Software Engineering 1
Section: UHBC 1235
Professor: Dr. Kianoosh G. Boroojeni
Project: Panther Login
Group 2
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Abstract:

Panther Login is a revolutionary leap for students and professors at FIU. Panther Login allows students and faculty to access their attendance and FIU information. Students can use Panther Login to keep track of scheduling, view class information, or sign in via a computer or mobile device. This app eliminates the antiquated "Scan this QR code that may or may not work" by enabling students and teachers an attendance keep system without the headache. Students can sign in with ease while teachers can keep track of student participation.
The goal of Panther Login is to create an application that is simple, accessible, and saves people time. Panther Login not only saves time for the end user but also implements aspects of My FIU in an intuitive user interface.

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Chapter 1: Introduction

1 - In this new implementation, we have taken student attendance tracking to the next level by integrating the requirement for students to log in to a secure Wi-Fi network before accessing the app. We understand the importance of safeguarding sensitive student information while providing a user-friendly interface, and our app accomplishes both of these goals. By leveraging the secure and reliable FIU_SecureWIFI network, we create a strong foundation for protecting student data while streamlining the check-in process.

This introduction will delve deeper into the features and benefits of our mobile app, highlighting how it enhances classroom efficiency, increases security, and fosters a technologically advanced learning environment.

1.1. Purpose of system.

The main objective of our mobile app system is to streamline the process of checking in for classes while prioritizing security and connectivity. Our goal is to simplify the traditional method of taking attendance by utilizing mobile technology and integrating it with the university's secure Wi-Fi network.

The system aims to eliminate the time-consuming and error-prone manual attendance tracking by providing students with a convenient and efficient way to mark their attendance through the mobile app. By minimizing disruptions and saving valuable class time, we strive to enhance the overall efficiency of the check-in process.

Another crucial aspect of our system is ensuring the security of student data. By requiring students to log in to the secure FIU_SecureWIFI network, we establish a robust connection that safeguards their attendance records. This additional layer of security maintains the privacy and integrity of sensitive information, ensuring that only authorized individuals can access the app.

This system embraces the ever-evolving landscape of education by creating a technologically advanced learning environment. By leveraging mobile devices and secure

Wi-Fi, we foster an integrated ecosystem where students can stay connected with their academic schedules, receive important notifications, and access relevant resources. This seamless and immersive learning experience enhances student engagement and participation.

Our system's purpose is to simplify the attendance tracking process, prioritize security, and cultivate a technologically advanced learning environment. By utilizing mobile technology and the university's secure Wi-Fi network, we strive to make the check-in process seamless, efficient, and secure, ultimately enhancing the overall educational experience for students.

1.2. Scope of the system (what is in scope and out of scope).

The scope of our mobile app system encompasses specific functionalities and features that are included within its intended purpose. By defining the scope, we clarify what is within the boundaries of the system and what falls outside of its intended focus.

In scope:

1. Check-in functionality: The system is designed to facilitate the check-in process for students attending classes. It includes features such as marking attendance, recording the time and date of check-in, and updating the attendance records.

2. Secure Wi-Fi integration: The system integrates with the university's secure Wi-Fi network (FIU_SecureWIFI) to ensure a protected and reliable connection for students. This integration serves as a security measure and enhances data privacy.

3. User authentication: The system includes a login feature where students are required to authenticate themselves using their unique credentials(User login: Panther ID & Password). This authentication process ensures that only authorized individuals can access the app and their attendance records.)

4. Mobile device compatibility: The system is designed to work seamlessly on mobile devices, such as smartphones and tablets. It provides a user-friendly interface optimized for mobile platforms, allowing students to easily check in for classes using their devices.

Out of scope:

1. Class scheduling: While the system may provide students with access to their academic schedules, the primary focus is on the check-in process. Detailed class scheduling functionalities, such as course registration, timetable management, and schedule modifications, are beyond the scope of this system.

2. Attendance policies and rules: The system does not define or enforce attendance policies or rules. It serves as a tool to streamline the check-in process but does not dictate or manage attendance requirements set by individual courses or educational institutions.

3. Student information management: The system does not handle comprehensive student information management, such as personal details, academic records, or grades. Its purpose is solely to facilitate the attendance tracking process.

