Vision Document

**Software Design & Architecture**

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# 1 Document Version

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| **Version** | **Date** | **Description** | **Authors** |
| V1.0 | 2/21/2024 | Initial Vision Document | Waqas, Abdul Raffay & Kaif Anwar |
| V2.0 | 2/22/2024 | Refined Vision Document | Waqas |
| V3.0 | 13/03/2024 | Use Case Diagram, Domain Model and Fully Dressed Use Cases | Waqas, Abdul Raffay & Kaif Anwar |

# 2 Fully Dressed Use Cases

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| **Use Case ID** | UC-001 |
| **Use Case Name** | Augmented Reality (AR) Filters and Spaces |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Wants an engaging and interactive way to create and participate in AR-enhanced posts and virtual meetups. * Faculty/Staff: May be interested in using AR for educational purposes or campus events. * Service Providers: Could leverage AR spaces for virtual service offerings or promotional activities. |
| **Preconditions** | * The user has an active CampusConnect account. * The device used by the student supports AR functionalities. |
| **Success Guarantee** | * The AR Filters and Spaces feature enhances the user's engagement with the platform, providing an interactive and enjoyable experience. |
| **Main Success Scenario** | 1. Student selects Create Post option. 2. Students choose AR Filters and Spaces as the post type. 3. The system activates the device's AR functionality. 4. Students apply selected AR filters or create a new AR space. 5. Student completes the post and shares it on the CampusConnect feed. 6. Other students can view the AR-enhanced post and interact with it.   7. For AR Spaces:   * + 1. Student selects Create AR Space option.     2. Defines space parameters and invites others.     3. Users join AR Space and engage in virtual meetups. |
| **Extensions** | * 4a. If the device does not support AR, the system notifies the user and recommends alternative post types. * 5a. If the post creation is unsuccessful, the system provides an error message and allows the user to retry. |
| **Special Requirements** | * The AR feature requires devices with AR capabilities (e.g., ARKit for iOS, ARCore for Android). * A library of pre-designed AR filters and spaces is available for users to choose from. |
| **Technology and Data Variation List** | * Device-specific AR technology variations (e.g., ARKit for iOS, ARCore for Android). * Various AR filters and space designs are available in the system. |
| **Frequency of Occurrence** | * The AR Filters and Spaces feature is expected to be used frequently, especially during events, social interactions, and promotions. |
| **Miscellaneous** | * The success of this feature relies on the availability and adoption of AR-capable devices among the user base. * The system should continuously update the library of AR filters and spaces to keep the user experience fresh and engaging. |
| **Open Issues** | 1. Compatibility with Various AR Platforms 2. User Privacy and Security 3. AR Content Moderation 4. User Accessibility |

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| **Use Case ID** | UC-002 |
| **Use Case Name** | Voice-Controlled Navigation and Interaction |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Wants an accessible way to navigate the app and interact with content using voice commands for improved convenience. * Faculty/Staff: May find value in voice-controlled features for accessibility and efficient navigation. * Users with Disabilities: Have a significant interest in voice-controlled features to enhance accessibility. |
| **Preconditions** | * The user has an active CampusConnect account. * The device used by the student supports voice recognition capabilities. * Voice control feature is enabled in the user's CampusConnect settings. |
| **Success Guarantee** | * The Voice-Controlled Navigation and Interaction feature provides an accessible and efficient means for users to navigate and interact with the app using voice commands. |
| **Main Success Scenario** | 1. Student activates voice control within the CampusConnect app. 2. The system recognizes the voice command and awaits further instruction. 3. Student issues a voice command for a specific action (e.g., Navigate to Events). 4. The system interprets the command and navigates to the specified section (Events). 5. Student issues a voice command to interact with content (e.g., Like this post). 6. The system processes the command, and the specified interaction is executed. 7. Student can continue using voice commands to navigate and interact with various features within the app. |
| **Extensions** | * 2a. If the system fails to recognize the voice command, it prompts the user to repeat or provides alternative options. * 3a. If the specified action is not supported or unclear, the system asks for clarification or provides alternative actions. * 6a. If the interaction command is unsuccessful, the system notifies the user and allows for a reattempt. |
| **Special Requirements** | * A robust natural language processing (NLP) system is required for accurate interpretation of voice commands. * Voice control should support multiple languages to cater to a diverse user base. |
| **Technology and Data Variation List** | * Voice recognition technologies may vary based on the device's operating system and settings. * Integration with accessibility features on different devices, such as VoiceOver on iOS or TalkBack on Android. |
| **Frequency of Occurrence** | * The Voice-Controlled Navigation and Interaction feature is expected to be used frequently, especially by users seeking enhanced accessibility. |
| **Miscellaneous** | * The success of this feature depends on the accuracy and responsiveness of the voice recognition system. * Training materials and assistance should be provided to users unfamiliar with voice-controlled features. |
| **Open Issues** | 1. Security and Privacy 2. Diverse Pronunciations: 3. Integration with Other Features |

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| **Use Case ID** | UC-003 |
| **Use Case Name** | Project Collaboration Spaces |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Desires a dedicated space for collaborative project work, file sharing, and task management. * Faculty/Staff: May use the feature to oversee and support student-led projects, fostering a collaborative learning environment. * Service Providers: Could utilize collaboration spaces for offering project-related services or resources. * University Administration: Interested in promoting community-driven initiatives and tracking project outcomes. |
| **Preconditions** | * The user has an active CampusConnect account. * The project collaboration space has been initiated or joined by the student. |
| **Success Guarantee** | * The Project Collaboration Spaces feature provides an organized and efficient platform for community-driven project collaboration. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Project Collaboration section. 3. Student either joins an existing project space or initiates a new project space. 4. If initiating a new project space:    * Student defines project details, objectives, and invites collaborators. 5. Within the project space, students can:    * + Share project-related files.      + Collaboratively edit documents in real-time.      + Assign and manage tasks.      + Participate in discussion forums related to the project. 6. Faculty/Staff can monitor and provide support within the project space. 7. Service Providers may offer resources or services relevant to the project. 8. University Administration gains insights into community-driven initiatives and project outcomes. |
| **Extensions** | * 3a. If the student decides not to initiate or join a project space, they may explore other features within CampusConnect. * 5a. If the student encounters issues with file sharing or task management, the system provides error messages and troubleshooting options. |
| **Special Requirements** | * The project collaboration space should support real-time document editing, file sharing, and task management. * Integration with notification systems to alert users about project updates and deadlines. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Project-related data, including documents, tasks, and discussions. |
| **Frequency of Occurrence** | * The Project Collaboration Spaces feature is expected to be used frequently, especially during collaborative projects initiated by students. |
| **Miscellaneous** | * The success of this feature relies on active student participation and engagement in community-driven initiatives. * Regular updates and improvements to the collaboration space interface based on user feedback are essential. |
| **Open Issues** | 1. Explore potential challenges related to moderating project collaboration spaces to ensure adherence to university policies. 2. Investigate the scalability of the feature to accommodate a growing number of concurrent project spaces and users. 3. Address any potential issues related to project data security and privacy. |

