BACHELOR OF SCIENCE

IN

INFORMATION TECHNOLOGY

SPOTTER

Quezon City University Library Meeting
Room Reservation System

SBIT - 2G
GROUP 5
DECEMBER 2023

Gantt Chart

Tasks	Week 7	Week 8	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17
1. Group Meeting 1 (Brainstorming)	■									
2. Group Meeting 2 (Brainstorming)	■									
3. Create Project Proposal		■								
4. Present Project Proposal		■								
5. Create Flowchart			■							
6. Create Context Diagram			■							
7. Create Entity Relationship Diagram			■							
8. Create Use Case Diagram			■							
9. Create Database Design			■							
10. Create Prototype (UI/UX)			■	■						
11. Setup/Create Database					■	■				
12. Coding and Debugging					■	■				
13. Program Testing							■	■		
14. Fixing Errors							■	■		
15. Finalize Final Project Documentation									■	
16. Project Presentation										■

Figure 1: Group 5 Gantt Chart
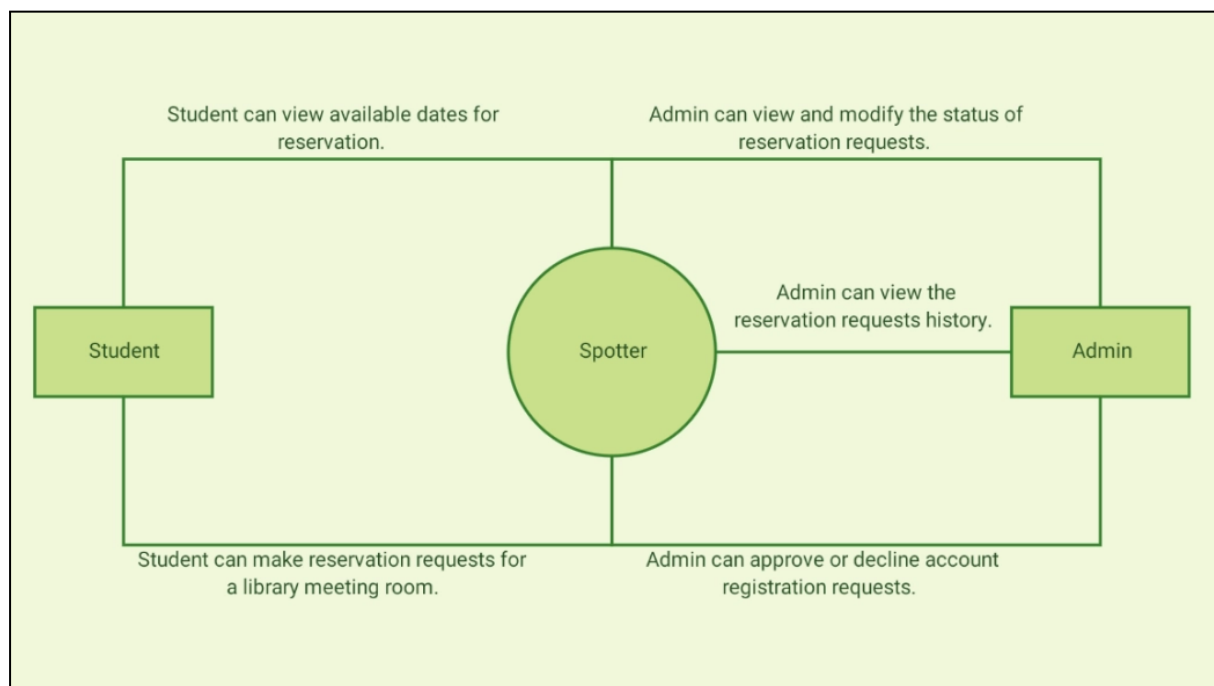
Context Diagram