4. Wi-Fi network management: The system does not encompass the management or administration of the university's Wi-Fi network (FIU_SecureWIFI). It solely relies on the network for secure connectivity during the check-in process.

By clearly defining the scope of the system, we can ensure that development efforts are focused on the intended functionalities and deliver a purposeful mobile app that aligns with the objectives of efficient check-in and enhanced security.

1.3. Objectives and success criteria of the project:

Objectives:

1. Improve Attendance Tracking: The primary objective of the project is to enhance the efficiency and accuracy of attendance tracking for students. By implementing the mobile app system, we aim to streamline the check-in process, reduce manual errors, and provide a more convenient method for students to mark their attendance.

2. Enhance Security: Another objective is to bolster the security of student data and attendance records. By integrating the system with the secure Wi-Fi network (FIU_SecureWIFI), we aim to establish a protected connection that safeguards sensitive information, ensuring that only authorized individuals can access and modify attendance records.

3. Foster Efficiency and Time-saving: The project aims to save valuable class time by minimizing disruptions caused by manual attendance taking. The mobile app system should offer a quick and intuitive check-in process, allowing students to mark their attendance effortlessly and efficiently.

4. Promote Technological Advancement: The project aims to foster a technologically advanced learning environment by leveraging mobile technology. By providing students with access to their academic schedules, notifications, and relevant resources through the app, we aim to enhance their engagement and overall learning experience.

Success Criteria:

1. Increased Efficiency: The success of the project will be measured by the reduction in time spent on attendance tracking. A successful implementation should result in a significant decrease in the time taken for students to check in, thereby increasing overall classroom efficiency.

2. Improved Accuracy: The project's success will be determined by the reduction in manual errors and discrepancies in attendance records. The system should provide accurate and reliable attendance data, minimizing the need for manual corrections or reconciliations.

3. Enhanced Security: The success of the project will be evaluated by the level of security achieved for student data. A successful implementation should ensure that only authorized individuals can access and modify attendance records, protecting sensitive information from unauthorized access.

4. Positive User Feedback: The success of the project will be gauged by the satisfaction and feedback of the users, primarily the students. Positive user feedback, indicating ease of use, convenience, and improved user experience, will indicate the project's success.

5. Increased Student Engagement: The project's success will be measured by the extent to which the app enhances student engagement and participation. Increased usage, interaction, and utilization of app features, such as accessing academic schedules and resources, will indicate a successful implementation.

Success Criteria Continued:

By achieving these objectives and meeting the defined success criteria, the project will demonstrate its effectiveness in streamlining attendance tracking, improving security, saving time, and fostering a technologically advanced learning environment.

1.4. Definitions, acronyms, and abbreviations:

Definitions:

- Geofencing: A virtual perimeter or boundary set around a physical location, in this case, the designated classroom, to trigger specific actions when a user enters or exits that boundary.
- API: Application Programming Interface - A set of rules and protocols that allows different software applications to communicate with each other and share data.
- User Credentials: Information used by users to authenticate their identity and gain access to the app, such as usernames, passwords, or biometric data.
- Push Notification: A message or alert sent to a user's mobile device from the app's server, even when the app is not actively being used.
- Backend: The server-side or non-user-facing components of the app are responsible for processing data, performing calculations, and managing the app's functionality.
- Frontend: The user-facing components of the app, including the user interface (UI) and user experience (UX).
- Repository: A storage location or database where data, such as student records or attendance information, is stored and managed.
- Attendance Register: A record or list used to track and record the attendance of students in a specific class session.
- Real-time Updates: Immediate and live updates that occur in real-time as attendance is marked by students.
- Dashboard: A visual interface that provides an overview of attendance records and real-time updates for professors.
- Notification: A message or alert sent to the student's mobile device to inform them about important updates, such as excessive absences.
- Absence Threshold: The predetermined number of classes or percentage of missed classes that triggers a notification to be sent to the student.
- Attendance Warning: A notification is sent to students when they exceed the absence threshold to remind them of their attendance status and the potential consequences.
- Attendance Policy: The specific guidelines and rules established by the educational institution or professor regarding attendance requirements and consequences.
- Encryption: The process of encoding data in a way that can only be accessed or decrypted with the appropriate encryption key or algorithm, ensuring confidentiality and data protection.
- Two-Factor Authentication (2FA): A security measure that requires users to provide two different forms of authentication, typically a combination of something they know (password) and something they possess (e.g., a verification code sent to their mobile device).