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| **Use Case ID** | UC-004 |
| **Use Case Name** | Local Community Engagement |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to engage with local events, businesses, and news, fostering real-world connections within the community. * Faculty/Staff: May use the feature to promote or participate in local community initiatives. * Local Businesses: Interested in reaching out to the university community and promoting their services or events. * University Administration: Focused on enhancing the connection between the university and the local community. |
| **Preconditions** | * The user has an active CampusConnect account. * Location services are enabled on the user's device. |
| **Success Guarantee** | * The Local Community Engagement feature facilitates meaningful connections and interactions between students, faculty, and local businesses, enhancing the sense of community. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Local Community section. 3. Student views a curated list of local events, businesses, and news. 4. Student engages with local content by:  * Viewing event details and RSVPing. * Exploring information about local businesses. * Reading local news articles or announcements. * Participating in community discussions.  1. Local Businesses can:  * Post information about upcoming events or promotions. * Interact with students through comments and direct messages.  1. Faculty/Staff can participate in or promote local community initiatives. 2. University Administration gains insights into the level of community engagement. |
| **Extensions** | * 3a. If the student is not within the designated local area, the system prompts the user to explore community engagement features in their current location. |
| **Special Requirements** | * Integration with location-based services to provide accurate local content. * Moderation features to ensure the quality and appropriateness of local content. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Local event, business, and news data sourced from external APIs or databases. |
| **Frequency of Occurrence** | * The Local Community Engagement feature is expected to be used regularly, especially during community events and promotions. |
| **Miscellaneous** | * Regular updates to the local content database to ensure accuracy and relevance. * User feedback mechanisms to gather insights for continuous improvement. |
| **Open Issues** | 1. Investigate potential challenges related to moderating local content to ensure adherence to university policies. 2. Explore ways to incentivize local businesses to actively engage with the CampusConnect community. 3. Address any potential privacy concerns related to the use of location-based services. |

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| **Use Case ID** | UC-005 |
| **Use Case Name** | Smart Event Suggestions |
| **Scope** | Campus Connect |
| **Level** | Sub function |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Desires personalized event suggestions based on interests, past attendance, and network preferences. * Event Organizers: Interested in increased attendance and engagement for their events. * University Administration: Aims to enhance the overall student experience and promote campus events. |
| **Preconditions** | * The user has an active CampusConnect account. * The system has access to the user's event attendance history and network connections. |
| **Success Guarantee** | * The Smart Event Suggestions feature enhances the user's event discovery experience, increasing attendance and satisfaction. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Events section. 3. The system analyzes the user's interests, past attendance, and network preferences. 4. The system suggests personalized event recommendations based on the analysis. 5. Student views event suggestions and selects one for more details. 6. The system provides detailed information about the selected event. 7. Student decides to attend and RSVPs to the event. 8. Event Organizer receives event attendance data and engagement metrics. |
| **Extensions** | * 3a. If the system cannot access the user's attendance history or network connections, it provides generic event suggestions based on public popularity. * 5a. If the student does not find the suggested events interesting, the system refines future suggestions based on the user's feedback. |
| **Special Requirements** | * Integration with AI algorithms for analyzing user behavior and preferences. * An event recommendation engine that considers factors such as popularity, timing, and relevance. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Integration with external APIs or databases for event data. |
| **Frequency of Occurrence** | * The Smart Event Suggestions feature is expected to be used regularly, especially during event planning seasons. |
| **Miscellaneous** | * Regular updates and improvements to the recommendation algorithms based on user feedback. * User feedback mechanisms to gather insights for continuous improvement. |
| **Open Issues** | 1. Investigate potential challenges related to the accuracy of AI-based event suggestions. 2. Explore ways to encourage user feedback to enhance the recommendation algorithms. 3. Address any potential privacy concerns related to the use of personal data for event suggestions. |

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| **Use Case ID** | UC-006 |
| **Use Case Name** | Integrated Event Planning Tools |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Event Host |
| **Stakeholder and Interests** | * Event Host: Aims to efficiently plan, manage invitations, and engage with attendees for events within the app. * Attendees: Interested in receiving event details, updates, and having a seamless experience with event organizers. * University Administration: Focuses on facilitating smooth event organization and fostering community engagement. |
| **Preconditions** | * The event host has an active CampusConnect account. * An event has been created within the CampusConnect platform. |
| **Success Guarantee** | * The Integrated Event Planning Tools feature streamlines event planning processes, leading to successful and well-managed events. |
| **Main Success Scenario** | 1. Event Host logs in to CampusConnect. 2. Event Host navigates to the Event Planning Tools section. 3. Event Host selects the event they want to manage. 4. Within the event planning tools, the Event Host can:    * Manage event details, including date, time, and location.    * Send invitations to attendees through the app.    * Receive and manage RSVPs.    * Send event updates or announcements to attendees.    * Interact with attendees through in-app messaging.    * View attendance analytics and feedback. 5. Event Host successfully plans and manages the event, ensuring a positive experience for attendees. 6. Attendees receive updates, interact with the event host, and provide feedback within the app. 7. University Administration gains insights into event engagement and success metrics. |
| **Extensions** | * 3a. If the event host encounters issues with accessing the event planning tools, the system provides troubleshooting options. * 5a. If the event host decides to cancel the event, the system notifies attendees and updates event details accordingly. |
| **Special Requirements** | * In-app messaging and notification system for real-time communication with attendees. * Integration with event analytics tools for attendance tracking and feedback collection. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Integration with external APIs or databases for event data and analytics. |
| **Frequency of Occurrence** | * The Integrated Event Planning Tools feature is expected to be used regularly, especially during event planning and execution phases. |
| **Miscellaneous** | * Regular updates and improvements to the event planning tools based on user feedback. * User feedback mechanisms to gather insights for continuous improvement. |
| **Open Issues** | 1. Investigate potential challenges related to scalability for large-scale events. 2. Explore ways to enhance attendee engagement and participation through the integrated tools. 3. Address any potential privacy concerns related to event data and attendee interactions. |

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| **Use Case ID** | UC-007 |
| **Use Case Name** | Fully Customizable UI |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | User |
| **Stakeholder and Interests** | * User: Aims to personalize and customize the appearance of their profiles and feeds for a unique and enjoyable user experience. * University Administration: Interested in providing a platform that fosters individual expression and enhances user satisfaction. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports customizable UI features. |
| **Success Guarantee** | * The Fully Customizable UI feature enables users to personalize their profiles and feeds according to their preferences, providing a unique and satisfying user experience. |
| **Main Success Scenario** | 1. User logs in to CampusConnect. 2. User navigates to the Profile Settings or UI Customization section. 3. User selects customization options for:  * Profile theme and colors. * Font styles and sizes. * Background images or patterns. * Feed layout preferences.  1. User saves the customization settings. 2. The system applies the personalized UI settings to the user's profile and feeds. 3. User views and interacts with the platform using the customized UI. 4. University Administration observes increased user satisfaction and engagement. |
| **Extensions** | * 2a. If the system encounters issues loading customization options, the user is informed, and troubleshooting options are provided. * 4a. If the user decides to revert to default settings, the system applies the standard UI theme. |
| **Special Requirements** | * Robust UI customization tools that allow for a wide range of options. * Integration with a user-friendly interface to simplify the customization process. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of user-specific customization settings. |
| **Frequency of Occurrence** | * The Fully Customizable UI feature is expected to be used regularly as users seek to enhance their experience on the platform. |
| **Miscellaneous** | * Regular updates to the UI customization options based on user feedback. * User feedback mechanisms to gather insights for continuous improvement. |
| **Open Issues** | * Regular updates to the UI customization options based on user feedback. * User feedback mechanisms to gather insights for continuous improvement. |

