provide a solid understanding of the language, its features, and its syntax. This can help in developing a strong foundation in C++ programming, which is essential for an internship in C++ development.
- TOnline resources: There are many online resources available that provide tutorials, articles, and documentation on C++ programming and software development. Examples include Stack Overflow, GitHub, and C++ reference websites.
- Industry reports and surveys: Industry reports and surveys can provide insights into the current state of the C++ development industry, including trends, best practices, and emerging technologies.
- Research papers and academic publications: Research papers and academic publications can provide a deeper understanding of the theoretical aspects of C++ programming and software development. Examples include papers on software design patterns, software engineering, and programming languages.
- Blogs and forums: Blogs and forums can provide insights into the experiences of other developers in the field, including their challenges, successes, and best practices.
- C++ development frameworks and libraries: Exploring popular C++ development frameworks and libraries can provide insights into the tools and technologies used in the industry, and how they are used to develop real-world applications.

Chapter 4

Problem Statement

4.1 Problems in existing system

- One of the biggest concerns with online voting systems is the potential for security breaches.
- Another potential problem is the ability to verify the authenticity of the votes cast. Without proper verification measures in place, there is a risk that fraudulent votes may be cast or that the system could be manipulated.
- Online voting systems may not be accessible to all voters. Some people may not have access to the internet, or may not be comfortable using technology. This could potentially exclude certain groups of voters from participating in the democratic process.
- Another potential problem is the ability to verify the authenticity of the votes cast. Without proper verification measures in place, there is a risk that fraudulent votes may be cast or that the system could be manipulated.

4.2 Solution to these problems

- To mitigate these risks, the system should employ robust encryption and authentication mechanisms.
- The system should provide a clear audit trail that tracks every vote and ensures that it is counted accurately.

- The system should provide clear and comprehensive voter education materials that explain how the system works, what security measures are in place, and how to use the system effectively.

Chapter 5

Methodology Analysis

This document plays a vital role in the development of life cycle as it describes the complete requirement of the work done.
Different software development methodologies are used in the industry, such as Agile, Waterfall, and Scrum. Identifying the methodology used in the organization can help in understanding the development process and the roles of different team members.
User Characteristics
Task 1

- The online voting system should only allow eligible voters to participate in the voting process. This can be determined based on age, citizenship, residency, and other eligibility criteria.
- Users of the online voting system should have basic computer literacy skills to navigate the online platform, follow instructions, and submit their votes.
- Users should have trust in the technology used for the online voting system, as they will be relying on it to cast their votes.

Task 2

- Players can range from children to adults. The user interface should be designed to accommodate users across different age ranges.
- Players can have different levels of experience and skill in playing tic tac toe. The game should provide different difficulty levels to accommodate players with different skill levels.
- The game should be designed to accommodate players from different language and cultural backgrounds. The game should be available in multiple languages and use symbols and icons that are meaningful to users from different cultures. may have different levels of proficiency with technology and digital devices. The game should be designed to be accessible and easy to use for players with different levels of technological expertise.

Task 3

- Users may be booking tickets for themselves or for a group of people, such as friends or family. The system should provide options for single-ticket and group-ticket bookings to accommodate different social contexts.
- Players can have different levels of experience and skill in playing tic tac toe. The game should provide different difficulty levels to accommodate players with different skill levels.
- Users may have concerns about the security and privacy of their personal and financial information. The system should be designed with strong security measures, such as encryption and two-factor authentication, to protect users' data.
- Players Users may have different preferences for movie genres, actors, directors, and ratings. The system should provide options for searching and filtering movies based on these preferences.

Chapter 6

Software and Hardware Specification

6.1 Hardware Specification

- Processor : Pentium
- Memory : 512MB RAM
- File System : 64 Bit

6.2 Software Specification

- C++ Compiler: A popular C++ compiler is GNU Compiler Collection (GCC), which is available for multiple platforms.
- Integrated Development Environment (IDE): Visual Studio Code
- Operating System: Windows 10
- Programming language: C++
- Web Browser : Google Chrome

Chapter 7

System Design

7.1 Task 1

- The voting system should allow voters to cast their vote securely and accurately. The system should ensure that each vote is counted only once and that the voter's choice is recorded accurately.
- Once the voting period is over, the system should count the votes and generate results. The vote counting process should be transparent and auditable to ensure the accuracy of the results.
- The system should be designed to be easily maintainable, with regular updates and bug fixes to ensure that it runs smoothly and securely.

7.2 Task 2

- The user interface is the primary component of the system design. It consists of a 3x3 grid that allows the players to make their moves.
- The game engine is the backend component of the system design. It is responsible for managing the game state, validating moves, and determining the winner.
- The system design includes security measures to prevent cheating or hacking.

7.3 Task 3

- The user interface is responsible for handling the interaction between the user and the system. It provides the user with the option to choose the movie, showtime, and seat.

- The seat reservation system is responsible for keeping track of the available seats and reserving the seats for the user. This system can be implemented using an array or a database to store the status of the seats.
- This system can be implemented using an array or a database to store the status of the seats.

Chapter 8

Conclusion

The work experiences I encountered during the internship allowed me to develop projects using c++. I think I still require to work on my technical knowledge. But, the overall experience was positive, and everything I learned would be useful in my future career in this field.

Chapter 9

References

https://interncrowd.in/internship.html
https://github.com/Pranoti-2002/Voting-System-.git
https://github.com/Pranoti-2002/Tic-Tac-Toe-Game.git