- Biometric Authentication: The use of unique physical or behavioral characteristics, such as fingerprints, facial recognition, or voice recognition, to verify the identity of an individual.
- Access Control: The process of granting or restricting user access to specific features, functionalities, or data within the app based on their assigned permissions or roles.
- Secure Socket Layer (SSL) / Transport Layer Security (TLS): Protocols that provide secure communication over a network by encrypting data transmitted between a client (app) and a server.
- Vulnerability: Weaknesses or flaws in the app's design, implementation, or configuration that could be exploited by attackers to compromise security.

Acronyms and Abbreviations:

- SRD: Software Requirements Document
- GPS: Global Positioning System
- UI: User Interface
- API: Application Programming Interface
- CSV: Comma-Separated Values
- PDF: Portable Document Format
- HTTPS: Hypertext Transfer Protocol Secure
- DBMS: Database Management System
- UX: User Experience
- UI: User Interface
- SDK: Software Development Kit
- OS: Operating System
- CRUD: Create, Read, Update, Delete (database operations)
- OTP: One-Time Password
- PIN: Personal Identification Number
- AES: Advanced Encryption Standard
- SMS: Short Message Service
- SMTP: Simple Mail Transfer Protocol

1.5. Overview of the document - a brief explanation of chapters 2 through 6.

Now that we have introduced a little of what we have in mind to accomplish through the course of this project, we will present an overview of the document. This will be done to showcase what is expected to be seen in future pages and how the team organized the creation of this project.

- Chapter 2: In this portion of the paper, we will list the current limitations and problems that we have been experiencing through the brainstorming process of this project. Even though we thought we had everything at hand, the more we worked on this project, the more we saw future problems that could generate. In this section, limitations will also be analyzed with the purpose of looking back at them at some point and trying to improve the project to avoid the previously mentioned obstacles.

- Chapter 3: During this section, our team plans to establish an organization that every team member will have to follow in order to accomplish this project successfully. From an individual's roles to a project schedule, all of this will be used to assure that every individual in the team has a fair amount of work compared to the others and to assess that every individual is working on their part.

- Chapter 4: This portion of the paper will be used to introduce our written use case diagrams that will be used for the creation of this project. Every use case will be explained in detail, showcasing the purpose behind each possibility that arrives from any user interacting with our project.

- Chapter 5: This section will be in charge of showcasing the requirements and analysis the team underwent through the brainstorming section. Here we will depict every class diagram, object diagram, scenario, and sequence diagram that our time perceives as necessary for the complete analysis of the project. This is mainly done to observe every possible interaction a user could have with the application, to make it easier in the development process.

- Chapter 6: This section will serve as a Glossary, containing multiple terms that will be used in the document, especially domain-specific terms.

Chapter 2 Current System (limitations and problems) - either existing system. Or manual system that is being automated:

- If the app requires students to be connected to the school's Wi-Fi network, any disruptions or issues with the network could prevent students from marking their attendance accurately. Connectivity problems or Wi-Fi outages may lead to inaccuracies in attendance records.
- Location-based services using GPS or Wi-Fi signals may not always be precise, especially in large school buildings or areas with weak signal coverage. It could lead to inaccuracies if the app fails to accurately determine a student's location.
- The app itself may have technical glitches, bugs, or compatibility issues with certain devices, leading to difficulties in marking attendance. If the app is not properly maintained or updated, it could result in frustrations for students and teachers alike.
- Requiring a smartphone to mark attendance excludes students who do not own one or who may have limited access to smartphones. This could result in attendance discrepancies and potentially penalize students who do not have the means to use the app.
- Students may find ways to exploit the system, such as sharing their login credentials with others who may mark their attendance on their behalf. This can undermine the integrity of the attendance tracking process and lead to inaccurate records.
- Resource requirements: The app may require significant resources, such as server infrastructure, maintenance, and ongoing support. Implementing and maintaining the app may incur additional costs for the educational institution, which could be a limiting factor in its adoption or long-term sustainability.
- User adoption and engagement: Students and professors may resist using the app due to a lack of awareness, perceived inconvenience, or resistance to change. Low user adoption and engagement can limit the app's effectiveness in accurately tracking attendance and delivering its intended benefits.
- Integration challenges: Integrating the app with existing school systems, such as student information systems or attendance management systems, may pose technical challenges. Compatibility issues or limited integration options can hinder the seamless flow of data and create additional administrative burdens.
- Data security risks: Storing attendance information and personal data within the app poses potential data security risks. If the app lacks robust security measures, it may be vulnerable to unauthorized access, data breaches, or misuse of sensitive information.