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| **Use Case ID** | UC-008 |
| **Use Case Name** | Community-Driven Moderation |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | User |
| **Stakeholder and Interests** | * User: Aims to actively participate in content moderation, ensuring a positive and respectful community environment. * Moderators: Interested in leveraging community support for content moderation to maintain a healthy online atmosphere. * University Administration: Focused on fostering a safe and inclusive online community. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports community-driven moderation features. |
| **Success Guarantee** | * The Community-Driven Moderation feature establishes a transparent and fair system where users actively contribute to content moderation, ensuring a respectful and inclusive online community. |
| **Main Success Scenario** | 1. User logs in to CampusConnect. 2. User navigates to the Moderation Hub or equivalent section. 3. User views a list of reported content or flagged posts. 4. User reviews the reported content and decides to:  * Approve the content if it aligns with community guidelines. * Flag the content for further review by moderators. * Remove the content if it violates community guidelines.  1. Users earn moderation points or badges based on their contributions. 2. Moderators review flagged content and take appropriate actions. 3. University Administration monitors the effectiveness of community-driven moderation. |
| **Extensions** | * 2a. If the user encounters issues accessing the moderation tools, the system provides troubleshooting options. * 4a. If the user is uncertain about the content, they can skip or mark it for further review by moderators. |
| **Special Requirements** | * A transparent system that educates users on community guidelines and the moderation process. * Integration with a reporting system for users to flag inappropriate content. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of user moderation activities for tracking and reward purposes. |
| **Frequency of Occurrence** | * The Community-Driven Moderation feature is expected to be used regularly as users actively contribute to content moderation. |
| **Miscellaneous** | * Regular updates to the moderation system based on user feedback. * Recognition and rewards for users actively participating in community-driven moderation. |
| **Open Issues** | * Investigate potential challenges related to biased or unfair moderation by users. * Explore ways to prevent misuse of the moderation system or false reporting. * Address any concerns related to the transparency and accountability of the community-driven moderation process. |

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| **Use Case ID** | UC-009 |
| **Use Case Name** | Blockchain for Data Ownership |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | User |
| **Stakeholder and Interests** | * User: Aims to have ownership and control over their data, ensuring transparency and security. * University Administration: Interested in providing a secure and transparent data ownership system to build trust with users. |
| **Preconditions** | * The user has an active CampusConnect account. * The system has implemented blockchain technology for data ownership. |
| **Success Guarantee** | * The Blockchain for Data Ownership feature ensures that users have clear ownership and control over their data, enhancing transparency and security. |
| **Main Success Scenario** | 1. User logs in to CampusConnect. 2. User navigates to the Data Ownership or equivalent section. 3. Users view a detailed record of their data stored on the blockchain. 4. Users can control access to specific data elements, grant, or revoke permissions. 5. Changes made by the user are recorded and timestamped on the blockchain for transparency. 6. University Administration ensures that user data is securely stored, and access is controlled by the user. |
| **Extensions** | * 2a. If the user encounters issues accessing the data ownership tools, the system provides troubleshooting options. * 4a. If the user attempts to modify data that they do not have permission to change, the system provides an error message. |
| **Special Requirements** | * Implementation of blockchain technology for secure and transparent data storage. * User-friendly interface for users to understand and manage their data ownership settings. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of user data on the blockchain. |
| **Frequency of Occurrence** | * The Blockchain for Data Ownership feature is expected to be used periodically as users manage their data and permissions. |
| **Miscellaneous** | * Regular updates to the data ownership system based on user feedback. * Educational materials and communication to inform users about the benefits and processes of blockchain data ownership. |
| **Open Issues** | 1. Investigate potential challenges related to scalability with a growing user base. 2. Explore ways to ensure compliance with privacy regulations when implementing blockchain for data ownership. 3. Address any concerns related to the accessibility and usability of the data ownership tools. |

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| **Use Case ID** | UC-010 |
| **Use Case Name** | E-Learning Spaces |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | User |
| **Stakeholder and Interests** | * User: Aims to access and engage with e-learning modules or courses within the social platform for skill development. * Educators/Instructors: Interested in reaching a broader audience and delivering educational content through the social platform. * University Administration: Focused on enhancing the educational experience and providing diverse learning opportunities. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports integration with e-learning modules. |
| **Success Guarantee** | * The E-Learning Spaces feature provides users with convenient access to diverse e-learning content, fostering continuous learning and skill development. |
| **Main Success Scenario** | 1. User logs in to CampusConnect. 2. User navigates to the E-Learning Spaces section. 3. User views a catalog of available e-learning modules or courses. 4. User selects a specific module or course to enroll in. 5. The system displays the course content, including lessons, quizzes, and interactive elements. 6. User progresses through the e-learning content, completing lessons and assessments. 7. User may interact with instructors or peers through discussion forums or messaging. 8. Upon completion, the system records the user's progress and achievements. 9. Educators monitor course engagement and provide support as needed. 10. University Administration assesses the effectiveness of e-learning integration for educational goals. |
| **Extensions** | * 2a. If the user encounters issues accessing the e-learning spaces, the system provides troubleshooting options. * 5a. If the user faces technical issues during e-learning, the system offers support or redirects to relevant resources. |
| **Special Requirements** | * Integration with a variety of e-learning content types (videos, quizzes, interactive elements). * User-friendly interfaces for course navigation and engagement. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of user progress data within the e-learning modules. |
| **Frequency of Occurrence** | * The E-Learning Spaces feature is expected to be used regularly as users engage in continuous learning. |
| **Miscellaneous** | * Regular updates to the e-learning content catalog based on user feedback and educational trends. * Incentives or recognition for users who complete e-learning modules. |
| **Open Issues** | 1. Investigate potential challenges related to integrating diverse e-learning content. 2. Explore ways to encourage interaction and collaboration among users within e-learning spaces. 3. Address any concerns related to the accessibility and inclusivity of e-learning content. |

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| **Use Case ID** | UC-011 |
| **Use Case Name** | Campus Feed |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | Student: Aims to share updates, news, and engage with campus-specific content in real-time.  Clubs/Organizations: Interested in promoting events, news, and engaging with their target audience.  University Administration: Focused on fostering communication and community engagement within the campus. |
| **Preconditions** | The user has an active CampusConnect account.  The system supports the Campus Feed feature. |
| **Success Guarantee** | The Campus Feed feature provides a dynamic and engaging platform for students, clubs, and organizations to share and interact with campus-related content. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Campus Feed section. 3. Student views a real-time feed of updates, news, and posts from other students, clubs, and organizations. 4. Student can filter the feed based on academic departments, clubs, or interest groups. 5. Student posts updates, news, or engages with existing content by commenting or liking. 6. Clubs/Organizations post updates, events, or news on the feed to reach their target audience. 7. University Administration monitors the feed for any campus-wide announcements or important updates. |
| **Extensions** | * 2a. If the user encounters issues accessing the Campus Feed, the system provides troubleshooting options. * 5a. If a post violates community guidelines, the system provides moderation options and notifies relevant parties |
| **Special Requirements** | * Real-time updating of the feed to ensure the latest content is visible. * Robust filtering options for users to customize their feed based on preferences. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of real-time content updates within the Campus Feed. |
| **Frequency of Occurrence** | * The Campus Feed feature is expected to be used frequently, with users engaging in real-time updates and interactions. |
| **Miscellaneous** | * Regular updates and improvements to the Campus Feed interface based on user feedback. * Integration with notification systems to alert users about important posts or announcements. |
| **Open Issues** | 1. Investigate potential challenges related to moderation and content guidelines within the Campus Feed. 2. Explore ways to enhance user engagement and participation in the Campus Feed. 3. Address any concerns related to the scalability of the feature with a growing user base. |