Figure 2: Spotter's Context Diagram
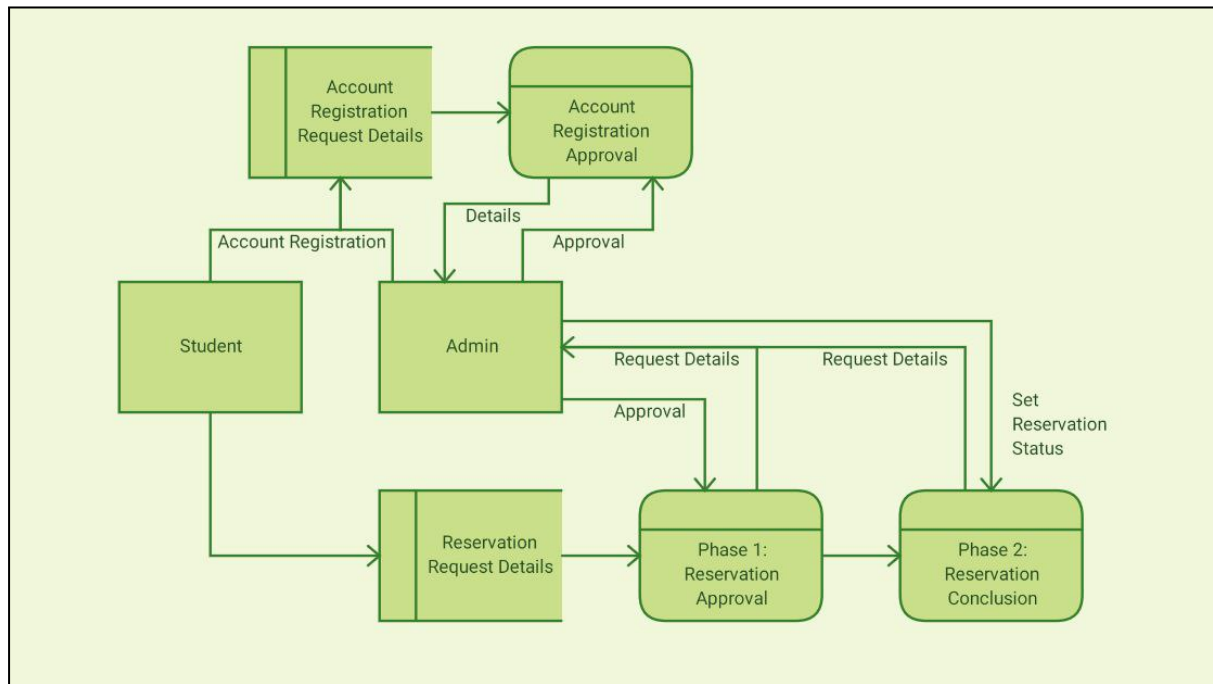
Data Flow Diagram

Figure 3: Spotter's Data Flow Diagram
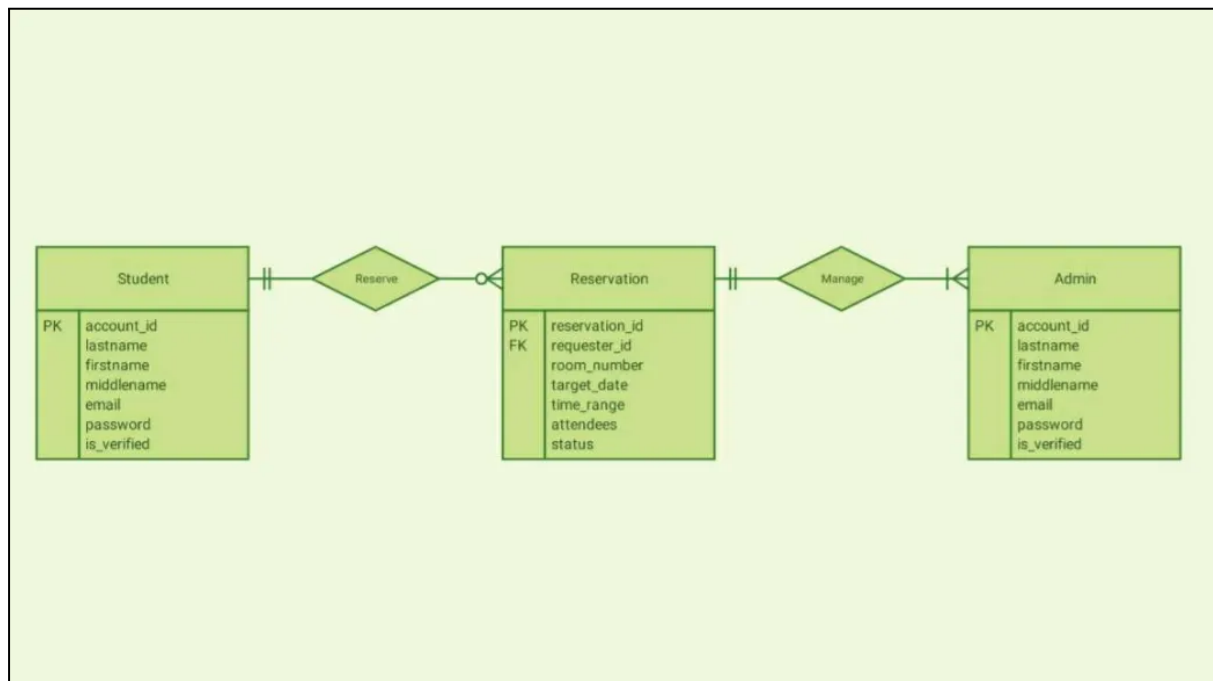
Entity Relationship Diagram