Chapter 3 Project Plan:

Outline:

Panther Login isn't just about punching in or out of class, it's about the process. Our goal is to provide a seamless experience to the end user while working with the current infrastructure associated with Panther Connect. To achieve this goal our project plan is both simple and intuitive. This project will be built in stages, the first stage involves the construction of Panther login infrastructure. This includes use-case diagrams, system limitation dissection, and UI design. The next stage builds upon the first by creating a beta version of the App, this version will allow our team to make changes to UI or code assignment.

The final stage of this project is the implementation of Panther Login. This will include a working UI and a consistent interaction with the Panther Connect system. This final version will of course be open to updates or change upon aspects of the app, but the general formula of Panther Login will be set in stone. The success of Panther Login will depend upon the completion of these stages and a visual representation is available on the Gaant chart.

3.1: Project Organization:

The roles for tasks related to this project are assigned on a rolling basis. A list of tasks is outlined on the Gantt chart and if a member is interested in completing tasks then they can let the group know.
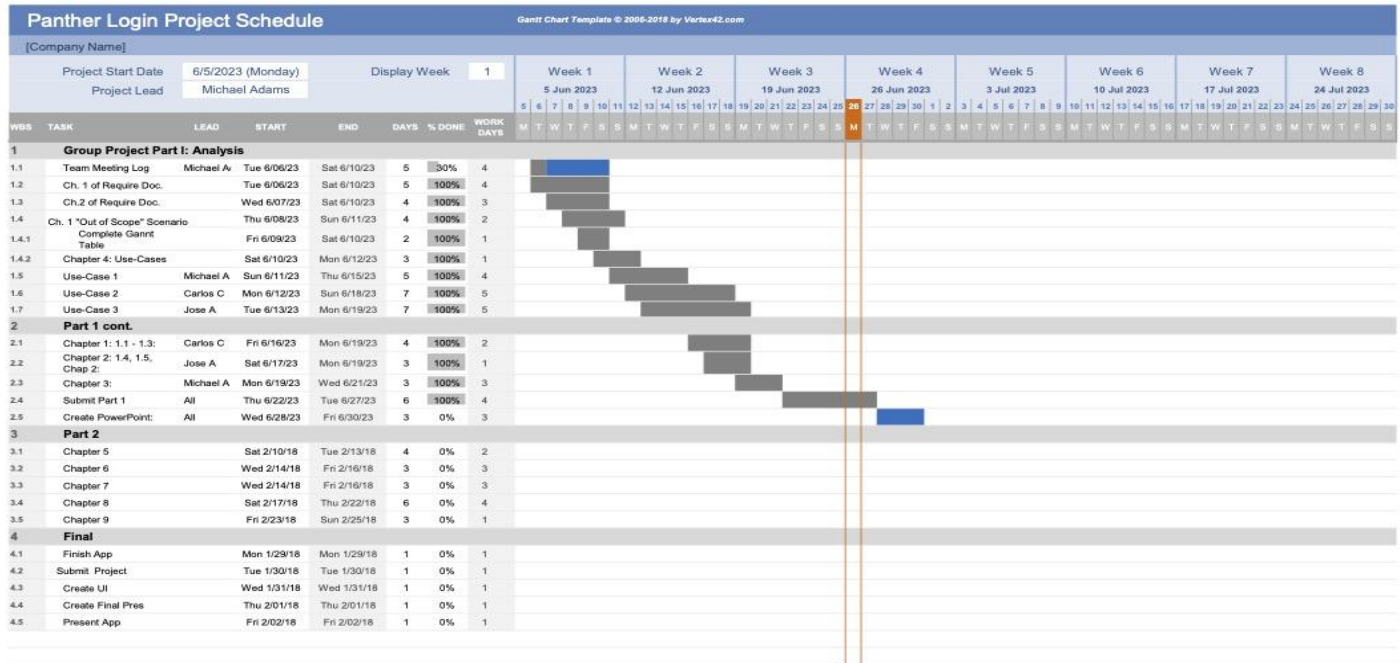
Once tasks are completed, each member will create a meeting to discuss the organization and delivery of their section of the project