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| **Use Case ID** | UC-012 |
| **Use Case Name** | Study Groups and Project Collaboration |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | Student: Aims to create or join study groups or project teams, collaborate on shared documents, and schedule study sessions.  Instructors: Interested in facilitating student collaboration and resource-sharing for academic success.  University Administration: Focused on providing tools for effective student collaboration and enhancing the learning experience. |
| **Preconditions** | The user has an active CampusConnect account.  The system supports the Study Groups and Project Collaboration feature. |
| **Success Guarantee** | The Study Groups and Project Collaboration feature provides a seamless and efficient platform for students to collaborate, share resources, and work on projects. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Study Groups or Project Collaboration section. 3. Student can create a new study group or project team or join an existing one. 4. Within the group, members can:    * Share resources such as documents, links, or study materials.    * Schedule study sessions or project meetings.    * Collaborate on documents or projects within the platform.    * Communicate through in-app messaging or discussion forums. 5. Instructors may monitor and provide guidance within study groups or project teams. 6. University Administration assesses the effectiveness of the feature in fostering collaboration and academic success. |
| **Extensions** | * 2a. If the user encounters issues accessing the Study Groups and Project Collaboration section, the system provides troubleshooting options. * 3a. If a user wants to leave a study group or project team, the system handles the exit process smoothly. |
| **Special Requirements** | * Integration with collaborative document editing tools. * In-app messaging and discussion forums for real-time communication. * Administrative tools for instructors to monitor and moderate groups. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Secure storage and retrieval of collaborative documents and resources. |
| **Frequency of Occurrence** | * The Study Groups and Project Collaboration feature is expected to be used regularly, especially during academic sessions. |
| **Miscellaneous** | * Regular updates and improvements to the collaboration tools based on user feedback. * Integration with notification systems to alert users about upcoming study sessions or project meetings. |
| **Open Issues** | 1. Investigate potential challenges related to group moderation and conflict resolution. 2. Explore ways to encourage active participation within study groups and project teams. 3. Address any concerns related to the scalability of the feature with a growing user base. |

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| **Use Case ID** | UC-013 |
| **Use Case Name** | Marketplace |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | Student: Aims to buy, sell, or exchange textbooks, electronics, and other study materials. Also interested in accessing services like tutoring, note-sharing, or carpooling.  Sellers/Buyers: Interested in a user-friendly platform to conduct transactions and exchange goods or services.  University Administration: Focused on facilitating a secure and reliable marketplace within the campus community. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Marketplace feature. |
| **Success Guarantee** | * The Marketplace feature provides a secure and efficient platform for students to buy, sell, or exchange goods and services within the campus community. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Marketplace section. 3. Student can:    * Browse listings for textbooks, electronics, and study materials.    * Create listings to sell or exchange items.    * Contact sellers for more information or negotiation.    * Make purchases or arrange exchanges directly within the platform. 4. The system records and confirms transactions, updating inventory and user accounts accordingly. 5. Sellers/Buyers can rate and provide feedback on transactions. 6. Students can also access services like tutoring, note-sharing, or carpooling through the Marketplace. 7. University Administration monitors and ensures compliance with marketplace guidelines. |
| **Extensions** | * 2a. If the user encounters issues accessing the Marketplace section, the system provides troubleshooting options. * 3a. If a transaction cannot be completed, the system offers resolution options or assistance. |
| **Special Requirements** | * Secure payment processing for transactions. * User-friendly interfaces for creating listings and browsing items or services. * A rating and feedback system to build trust within the community. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Secure storage and retrieval of transaction data. |
| **Frequency of Occurrence** | * The Marketplace feature is expected to be used regularly as students engage in buying, selling, or exchanging goods and services. |
| **Miscellaneous** | * Regular updates and improvements to the Marketplace interface based on user feedback. * Integration with notification systems to alert users about new listings or messages. |
| **Open Issues** | 1. Investigate potential challenges related to fraud prevention and security within the Marketplace. 2. Explore ways to enhance user engagement and participation in the Marketplace. 3. Address any concerns related to the scalability of the feature with a growing user base. |

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| **Use Case ID** | UC-014 |
| **Use Case Name** | Event Planning and Organization |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Event Organizer |
| **Stakeholder and Interests** | * Event Organizer: Aims to efficiently organize, promote, and manage campus events. * Event Attendees: Interested in staying informed about upcoming events, easily RSVPing, and receiving relevant notifications. * University Administration: Focused on providing tools for effective event management and enhancing campus engagement. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Event Planning and Organization feature. |
| **Success Guarantee** | * The Event Planning and Organization feature provides a comprehensive platform for event organizers to plan and manage events, while attendees can easily access event information and RSVP. |
| **Main Success Scenario** | 1. Event Organizer logs in to CampusConnect. 2. Event Organizer navigates to the Event Planning or equivalent section. 3. Event Organizer can:    * Create new events, providing details such as date, time, location, and description.    * Integrate with the academic calendar for scheduling compatibility.    * Promote events to specific target audiences or interest groups.    * Enable RSVP functionality for attendees to confirm their participation.    * Set up custom notifications for event updates or reminders.    * Attendees receive notifications about upcoming events based on their interests. 4. Attendees can easily RSVP through the platform and access event details. 5. University Administration monitors event engagement and success. |
| **Extensions** | * 2a. If the Event Organizer encounters issues accessing the Event Planning section, the system provides troubleshooting options. * 3a. If an event needs to be canceled or rescheduled, the Event Organizer can modify details accordingly. |
| **Special Requirements** | * Integration with the academic calendar for seamless scheduling. * User-friendly interfaces for event creation and RSVP functionality. * Customizable notification settings for attendees. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Secure storage and retrieval of event details and attendee information. |
| **Frequency of Occurrence** | * The Event Planning and Organization feature is expected to be used regularly as events are planned and attended throughout the academic year. |
| **Miscellaneous** | * Regular updates and improvements to the Event Planning interface based on user feedback. * Integration with notification systems to keep users informed about relevant events. |
| **Open Issues** | 1. Investigate potential challenges related to event promotion and attendance tracking. 2. Explore ways to enhance user engagement and participation in campus events. 3. Address any concerns related to the scalability of the feature with a growing user base. |

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| **Use Case ID** | UC-015 |
| **Use Case Name** | Campus Services |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to access campus services such as the library catalog, dining hall menus, shuttle schedules, and emergency contacts. * University Administration: Focused on providing a centralized and efficient platform for students to access campus services. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Campus Services feature. |
| **Success Guarantee** | * The Campus Services feature provides direct and efficient access to essential campus services, including real-time updates or changes. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student navigates to the Campus Services section. 3. Student can access various campus services such as:    * Library Catalog: Search for books, check availability, and place holds.    * Dining Hall Menus: View daily menus and special offerings.    * Shuttle Schedules: Check real-time schedules and routes. 4. Emergency Contacts: Access important contact information in case of emergencies. 5. The system provides real-time updates or changes to the services as needed. |
| **Extensions** | * 2a. If the user encounters issues accessing the Campus Services section, the system provides troubleshooting options. * 3a. If there are unexpected changes or disruptions to services, the system provides notifications and alternative solutions. |
| **Special Requirements** | * Integration with relevant campus databases for accurate and real-time information. * User-friendly interfaces for accessing different services seamlessly. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Integration with real-time data sources for accurate information. |
| **Frequency of Occurrence** | * The Campus Services feature is expected to be used regularly as students access various services throughout their campus life. |
| **Miscellaneous** | * Regular updates and improvements to the Campus Services interface based on user feedback. * Integration with notification systems to inform users about service changes or updates. |
| **Open Issues** | 1. Investigate potential challenges related to the integration of real-time data for certain services. 2. Explore ways to enhance the user experience and efficiency of accessing campus services. 3. Address any concerns related to the scalability of the feature with a growing user base. |