Figure 4: Spotter's Entity Relationship Diagram

Data Structure

Data structures are categorized into primitive and non-primitive types based on storage. Primitive structures like Integer, float, char, and pointers store a single predefined value in one location. They lack additional techniques and have known variable types and sizes. Non-primitive structures, referred to as reference types, include files, lists, arrays, and stacks. Unlike primitives, their data types are predefined by the programming language, not created by the programmer.
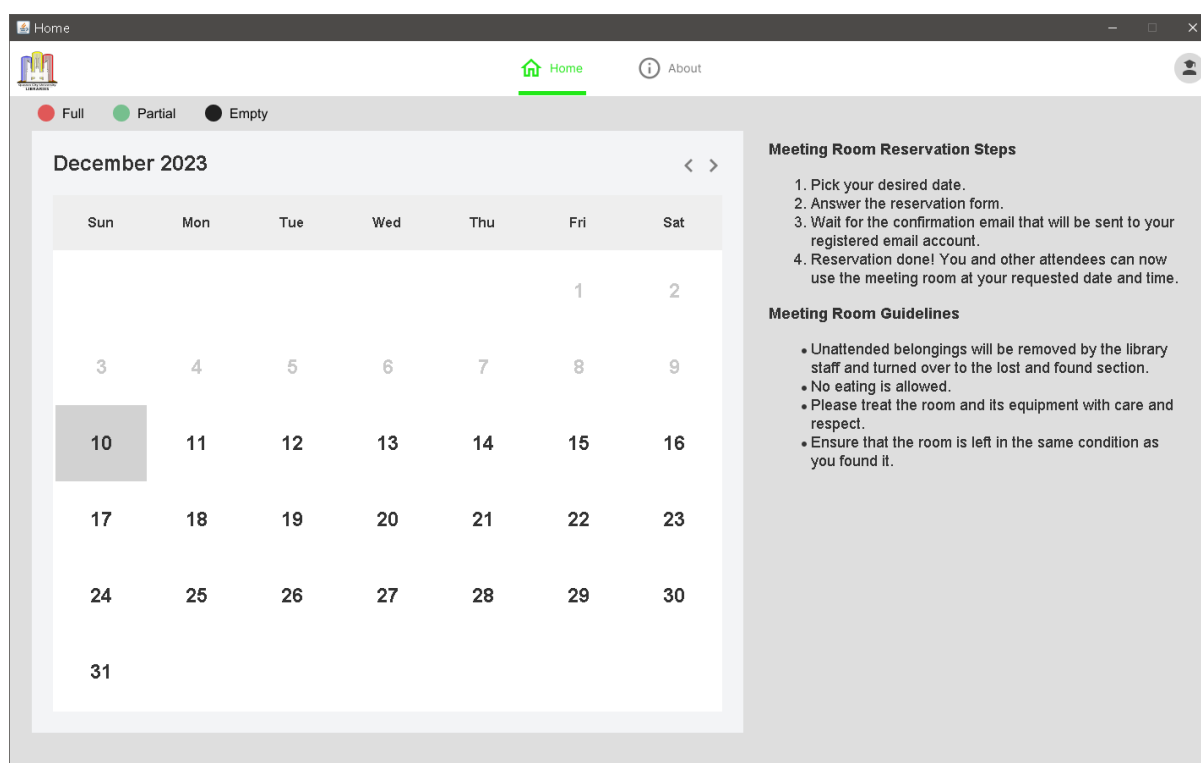