3.2 Hardware and software requirements:

The hardware requirements for Panther Login are as follows. The user can access Panther Login from the web or an application. The web version of Panther login will be accessible to users of Windows or Macintosh and browsers such as Google Chrome, Apple Safari, or 3rd party applications. The web version of Panther Login will be coded in HTML5. The minimum systems requirements to run Panther Login are a dual-core(intel i5 or AMD equivalent), 4 GB of RAM, and access to a stable internet connection. If a student wishes to sign in to class they are required to connect to a FIU wifi source. This feature allows the app to verify that a user is located on campus or within the class they wish to attend.

Panther Login will also be accessible through a mobile device. The minimum device requirement for mobile users is a phone that has an Android or IOS system installed. The device must also support a web browser such as Chrome, Safari, or a 3rd party application. The device must have a stable internet connection with mobile data or a wifi source. If the user wishes to submit their attendance then a FIU wifi connection is required. If the user is not connected to FIU wifi then the user will be prompted to connect to FIU wifi.

3.3 Gantt Chart

Panther Login Project Schedule

[Company Name]

Gantt Chart Template © 2006-2018 by Vertex42.com

| Project Start Date | 6/5/2023 (Monday) | Display Week | 1 |
| Project Lead | Michael Adams | | |

| Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 |
| 5 Jun 2023 | 12 Jun 2023 | 19 Jun 2023 | 26 Jun 2023 | 3 Jul 2023 | 10 Jul 2023 | 17 Jul 2023 | 24 Jul 2023 |

WBS	TASK	LEAD	START	END	DAYS	% DONE	WORK DAYS
1	**Group Project Part I: Analysis**						
1.1	Team Meeting Log	Michael A	Tue 6/06/23	Sat 6/10/23	5	30%	4
1.2	Ch. 1 of Require Doc.		Tue 6/06/23	Sat 6/10/23	5	100%	4
1.3	Ch.2 of Require Doc.		Wed 6/07/23	Sat 6/10/23	4	100%	3
1.4	Ch. 1 "Out of Scope" Scenario		Thu 6/08/23	Sun 6/11/23	4	100%	2
1.4.1	Complete Gantt Table		Fri 6/09/23	Sat 6/10/23	2	100%	1
1.4.2	Chapter 4: Use-Cases		Sat 6/10/23	Mon 6/12/23	3	100%	1
1.5	Use-Case 1	Michael A	Sun 6/11/23	Thu 6/15/23	5	100%	4
1.6	Use-Case 2	Carlos C	Mon 6/12/23	Sun 6/18/23	7	100%	5
1.7	Use-Case 3	Jose A	Tue 6/13/23	Mon 6/19/23	7	100%	5
2	**Part 1 cont.**						
2.1	Chapter 1: 1.1 - 1.3:	Carlos C	Fri 6/16/23	Mon 6/19/23	4	100%	2
2.2	Chapter 2: 1.4, 1.5, Chap 2:	Jose A	Sat 6/17/23	Mon 6/19/23	3	100%	1
2.3	Chapter 3:	Michael A	Mon 6/19/23	Wed 6/21/23	3	100%	3
2.4	Submit Part 1	All	Thu 6/22/22	Tue 6/27/23	6	100%	4
2.5	Create PowerPoint:	All	Wed 6/28/23	Fri 6/30/23	3	0%	3
3	**Part 2**						
3.1	Chapter 5		Sat 2/10/18	Tue 2/13/18	4	0%	2
3.2	Chapter 6		Wed 2/14/18	Fri 2/16/18	3	0%	3
3.3	Chapter 7		Wed 2/14/18	Fri 2/16/18	3	0%	3
3.4	Chapter 8		Sat 2/17/18	Thu 2/22/18	6	0%	4
3.5	Chapter 9		Fri 2/23/18	Sun 2/25/18	3	0%	1
4	**Final**						
4.1	Finish App		Mon 1/29/18	Mon 1/29/18	1	0%	1
4.2	Submit Project		Tue 1/30/18	Tue 1/30/18	1	0%	1
4.3	Create UI		Wed 1/31/18	Wed 1/31/18	1	0%	1
4.4	Create Final Pres		Thu 2/01/18	Thu 2/01/18	1	0%	1
4.5	Present App		Fri 2/02/18	Fri 2/02/18	1	0%	1

The Gantt chart reflects current and future tasks associated with Panther Login. The dates after part 1 remain unimplemented because we are in the process of revising deadlines.