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| **Use Case ID** | UC-016 |
| **Use Case Name** | Mental Health and Wellness Support |
| **Scope** | University-wide |
| **Level** | Operational |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | - Student: Wants easy access to mental health resources and support services.  - Faculty: Interested in supporting student well-being for improved academic performance.  - Administration: Aims to create a healthy campus environment and reduce mental health-related incidents. |
| **Preconditions** | The student is logged into the platform and has navigated to the section dedicated to mental health and wellness resources. |
| **Success Guarantee** | Student accesses relevant mental health resources. |
| **Main Success Scenario** | 1. Student navigates to the mental health section of the platform.  2. Student browses available resources, including articles, videos, and support contacts.  3. System provide the available resources, including articles, videos, and support contacts to user.  4. If needed, student utilizes interactive tools such as mood trackers or relaxation exercises.  5. Student finds the resources helpful in managing their mental health and well-being. |
| **Extensions** | Student Requests Counseling Session:  - Student seeks immediate assistance and schedules a counseling session through the platform.  - Platform confirms the appointment and sends a notification to the student and the counselor.  - Student attends the counseling session either in-person or through virtual channels.  Emergency Mental Health Support:  - Student indicates an urgent need for mental health support.  - Platform provides immediate access to emergency contact numbers or crisis intervention services.  - Student connects with a counselor or support professional for immediate assistance. |
| **Special Requirements** | Confidentiality: Ensuring the privacy of students accessing mental health resources.  Accessibility: Making sure resources are easily accessible to students with diverse needs.  Training: Providing training for staff and volunteers involved in providing support services. |
| **Technology and Data Variation List** | - Various formats for resources (text, audio, video).  - Integration with existing university systems for user authentication and tracking. |
| **Frequency of Occurrence** | Regularly accessed by students seeking mental health support. |
| **Miscellaneous** | Collaboration with mental health professionals for resource development and support services. |
| **Open issues** | - How to ensure the accuracy and credibility of the mental health resources provided on the platform?  - What measures should be implemented to safeguard the privacy and confidentiality of students seeking mental health support?  - How to encourage students to actively engage with the mental health resources and support services offered?  - What strategies can be employed to address the varying mental health needs of a diverse student population?  - How to effectively promote the availability of mental health resources and encourage students to seek help when needed? |

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| **Use Case ID** | UC-017 |
| **Use Case Name** | Manage Class Schedule and Reminders |
| **Scope** | Individual student. |
| **Level** | Operational. |
| **Primary Actor** | Student. |
| **Stakeholder and Interests** | Students: Improved time management and academic performance.  Faculty: Increased student preparedness and engagement.  Administration: Enhanced student success and retention rates. |
| **Preconditions** | The student is logged into the platform and has previously entered their class schedule into the system. |
| **Success Guarantee** | Student effectively manages their class schedule and study reminders. |
| **Main Success Scenario** | 1. Student integrates their class schedule into the platform.  2. Student sets up study reminders or deadlines for assignments.  3. Platform suggests optimal study times and locations on campus.  4. Student receives timely notifications and reminders according to their preferences.  5. Student effectively manages their time and academic commitments. |
| **Extensions** | Conflict in Class Schedule:  - System detects a scheduling conflict for the student.  - Platform suggests alternative class timings or offers guidance on resolving the conflict.  - Student updates their schedule based on the suggested changes.  Assignment Submission Reminder:  - Student sets up reminders for assignment deadlines.  - Platform sends notifications to the student prior to the deadline.  - If the assignment is submitted late, the platform updates the status and alerts the student accordingly. |
| **Special Requirements** | Integration: Seamless integration with university's academic systems for accurate schedule updates.  Customization: Providing options for students to personalize their reminder settings.  Accessibility: Ensuring mobile compatibility for on-the-go access. |
| **Technology and Data Variation List** | - Integration with various calendar applications.  - Compatibility with different devices and operating systems. |
| **Frequency of Occurrence** | Accessed regularly throughout the academic term by students managing their schedules. |
| **Miscellaneous** | Collaboration with academic advisors for guidance on schedule management. |
| **Open issues** | - How to handle conflicts or discrepancies between the class schedule integrated into the platform and the official university schedule?  - What measures can be implemented to ensure that study reminders are delivered to students consistently and reliably?  - How to accommodate last-minute changes or updates to class schedules and assignments?  - What strategies can be employed to assist students in prioritizing their study tasks and managing their time effectively?  - How to address technical issues or glitches that may arise with the scheduling and reminder system? |

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| **Use Case ID** | UC-018 |
| **Use Case Name** | Access Peer Tutoring and Academic Support. |
| **Scope** | University-wide. |
| **Level** | Operational. |
| **Primary Actor** | Student. |
| **Stakeholder and Interests** | - Student: Seeks academic assistance and collaboration for improved learning outcomes.  - Faculty: Supports supplemental learning resources for students.  - Administration: Fosters a culture of collaboration and academic success. |
| **Preconditions** | The student is logged into the platform and has accessed the peer tutoring section of the platform. |
| **Success Guarantee** | Student receives academic support and fosters peer collaboration. |
| **Main Success Scenario** | 1. Student accesses the peer tutoring section of the platform.  2. Student offers or seeks academic assistance in various subjects.  3. Student schedules tutoring sessions based on their needs and availability.  4. Peer tutor provides assistance, and student rates the experience for quality assurance.  5. Student gets benefits from peer collaboration and academic support. |
| **Extensions** | Unsatisfactory Tutoring Session:  - Student rates a tutoring session as unsatisfactory.  - Platform prompts the student to provide feedback on the session.  - Peer tutor receives feedback and may be provided additional training or support as needed.  Additional Resource Request:  - Student requests supplementary learning materials or resources.  - Platform provides access to relevant study guides, practice exams, or tutorial videos. |
| **Special Requirements** | - Quality Assurance: Implement a rating system to ensure the reliability of peer tutoring.  - Support: Provide training and ongoing support for peer tutors.  - Accessibility: Offer a user-friendly interface for easy navigation. |
| **Technology and Data Variation List** | - Integration with scheduling tools for appointment management.  - Compatibility with various devices and internet browsers. |
| **Frequency of Occurrence** | As needed, based on student requests and availability. |
| **Miscellaneous** | Collaboration with academic departments for tutor training and resource development. |
| **Open issues** | - How to maintain the quality and reliability of peer tutoring services offered through the platform?  - What measures can be implemented to ensure that peer tutors are adequately trained and equipped to assist students effectively?  - How to incentivize student participation in peer tutoring and encourage students to seek help when needed?  - What strategies can be employed to facilitate peer collaboration and knowledge-sharing among students?  - How to address potential conflicts or disagreements between peer tutors and students during tutoring sessions? |

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| **Use Case ID** | UC-019 |
| **Use Case Name** | Receives Academic and Career Guidance |
| **Scope** | Individual student. |
| **Level** | Strategic. |
| **Primary Actor** | Academic Advisor. |
| **Stakeholder and Interests** | - Student: Desires tailored guidance for academic and career success.  - Faculty: Aims to improve student advising and academic planning.  - Administration: Focuses on enhanced student retention and alumni success rates. |
| **Preconditions** | The student is logged into the platform and has provided their academic interests, performance, and career goals to the system. |
| **Success Guarantee** | Student receives personalized recommendations for academic and career paths. |
| **Main Success Scenario** | 1. Students access the personalized advising section of the platform.  2. They input their academic interests, performance, and career goals.  3. The system generates personalized recommendations, including course suggestions and internship opportunities.  4. Students receive guidance and support from academic advisors based on their individual needs.  5. They make informed decisions regarding their academic and career paths. |
| **Extensions** | Career Exploration Guidance:  - Student seeks advice on exploring different career paths.  - Academic advisor conducts career assessments and provides guidance on potential career options.  - Platform offers access to career exploration tools and resources.  Internship Opportunity Recommendation:  - System identifies relevant internship opportunities based on the student's academic background and career interests.  - Academic advisor reviews and recommends suitable internship programs to the student. |
| **Special Requirements** | Personalization: Utilizing AI algorithms for accurate recommendations.  Confidentiality: Ensuring the privacy of student information and advising sessions.  Integration: Seamless integration with university's academic and career services systems. |
| **Technology and Data Variation List** | Integration with student information systems for academic records.  Compatibility with various devices and operating systems.  AI algorithms for personalized recommendations. |
| **Frequency of Occurrence** | Scheduled advising sessions supplemented by on-demand support. |
| **Miscellaneous** | Collaboration with industry partners for internship opportunities and career guidance resources. |
| **Open issues** | - How to develop an AI-driven recommendation system that accurately assesses students' academic interests, performance, and career goals?  - What measures can be implemented to ensure the privacy and security of student data used for personalized advising?  - How to provide personalized academic and career guidance that is inclusive and responsive to the diverse needs of students?  - What resources and training are required to support academic advisors in providing effective personalized advising services?  - How to evaluate the effectiveness and impact of personalized advising on students' academic and career outcomes? |