Figure 5: Spotter's Student Home Window

The calendar UI, depicted in Figure 5, is drawn using the "DrawCalendarDays" method on launch. It uses a JPanel (Calendar_Days) for displaying days, clearing existing components before updating. The method calculates the starting day, populates panels for each day, highlights the selected day, and applies colors based on reservations. It efficiently utilizes a two-dimensional array, "DaysRequests," to customize day appearances using reservation data during calendar creation. The use of a two-dimensional array, "DaysRequests," which stores reservation data, demonstes the role of data structures in managing and representing information within the program.
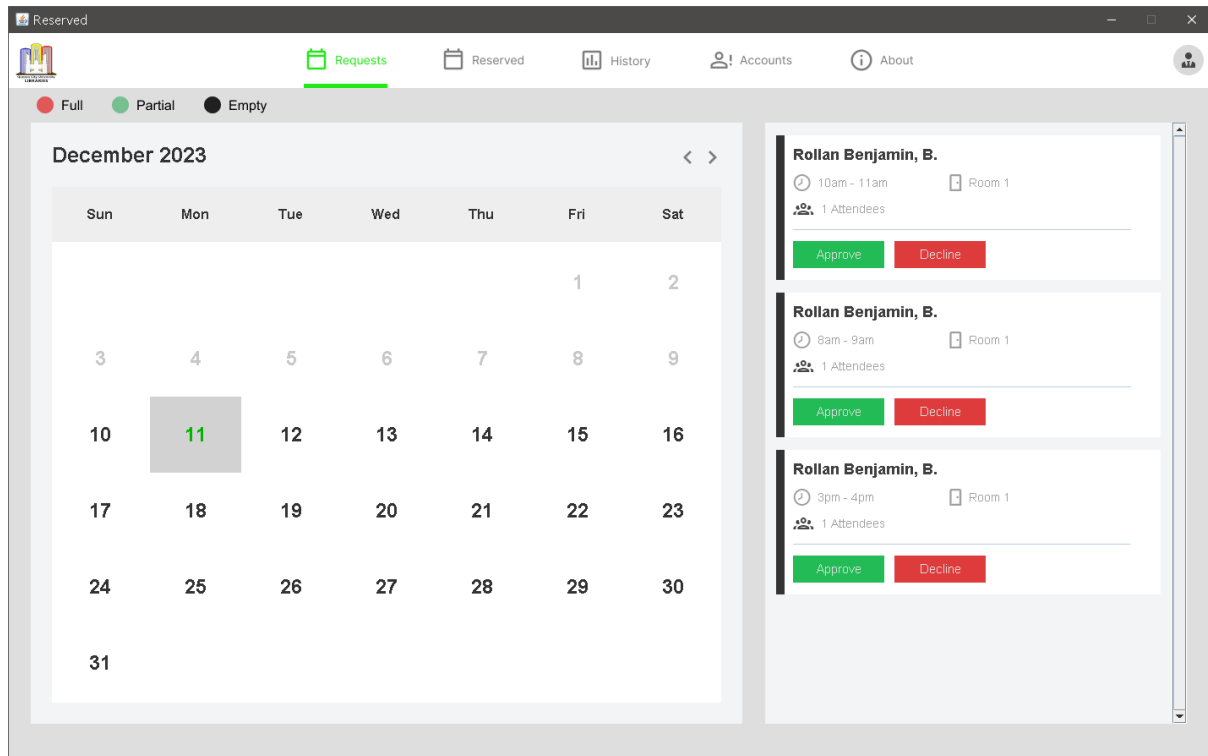
Figure 6: Spotter's Admin Requests Window

Figure 6 shows a calendar UI and a list of reservation requests on the right. To list the requests in tiles form, the program firstly runs a method called "getDaysWithReserved". The method interacts with a MySQL database to retrieve reservation information for specific days in a given year and month. The key data structures include the dynamic array List<int[]> dayList and the two-dimensional array int[][] dayArray. dayList stores arrays of integers representing the reservation count for each day, while dayArray serves as a fixed-size version of the same data. The method establishes a database connection, executes a SQL query, populates dayList with the obtained information, and returns the converted two-dimensional array for more convenient handling.

System Functional and Non-Functional

In software development, system functionality relates to what a system does for users, while non-functional requirements encompass aspects like performance, reliability, security, and usability, focusing on how well the system performs. Both are crucial for system effectiveness, with functionality meeting user needs and non-functional requirements ensuring overall quality. The following outlines the system's functional and non-functional requirements.

- Functional Requirements
  - **User Registration and Authentication:** The system must enable patrons to securely create accounts and log in.
  - **Account Registration Verification:** All account registrations must undergo approval by verified admin/staff before the account becomes active.
  - **Room Availability Calendar:** The system should feature a calendar interface displaying room availability, allowing users to select time slots for reservations.
  - **Booking Management:** Students should have the ability to request room bookings, and library staff/admin should be capable of managing and approving these requests.
  - **Confirmation and Notifications:** The system should send automated confirmation emails to students upon approval or decline of their room reservation requests. Similarly, account registration requests should trigger corresponding confirmation or rejection notifications.