Use Case: getAttendance

Use Case ID:	UC-100		
Use Case Name:	User Submits their attendance to a class		
Created By:	Michael Adams	Last Updated By:	2023/06/20
Date Created:	2023/06/12	Last Revision Date:	2023/06/20
Actors:	The Actors for this use case are the user and the system (MyFIU). The primary actor is the user because he/she will he request to submit their attendance. The secondary user will be the system (MyFIU) because it will complete the request and forward the response to the app / user.		
Description:	The user wants to submit their attendance so they will submit a request through the app and MyFIU will verify the request. After verification, the info will be sent to app and the attendance be recorded.		
Trigger:	The user must click "Submit Attendance" to initiate the request..		
Preconditions:	- The User must be signed in and validated. - The user must press "Submit Attendance".		
Postconditions:	- Once MyFIU has validated the attendance request, the user will be notified that the attendance was recorded. - If the request falls through the user will be notified to of error and the app will begin a new request in 5 seconds.		

Normal Flow:	1. User submits attendance request. 2. The App will display a loading screen. 3. Application will connect with MyFIU and submit an attendance requests 4. MyFIU will validate user information and requests. 5. Once the requests is approved, MyFIU will record the attendance. 6. The user will receive a message showing that their attendance was recorded. 7. User can quit the app once the attendance is complete.
Alternative Flows:	4a. in step 3 of the normal flow, if the application fails to connect to MyFIU: 1. Application will display error message to the user. 2. App will prompt the user to login to MyFIU again. 8. 4b. in step 6, If the user quits or loose internet connection during request. 1. App will submit a request to system. 2. If the submission falls through due to user input or internet connect an exception will be thrown. 3. The exception will prompt the user with an error message and suggest user action based on the exception.
Exceptions:	Exceptions to the attendance request

	2a. In step 3 of the normal flow if the user fails to connect to system. 1. Exception thrown. 2. Request canceled. 3. Error message displayed. 4. User prompted to try signing in again. 2b. in step 5, the system fails to record the attendance. 1. The app will login the error 2. Message displayed to the user 3. App will confirm that system is not offline or under maintenance. 4.
Includes:	Step 1-3 are required for the app to function. If the user fails to sign in the app will throw an exception and the user must login.
Frequency of Use:	1-5 times a week.
Special Requirements:	The user must have a cellular device with Android or IOS. The device must be update and connected to the FIU wifi. User must login to MyFIU.
Assumptions:	For the use sign-in case, an assumption can be made that: The user is enrolled to a course at FIU. The user can understand English or Spanish. The system has a record of the user's information, ie panther id or class schedule.
Notes and Issues:	1. Have a nice day.

Use Case: Validate Secure Localization

Use Case ID:	UC-101		
Use Case Name:	Validate Secure Localization		
Created By:	Carlos J Ibanez	**Last Updated By:**	Carlos J Ibanez
Date Created:	6/12/2023	**Last Revision Date:**	6/26/2023
Actors:	- Student: A registered student at the university - Professor: A faculty member or instructor at the university		
Description:	The University Assistance App is a mobile application developed to assist students and professors in various aspects of the class log-in system. To ensure secure access, the app requires students to be connected to the university's Wi-Fi network to log in.		
Trigger:	The user (either a student or professor) launches the University Assistance App on their mobile device.		

Preconditions:	1. The user must have a registered account with the university. 2. The user must have installed the University Assistance App on their mobile device. 3. The user(student) must be connected to the university's WI-FI Secure network to log-in
Postconditions:	1. The app successfully authenticates the user's credentials. 2. The user gains access to their personalized information and services within the app

Normal Flow:	1. The user(Student or professor) launches the University Assistance App on their mobile device.
	2. The app displays the FIU login screen.
	3. The user enters their registered username and password.
	4. The app validates the user's credentials with the university's authentication system.
	5. If the credentials are valid:
	    · The app grants access to the user's personalized information and services.
	    · The user can view their class schedule, announcements, and their relevant information.
	    · The app provides features such as class login, access to the history of attendance, and communication tools with other users (professor - student).
	    · The user can navigate through various sections and functionalities of the app.