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| **Use Case ID** | UC-020 |
| **Use Case Name** | Conduct Community Polls and Surveys. |
| **Scope** | University-wide. |
| **Level** | Strategic. |
| **Primary Actor** | Student Government or Administration. |
| **Stakeholder and Interests** | - Student Government/Administration: Seeks feedback from the university community for continuous improvement.  - Faculty: Interested in feedback on teaching methods and curriculum.  - Administration: Focuses on continuous improvement of campus services and facilities. |
| **Preconditions** | Student logged into the platform and has access to the section where community polls and surveys are conducted. |
| **Success Guarantee** | Feedback gathered from the university community to inform decision-making and improve the campus experience. |
| **Main Success Scenario** | 1. Student Government or Administration creates polls or surveys on various topics.  2. They distribute the surveys to the university community through the platform.  3. Students participate in the surveys and provide feedback.  4. The system collects and analyzes survey responses to identify trends and areas for improvement.  5. Based on the feedback, relevant actions are taken to address concerns and enhance the campus experience. |
| **Extensions** | Low Survey Participation:  - Student Government/Administration notices low participation in a survey.  - Platform sends reminders to students encouraging them to participate.  - Student Government/Administration may offer incentives or rewards to increase participation.  Technical Issues with Survey Submission:  - Student encounters technical difficulties while attempting to submit a survey.  - Platform notifies IT support of the issue and provides troubleshooting steps to the student.  - IT support resolves the technical issue promptly to ensure smooth survey participation. |
| **Special Requirements** | Anonymity: Ensuring survey responses are anonymous to encourage honest feedback.  Transparency: Communicating survey results and actions taken in response to feedback.  Engagement: Promoting survey participation through incentives or rewards. |
| **Technology and Data Variation List** | - Integration with survey tools for creating and distributing surveys.  - Compatibility with various devices and internet browsers. |
| **Frequency of Occurrence** | Regularly conducted surveys to gather feedback from the university community. |
| **Miscellaneous** | Collaboration with student organizations for survey topic selection and promotion. |
| **Open issues** | - How to design surveys and polls that effectively capture the feedback and opinions of the university community?  - What measures can be implemented to increase survey participation rates and ensure representative sample sizes?  - How to analyze and interpret survey data to derive actionable insights and inform decision-making?  - What strategies can be employed to address potential biases or inaccuracies in survey responses?  - How to communicate survey results and findings to the university community in a transparent and accessible manner? |

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| **Use Case ID** | UC-021 |
| **Use Case Name** | Class Schedule Integration and Study Reminders |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | 1. Student: Interested in effectively managing their academic schedule, receiving reminders for assignments, and optimizing study times. 2. Faculty/Staff: May benefit from improved student organization and engagement with coursework. 3. Administrators: Interested in enhancing student success rates through better time management and study habits. |
| **Preconditions** | 1. The user has an active CampusConnect account. 2. The user's academic institution provides access to class schedules through an electronic format. |
| **Success Guarantee** | Students effectively manage their class schedules, receive timely reminders for assignments and deadlines, and benefit from suggestions for optimal study times and locations. |
| **Main Success Scenario** | 1. Student navigates to the Schedule Integration section of the platform. 2. Student selects the option to integrate their class schedule. 3. The system prompts the student to input or import their class schedule, either manually or through supported file formats. 4. The platform parses the schedule and adds it to the student's profile. 5. Student sets up study reminders or deadlines for assignments by selecting relevant classes or assignments from their schedule. 6. The system sends reminders to the student based on their configured preferences. 7. Optionally, the platform suggests optimal study times and quiet locations on campus based on the student's schedule and historical usage data. |
| **Extensions** | * 3a. If the class schedule format is unsupported, the system notifies the user and provides instructions or alternatives for manual entry. * 5a. If setting up reminders or deadlines fails, the system provides an error message and allows the user to retry. |
| **Special Requirements** | 1. Access to electronic class schedules provided by the academic institution. 2. Integration with calendar formats commonly used by educational institutions. 3. User-friendly interface for manual entry of schedules. |
| **Technology and Data Variation List** | 1. Integration with various academic institution systems or calendar formats. 2. Compatibility with different operating systems and devices. |
| **Frequency of Occurrence** | This feature is expected to be used frequently, especially during the start of each academic term and when students have assignments or exams approaching. |
| **Miscellaneous** | 1. Integration with existing calendar apps or platforms may enhance user experience. 2. The feature may include customization options for study preferences and reminders. |
| **Open Issues** | * Compatibility with different academic institution systems and calendar formats needs to be thoroughly tested. * User feedback regarding the effectiveness of study suggestions and reminders needs to be collected and analyzed.   Top of Form |

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| **Use Case ID** | UC-022 |
| **Use Case Name** | Campus Navigation and Room Finder |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student, Visitor |
| **Stakeholder and Interests** | * Student: Interested in easily navigating the campus to find classrooms, facilities, and event locations. * Visitor: Interested in efficiently locating specific areas or facilities within the campus. |
| **Preconditions** | * The user has an active CampusConnect account or access to the campus map feature as a visitor. * The campus map data is accurately maintained and up-to-date. |
| **Success Guarantee** | Students and visitors can effectively navigate the campus, locate specific classrooms, facilities, or event locations, and benefit from an immersive AR experience if available. |
| **Main Success Scenario** | 1. User accesses the campus map feature within CampusConnect. 2. User inputs the desired location or selects from a list of available destinations, such as classrooms, facilities, or event locations. 3. The system displays an interactive map of the campus, highlighting the selected destination and providing directional guidance. 4. Optionally, if AR functionality is enabled, the system overlays AR markers or directions on the user's device screen for a more immersive navigation experience. 5. User follows the directions provided by the system to reach the destination. |
| **Extensions** | * 2a. If the desired location is not found, the system prompts the user to refine their search criteria or provides alternative suggestions. * 4a. If AR functionality is disabled or unavailable, the system proceeds with standard map navigation without AR overlays. |
| **Special Requirements** | * Accurate and regularly updated campus map data. * Integration with AR technology for augmented reality navigation. * Compatibility with various devices and operating systems for both standard and AR-enabled navigation. |
| **Technology and Data Variation List** | * ntegration with campus map databases or GIS (Geographic Information Systems) platforms. * Support for ARKit for iOS and ARCore for Android if AR functionality is implemented. |
| **Frequency of Occurrence** | This feature is expected to be used frequently, especially during the start of each academic term and during campus events. |
| **Miscellaneous** | User feedback regarding the effectiveness and usability of the navigation feature, including AR functionality, should be collected and considered for future enhancements. |
| **Open Issues** | * Testing and optimization of AR functionality to ensure a seamless and immersive navigation experience. * Consideration of accessibility features to accommodate users with disabilities in navigation assistance. |