- Non-Functional Requirements
  - **Usability:** The system must feature a user-friendly interface for easy navigation and efficient booking processes.
  - **Performance:** The system should provide efficient response times, ensuring quick access to room availability and booking functionalities.
  - **Notification Reliability:** Automated confirmation emails and reminders must be reliable and promptly delivered to users.
  - **Desktop Compatibility:** The system is primarily designed for desktop use.

BENJAMIN B. ROLLAN

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OBJECTIVE

I aspire to become a successful web developer one day. To realize my dream, I try to broaden my knowledge bit by bit because I believe that small progress is still progress, and these little steps will add up to bigger results.

PERSONAL DETAILS

Date of Birth: December 2, 2003
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- North Fairview High School - Senior High School
- North Fairview High School - Junior High School
- Bilogo National High School - Junior High School

Primary
- Bilogo Elementary School

SKILLS

1. Programming (HTML, CSS, JS, Java, SQL)
2. UI / UX
3. Communication Skills
4. Problem Solving Skills

MOLINA, JOHN KARL P.

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#16 Quezon ST T.S Cruz Novaliches Quezon City

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OBJECTIVE

To work for a company that provides opportunities and a learning environment that will help me learn and expand as a professional, where I can further develop my talents and apply all I've learned in my education.

PERSONAL DETAILS

Date of Birth: April 28, 2004
Nationality: Filipino
Gender: Male
Language: English, Filipino
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary

- Quezon City University - Bachelor of Information Technology

Secondary

- STI Novaliches (2020 - 2022) - Senior High School
- Novaliches High School (2016 - 2020) - Junior High School

Primary

- San Agustin Elementary School (2010-2016)

SKILLS

1. Communication Skills
2. Problem Solving Skills
3. Organized
4. Flexible and adaptable to changes

MILLOREN, FRANKLIN F.

09939851256

#13 Sampaguita St. Sitio Militar Bahay Toro Quezon City

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OBJECTIVE

To leverage my skills and experience in a dynamic environment, contributing positively to the company's success and growth

PERSONAL DETAILS

Date of Birth: September 29, 2002
Nationality: Filipino
Gender: Male
Language: Filipino, English
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- Gardner Collage (2019-2021) - Senior High School
- San Francisco High School (2015-2019) - Junior High School

Primary
- Toro Hills Elementary School

SKILLS

1. Adaptable and quick learner
2. Problem-solving Skills
3. Proficient in programming languages (Java)
4. Familiarity with database (MySQL)

JOHN DAVID DG. RAMOS

09927663606

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OBJECTIVE

Detail-oriented and newbie computer technician seeking a challenging role to apply my skills in analyzing, and troubleshooting hardware components. Looking to contribute to the development of cutting-edge technologies and ensure optimal performance in a dynamic and innovative hardware-focused environment.

PERSONAL DETAILS

Date of Birth: May 13, 2004
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Protestant

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- New Era Highschool- Junior High School
- Tandang Sora National Highschool - Junior High School
- Dr. Carlos S Lanting College - Senior High School

Primary
- Coramdeo Christian Academy

SKILLS

1. Advanced computer troubleshooting
2. Problem Solving Skills
3. Communication Skills
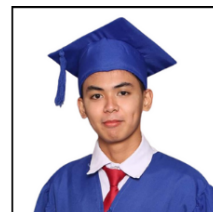4. Flexible and adaptable to changes

LUIS ANGELO V. RUALO

09953104769

Brgy. Matandang Balara, Luzon Avenue, Quezon City

rualoluis23@gmail.com

OBJECTIVE

Dedicated and detail-oriented individual with a passion for critical thinking and problem-solving. Seeking opportunities to leverage strong software proficiency, communication skills, and adaptability to contribute effectively in a dynamic and challenging work environment. Eager to apply my skills and continue learning to achieve both personal and organizational goals.

PERSONAL DETAILS

Date of Birth: July 23, 2003
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary

- Quezon City University - Bachelor of Information Technology

Secondary

- ACLC College of Commonwealth - Senior High School
- Ramon Magsaysay Cubao High School - Junior High School

Primary

- Old Balara Elementary School

SKILLS

1. Critical Thinking
2. Software Proficiency
3. Communication Skills
4. Adaptability: Quick learner with a flexible mindset, able to adapt to new situations and challenges.
5. Time Management: Efficiently manage time to meet deadlines and prioritize tasks effectively

JEIAN JASPER S. OBELIDOR

09272530395

7 T. Gonzales Drive Gulod Novaliches, Quezon City

obelidor.jeianjasper@gmail.com

OBJECTIVE

Ambitious college student pursuing excellence in web development, specializing in front-end technologies and UI/UX design. Committed to delivering polished, user-centric interfaces through proficiency in HTML, CSS, and JavaScript. Seeking a professional opportunity to apply skills and contribute to innovative web development projects.