Alternative Flows:	1. If the credentials are invalid:
	    · The app displays an error message indicating that the login credentials are incorrect.
	    · The user is prompted to re-enter their username and password.
	    · The process returns to step 3 (In the normal flow).
	2. If the user has forgotten their password:
	    · The app provides a "Forgot Password" option.
	    · The user selects this option and follows the password recovery process, which may involve email verification or answering security questions.
	    · Once the password is successfully reset, the user can proceed with the login process.

Exceptions:	1. If the user encounters technical issues with the app or experience network connectivity problems:
	    · The app displays an error message informing the user about the issue.
	    · The user can retry the login process once the issue is resolved.
	    · If the problem is related with the connectivity:
	        - Displays an image with instructions on troubleshooting connectivity problems.

Includes:	1. User Authentication: The app integrates with the university's authentication system to verify user credential. (Also check if the user is a student or professor) 2. Personalized Information and Service: The app provides access to individualized data and functionalities based on the user's role and profile
Frequency of Use:	The frequency of use depends on the individual user's needs and engagement with university-related activities. Users may log in to the app regularly to stay updated with their academic progress, course material, and university announcements.
Special Requirements:	1. Requires a stable and secure internet connection for all functionality(FIU_SecureWIFI). 2. Should be compatible with a range mobile device commonly used by students and professors(Apple & Android OS). 3. Should provide a user-friendly interface and efficient navigation to encourage regular usage. 4. Support appropriate security measures to protect user data and ensure privacy.
Assumptions:	1. Provide a comprehensive set of features and services relevant to students and professors. 2. Is well-integrated with the university's system, including class schedules, enrollment data, and grade records according to the attendance. 3. Provided with clear instructions on how to download, install, and set up the app. 4. Users are adequately informed about the app's functionality, benefits, and instructions on troubleshooting common issues. 5. The app undergoes regular maintained and updates to address bugs, improve performance, and introduce new features based on user feedback.
Notes and Issues:	1. Users may encounter occasional technical issues with the app, such as crashes or synchronization problems. 2. The app should provide a feedback or support channel for users to report issues and ensure prompt resolution. 3. Regular updates and bug fixes should be released to address known issues and improve the app's functionality.

Use Case: Calculate Attendance Grade

Use Case ID:	UC-104		
Use Case Name:	CalculateAtendanceGrade		
Created By:	Jose Amiot	Last Updated By:	Jose Amiot
Date Created:	6/17/23	Last Revision Date:	6/26/23
Actors:	- Professor: A faculty member or instructor at the university. - System: The software system that stores and manages attendance information.		
Description:	The University assistance app was allow created to allow professors to have full control of the student's attendance. This will allow them to calculate the respective grade that every student deserves by converting their attendance percentage to participation grade percentage that the professor can use for the grade book.		
Trigger:	The attendance percentage calculation is triggered automatically whenever there is a change or update in the attendance records for a class. This ensures that the attendance percentage is always up-to-date and reflects the most recent attendance data.		
Preconditions:	- The professor was successfully able to log in to their account using their credentials. - The application contains accurate information on the attendance records for the class. - The attendance records were updated the last time there was a class.		
Postconditions:	- The professor is able to utilize the attendance percentage of every student in the selected class to calculate the participation of a student in the class and perform decisions regarding grading. - The attendance information is still intact and updated in the system, in case of future usage.		

Normal Flow:	1- The professor logs into their account to access the attendance system using their unique credentials.
	2- The professor is being presented by the system with a dashboard containing the list of all their current classes.
	3- The professor selects the class they want to calculate the attendance percentage.
	4- The system retrieves the attendance records for the selected class.
	5- The system detects a change or update in the attendance records.
	6- The system automatically initiates the calculation of the attendance percentage for each student.
	7- The system calculates the attendance percentage by dividing the number of classes attended by the total number of scheduled class sessions and multiplying by 100 for each student.
	8- The system updates and stores the attendance percentage for each student.
	9- The system presents the updated attendance percentages to the professor in a clear and organized manner, such as a table or a list.
	10- The professor reviews the updated attendance percentages and can perform additional actions if necessary, such as exporting the data or sending notifications to students with low attendance.
	11- The use case ends.
Alternative Flows:	A. No Attendance Records:
]	1- If there are no attendance records available for the selected class, the system informs the professor that attendance information is not available.
	2- The professor can take appropriate action, such as manually recording attendance for future sessions or contacting the system administrator for assistance.
	3- The use case resumes in step 4.
	B. Modifying Attendance Records:

	1- If the professor identifies any errors or missing attendance records, they can modify the attendance information through the system's interface. 2- The system detects the changes and automatically recalculates the attendance percentages. 3- The use case resumes in step 4.
Exceptions:	1- **Invalid Credentials:** • If the professor enters invalid credentials during login, the system displays an error message and prompts the professor to re-enter the correct credentials. 2- **System Failure:** • If the attendance system experiences technical issues or crashes during the attendance percentage calculation, the system displays an error message and informs the professor about the problem. The professor can retry the calculation later or contact the system administrator for assistance. 3- **Incomplete Attendance Records:** • If the attendance records for the selected class are incomplete or contain missing information, the system displays a warning message to the professor and suggests reviewing or updating the attendance records before calculating the attendance percentage.
Includes:	1- (getAttenddance)(UC-100) 2- (validateSecureLocalization)(UC-101)

Frequency of Use:	Most likely one or twice around the end of the semester.
Special Requirements:	- The attendance system should be able to handle a large number of students and classes. It should be able to efficiently calculate attendance percentages even for classes with a high number of students and a large number of scheduled class sessions. - The attendance system must be capable of tracking and updating attendance records in real time.
Assumptions:	• The attendance system is already set up and configured with the necessary classes, student information, and scheduled class sessions. • The attendance records are accurately maintained in the system, including the attendance status (present, absent, late) for each class session. • The attendance system has the capability to track and update attendance records in real time. • The attendance records for each class are complete and do not contain any missing or erroneous data. • The professor has the necessary permissions and access rights to view and calculate attendance percentages for the selected class.
Notes and Issues:	1. Issue: The accuracy of the attendance percentage calculation heavily relies on the correctness of the attendance records. Any discrepancies or errors in recording student attendance may lead to inaccurate attendance percentages.

Appendix C Diary of meetings and tasks
Group Members: Michael Adams, Carlos Ibanez, Jose Amiot
Project Name: Panther Login

Outline: All members will meet on Each Thursday at 17:00. Members who do not attend the meeting must report the reason to the group. If a meeting does not occur it will be written in the project notes. Images of each meeting are attached to verify attendance of all members.

Meeting 1: Today is 2023/06/08, the time is 17:30.
Who Attended: Carlos C, Michael A. Jose could not make it due to in climate weather.

- Carlos and Michael are going over the team project requirements.
- We are figuring out how to fill-out the Gannt chart.
- Carlos has recommended we take photos each week to confirm attendance.
- Michael is working on filling out the Gannt chart and Carlos is reviewing what are the next steps for the next meeting.
- Carlos proposed we work on the Gannt chart sing Microsoft teams, so the both of us can edit the same file.
- We had trouble linking the chart to an online source, but we were able to complete half of the chart.
- Meeting concluded at 18:20.

Meeting 2: Today's date is 2023/06/12.

Today is Monday, the time is 16:30. All group members attended this meeting. The group went the Gantt chart and all members approved this week's assignment. Each member is to produce a use-case diagram for our application. Here is the use-case of each member:

- · Michael Adams- "User wants to submit attendance".
- · Carlos Ibanez – "Validate localization"
- · Jose Amiot – "Calculate attendance for student."

While discussing the use-case diagram, the group approved the following concept:
        When the user logins to the app, they are directed to MyFIU. After they loggin, the link will take the information from MyFIU to determine if the user is a professor or a student. The interface will be different between professor and student. The application will also import the user's class schedule and information.
The meeting has concluded, the time is 16:48.

Meeting 3: Today's date is 2023/06/22.

Today is Friday and the time is 13:20. All members are present, and the meeting is in-progress. Jose has let the team know that he is still in the process of completing his use-case chart which will be completed by next class. Jose is almost complete with his 1.5 of chapter 1. Michael has appended his use-case diagram to rename it "getAttendance". This defines the process of theuse-case and will be a standalone method for a uml Carlos said he is pretty good. He has been working very hard on the project.