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| **Use Case ID** | UC-023 |
| **Use Case Name** | Skill-Sharing and Workshop Platform |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in both offering and signing up for workshops and skill-sharing sessions covering a wide range of topics. * Faculty/Staff: May contribute expertise or support in organizing workshops. * Administrators: Interested in fostering a sense of community and providing opportunities for personal and professional development. |
| **Preconditions** | * The user has an active CampusConnect account. * Workshops and skill-sharing sessions are organized and available on the platform. |
| **Success Guarantee** | Students can easily offer and sign up for workshops and skill-sharing sessions, promoting collaboration, learning, and personal growth within the campus community. |
| **Main Success Scenario** | 1. User accesses the Skill-Sharing and Workshop Platform within CampusConnect. 2. User browses available workshops and skill-sharing sessions, categorized by topics such as academic skills, hobbies, and life skills. 3. User selects a workshop or session to either offer or sign up for. 4. If offering a workshop:   -User provides details such as topic, description, date, time, and any prerequisites.  -User submits the workshop for approval by administrators or moderators.   1. If signing up for a workshop:   User registers for the workshop, providing any necessary information or confirming attendance.   1. The system confirms the workshop registration and provides reminders as the workshop date approaches. |
| **Extensions** | * 4a. If offering a workshop, and the submission does not meet requirements, the system notifies the user of necessary adjustments before resubmission. * 5a. If signing up for a workshop, and the workshop reaches maximum capacity, the system notifies the user and may offer alternatives or waitlist options. |
| **Special Requirements** | * User-friendly interface for workshop submission and registration. * Moderation and approval process for workshop submissions to ensure quality and relevance. * Integration with calendar and reminder functionalities for workshop scheduling and attendance tracking. |
| **Technology and Data Variation List** | * Integration with scheduling and calendar APIs to manage workshop dates and times. * Support for user profiles to track workshop history and interests for personalized recommendations. |
| **Frequency of Occurrence** | Workshops and skill-sharing sessions may occur regularly, depending on student interest and availability of facilitators. |
| **Miscellaneous** | * Feedback mechanisms should be in place for participants to provide reviews and ratings for workshops attended. * The platform may include features for virtual workshops or hybrid formats to accommodate varying preferences and circumstances. |
| **Open Issues** | * Development of mechanisms to ensure workshop quality and relevance, including moderation and feedback loops. * Consideration of incentives or rewards for workshop facilitators to encourage participation and contribution to the platform. |

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| **Use Case ID** | UC-024 |
| **Use Case Name** | Sustainability Initiatives |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in participating in and learning about sustainability efforts on campus. * Faculty/Staff: May initiate or support sustainability initiatives and events. * Administrators: Interested in promoting campus sustainability and fostering a culture of environmental awareness. |
| **Preconditions** | * The user has an active CampusConnect account. * Sustainability initiatives, events, and competitions are organized and available on the platform. |
| **Success Guarantee** | Students are informed about campus sustainability efforts, engaged in related events and competitions, and have a platform for sharing ideas and projects. |
| **Main Success Scenario** | 1. User accesses the Sustainability Initiatives section within CampusConnect. 2. User browses through featured initiatives, events, and competitions focused on environmental awareness. 3. User participates in relevant initiatives, registers for events, or joins competitions. 4. User contributes ideas or projects related to sustainability, sharing them with the campus community. |
| **Extensions** | 3a. If registration for an event or competition is required, the system guides the user through the registration process. |
| **Special Requirements** | * Platform features for promoting sustainability initiatives, events, and competitions. * Mechanisms for user engagement and contribution, such as idea-sharing and project collaboration tools. |
| **Technology and Data Variation List** | * Integration with event management systems for organizing sustainability-related events. * Support for user-generated content and collaboration features for sharing ideas and projects. |
| **Frequency of Occurrence** | Sustainability initiatives and events may occur regularly throughout the academic year, with competitions held periodically. |
| **Miscellaneous** | * Feedback mechanisms should be in place for participants to provide input on initiatives and events. * Collaboration with campus sustainability offices or committees may enhance the effectiveness of the platform. |
| **Open Issues** | * Ensuring diverse representation and inclusion in sustainability efforts and initiatives. * Consideration of incentives or recognition for active participants in sustainability projects. |

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| **Use Case ID** | UC-025 |
| **Use Case Name** | Campus News and Achievements |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student , Faculty/Staff |
| **Stakeholder and Interests** | * Student: Interested in staying informed about campus news, achievements, and research breakthroughs. * Faculty/Staff: May contribute to campus news or have achievements highlighted. * Administrators: Interested in promoting campus achievements and fostering a sense of community. |
| **Preconditions** | * The user has an active CampusConnect account. * Campus news, student and faculty achievements, and research breakthroughs are regularly updated and available on the platform. |
| **Success Guarantee** | Students and faculty/staff members are informed about campus news, achievements, and research breakthroughs, fostering a sense of community and celebrating successes together. |
| **Main Success Scenario** | 1. User accesses the Campus News and Achievements section within CampusConnect. 2. User browses through recent news articles, student and faculty achievements, and research breakthroughs. 3. User engages with content by reading articles, liking, commenting, or sharing relevant news and achievements. |
| **Extensions** | None |
| **Special Requirements** | * Integration with news sources, institutional communication channels, and achievement databases for gathering relevant content. * User-friendly interface for browsing and interacting with news and achievements. |
| **Technology and Data Variation List** | * Integration with content management systems for publishing news articles and achievements. * Support for social media sharing and engagement features. |
| **Frequency of Occurrence** | Campus news and achievements are updated regularly, with new content published periodically. |
| **Miscellaneous** | * Consideration of privacy settings for achievements and recognition, allowing users to control visibility if desired. * Collaboration with campus communication offices or departments may enhance the accuracy and relevance of news content. |
| **Open Issues** | * Ensuring diverse representation and inclusivity in news coverage and achievement recognition. * Feedback mechanisms should be in place for users to provide input on the types of news and achievements they are interested in. |

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| **Use Case ID** | UC-026 |
| **Use Case Name** | Mental Health and Wellness Support |
| **Scope** | CampusConnect |
| **Level** | Operational |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | - Student: Wants easy access to mental health resources and support services.  - Faculty: Interested in supporting student well-being for improved academic performance.  - Administration: Aims to create a healthy campus environment and reduce mental health-related incidents. |
| **Preconditions** | The student is logged into the platform and has navigated to the section dedicated to mental health and wellness resources. |
| **Success Guarantee** | Student accesses relevant mental health resources. |
| **Main Success Scenario** | 1. Student navigates to the mental health section of the platform.  2. Student browses available resources, including articles, videos, and support contacts.  3. System provide the available resources, including articles, videos, and support contacts to user.  4. If needed, student utilizes interactive tools such as mood trackers or relaxation exercises.  5. Student finds the resources helpful in managing their mental health and well-being. |
| **Extensions** | Student Requests Counseling Session:  - Student seeks immediate assistance and schedules a counseling session through the platform.  - Platform confirms the appointment and sends a notification to the student and the counselor.  - Student attends the counseling session either in-person or through virtual channels.  Emergency Mental Health Support:  - Student indicates an urgent need for mental health support.  - Platform provides immediate access to emergency contact numbers or crisis intervention services.  - Student connects with a counselor or support professional for immediate assistance. |
| **Special Requirements** | Confidentiality: Ensuring the privacy of students accessing mental health resources.  Accessibility: Making sure resources are easily accessible to students with diverse needs.  Training: Providing training for staff and volunteers involved in providing support services. |
| **Technology and Data Variation List** | - Various formats for resources (text, audio, video).  - Integration with existing university systems for user authentication and tracking. |
| **Frequency of Occurrence** | Regularly accessed by students seeking mental health support. |
| **Miscellaneous** | Collaboration with mental health professionals for resource development and support services. |
| **Open issues** | - How to ensure the accuracy and credibility of the mental health resources provided on the platform?  - What measures should be implemented to safeguard the privacy and confidentiality of students seeking mental health support?  - How to encourage students to actively engage with the mental health resources and support services offered?  - What strategies can be employed to address the varying mental health needs of a diverse student population?  - How to effectively promote the availability of mental health resources and encourage students to seek help when needed? |