PERSONAL DETAILS

Date of Birth: January 2, 2004
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- Holy Angel School of Calocoan Inc. - Senior High School
- Doña Rosario High School - Junior High School

Primary
- Rosa L. Susano Novaliches Elementary School

SKILLS

1. Front - End Development (Proficient in HTML, CSS, JavaScript)
2. Critical Thinking
3. Creativity
4. Adaptability

RABORAR, JOHN CARLO M.

09171502993

Brgy. Nagkaisang Nayon Novaliches, Quezon City

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OBJECTIVE

Seeking a challenging position as an IT professional where I can leverage my education, technical skills, and passion for innovation to contribute to the success of a dynamic organization. Eager to apply my expertise in [specific technologies or areas of interest], collaborate with cross-functional teams, and continuously enhance my abilities in a fast-paced and evolving IT landscape.

PERSONAL DETAILS

Date of Birth: July 11, 2003
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Catholic

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- Doña Rosario High School
- Jose Maria Panganiban Senior High School

Primary
- Nagkaisang Nayon Elementary School

SKILLS

1. Musically Inclined
2. Time Management: Efficiently prioritize tasks and manage deadlines.
3. Problem-solving: Analytical mindset to identify and solve complex problems.
4. Adaptability: Quick learner, adaptable to new technologies and methodologies.

JERWIN B. MASAGCA

09167044709

Foresthill Subdivision Novaliches, Quezon City

masagca.jerwin.bedro@gmail.com

OBJECTIVE

A highly organized and hard-working individual looking for a responsible position to gain practical experience.

PERSONAL DETAILS

Date of Birth: November 22,2003
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Catholic

EDUCATIONAL BACKGROUND

Tertiary

- Quezon City University - Bachelor of Information Technology

Secondary

- Jose Maria Panganiban - Senior High School
- Doña Rosario High School - Junior High School

Primary

- Rosa L. Susano Novaliches Elementary School

SKILLS

1. Time Management
2. Flexibility
3. Innovate
4. Organization

JEROM CORPUZ

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Barangay Capri Novaliches, Quezon City

jeromcorpuz0221@gmail.com

OBJECTIVE

To attain a position in a company where I can apply all my skills and knowledge while at the same time helping the company in attain its goals.

PERSONAL DETAILS

Date of Birth: February 21, 2004
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Roman Catholic

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- Jose Maria Panganiban Senior High School
- International Christian School
- Novaliches High School
- Doña Rosario High School

Primary
- Nagkaisang Nayon Elementary School

SKILLS

1. Dependable and trustworthy
2. Responsible
3. Goal oriented
4. Flexible with long patience

FLETCHER PETER M. HERNANDEZ

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San Agustin Novaliches, Quezon City

fletcherp8154@gmail.com

OBJECTIVE

A dedicated and creative individual aspiring to contribute passion and technical skills to a dynamic game development team.

PERSONAL DETAILS

Date of Birth: August 15, 2004
Nationality: Filipino
Gender: Male
Language: English, Tagalog
Civil Status: Single
Religion: Christian

EDUCATIONAL BACKGROUND

Tertiary
- Quezon City University - Bachelor of Information Technology

Secondary
- Novaliches Highschool - Senior High School
- Novaliches Highschool - Junior High School

Primary
- San Agustin Elementary School

SKILLS

1. Time Management
2. Flexibility
3. Innovate
4. Organization

VIII. Group Members and Designated Tasks

Names	Tasks
1. Rollan, Benjamin B.	- Project Manager - Full-stack Developer - System Analyst
2. Corpuz, Jerom	- Front-end Developer
3. Hernandez, Fletcher Peter M.	-Technical Writer (Documentation)
4. Masagca, Jerwin B.	- Front-end Developer
5. Milloren, Franklin F.	- Back-end Developer
6. Molina, John Karl P.	- Front-end Developer
7. Obelidor, Jeian Jasper S.	- UI/UX Designer
8. Raborar, John Carlo M.	- Front-end Developer
9. Ramos, John David DG.	- UI/UX Designer
10. Rualo, Luis Angelo V.	- Back-end Developer