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| **Use Case ID** | UC-027 |
| **Use Case Name** | Virtual Campus Tours |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student, Visitor |
| **Stakeholder and Interests** | * Prospective Student: Interested in exploring the campus virtually before applying or enrolling. * New Student: Interested in familiarizing themselves with the campus layout and facilities before   starting their academic journey.   * Campus Tour Guides: May provide content or assistance in creating virtual tours. * Administrators: Interested in providing a comprehensive and accessible campus tour experience. |
| **Preconditions** | * The user has access to CampusConnect's virtual tour feature. * Virtual tour content, including 360-degree videos or VR experiences, is available for different areas of the campus. |
| **Success Guarantee** | Prospective and new students can explore the campus virtually, gaining familiarity with campus layout and facilities, and making informed decisions about enrollment. |
| **Main Success Scenario** | 1. User accesses the Virtual Campus Tours section within CampusConnect. 2. User selects a specific area of interest or a predefined tour route. 3. The system displays virtual tour content, such as 360-degree videos or VR experiences, allowing the user to explore the selected area. 4. User navigates through the virtual tour, interacting with points of interest and accessing additional information about campus facilities and resources. 5. Optionally, the system provides interactive elements, such as guided tours or information overlays, to enhance the user experience. |
| **Extensions** | None |
| **Special Requirements** | * High-quality virtual tour content, including 360-degree videos or VR experiences, for different areas of the campus. * Integration with VR devices or platforms for immersive virtual tour experiences. |
| **Technology and Data Variation List** | * Support for various devices and platforms, including desktop computers, mobile devices, and VR headsets. * Integration with campus maps and facility databases for providing additional information during the virtual tour. |
| **Frequency of Occurrence** | Prospective and new students may access virtual campus tours throughout the year, with increased activity during enrollment periods. |
| **Miscellaneous** | * Collaboration with campus tour guides or student ambassadors to ensure accurate and engaging virtual tour content. * Consideration of accessibility features to accommodate users with disabilities in virtual tour experiences. |
| **Open Issues** | * Ensuring the scalability and sustainability of virtual tour content creation and maintenance. * Feedback mechanisms should be in place for users to provide input on virtual tour experiences and suggest improvements. |

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| **Use Case ID** | UC-028 |
| **Use Case Name** | Carpooling and Ride-Share Board |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in finding or offering rides for commuting to and from campus. * Faculty/Staff: May participate in carpooling to reduce environmental impact and transportation costs. * Administrators: Interested in promoting sustainable transportation options and reducing campus traffic congestion. |
| **Preconditions** | * The user has an active CampusConnect account. * Ride-sharing functionality is available on the platform. |
| **Success Guarantee** | Students and faculty/staff members can find or offer rides for commuting to and from campus, promoting sustainability and reducing transportation costs. |
| **Main Success Scenario** | 1. User accesses the Carpooling and Ride-Share Board within CampusConnect. 2. User selects the option to find or offer a ride. 3. If finding a ride:    * User specifies the desired route, time, and any preferences for drivers or passengers.    * The system displays available ride-sharing options matching the user's criteria.    * User selects a preferred option and contacts the driver or passenger to arrange details. 4. If offering a ride:    * User provides details such as route, departure time, and available seats.    * The system posts the ride offer on the ride-share board for other users to see and respond to.    * User communicates with interested passengers to finalize arrangements. |
| **Extensions** | 3a. No Available Matches:  If there are no available rides matching the user's criteria, the system provides alternative transportation options such as public transit schedules, shuttle services, or car rental services.  3b. Real-Time Ride Updates:  Users may receive real-time updates about ride availability, changes in departure times, or cancellations. The system notifies users promptly to avoid inconvenience.  4a. Additional Ride Offers:  After posting a ride offer, the system prompts the user to confirm availability and update the offer if necessary. The user may adjust departure times, pickup locations, or the number of available seats.  4b. Ride Confirmation and Coordination:  Once a user expresses interest in a ride offer, the system facilitates communication between the driver and passenger(s) to finalize ride details, such as meeting locations and departure times.  4c. Payment Integration:  If users agree to share transportation costs, the system may integrate payment features to facilitate transactions securely. Users can split costs or pay the driver directly through the platform.  5a. Feedback and Ratings:  After completing a ride, users have the option to provide feedback and ratings for the driver and fellow passengers. This feedback helps maintain ride quality and safety standards on the platform. |
| **Special Requirements** | * User-friendly interface for posting and browsing ride-sharing offers and requests. * Mechanisms for verifying user identities and ensuring ride safety. |
| **Technology and Data Variation List** | * Integration with mapping and routing services for calculating optimal routes and estimating travel times. * Support for communication channels, such as messaging or chat, for coordinating ride-sharing arrangements. |
| **Frequency of Occurrence** | Ride-sharing activity may vary depending on factors such as class schedules, events, and transportation availability. |
| **Miscellaneous** | * Consideration of incentives or rewards for active participation in ride-sharing to encourage adoption and usage. * Collaboration with campus transportation services or sustainability offices to promote and support ride-sharing initiatives. |
| **Open Issues** | * Ensuring user privacy and security in ride-sharing arrangements, including mechanisms for reporting and addressing safety concerns. * Feedback mechanisms should be in place for users to provide input on ride-sharing experiences and suggest improvements. |

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| **Use Case ID** | UC-029 |
| **Use Case Name** | Gamification and Rewards |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in engaging with gamification elements and earning rewards for participation. * Faculty/Staff: May facilitate gamified activities and monitor student engagement. * Administrators: Interested in promoting student engagement and fostering a sense of community through gamification. |
| **Preconditions** | * The user has an active CampusConnect account. * Gamification elements, such as points, badges, and rewards, are integrated into the platform. |
| **Success Guarantee** | Students are motivated to participate and engage with the platform through gamification elements, earning rewards for their contributions and achievements. |
| **Main Success Scenario** | 1. User accesses the Gamification and Rewards section within CampusConnect. 2. User participates in various activities, such as contributing to forums, attending events, or achieving academic milestones. 3. The system awards points or badges to the user based on their participation and achievements. 4. User accumulates points and badges, tracking their progress and achievements on the platform. 5. Optionally, the system provides rewards or perks that users can redeem using their accumulated points. |
| **Extensions** | 3a. Insufficient Points for Redemption:  If a user attempts to redeem rewards but does not have enough points, the system notifies the user and provides options to earn more points through additional activities.  4a. Unlocking Achievements:  As users accumulate points and engage with the platform, they may unlock achievements or levels. The system notifies users when they unlock new achievements, motivating them to continue participating.  5a. Redeeming Rewards:  When users accumulate enough points, they may redeem rewards or perks offered by the platform. The system guides users through the redemption process, ensuring they receive their rewards promptly.  5b. Reward Fulfillment Issues:  If there are any issues with fulfilling rewards, such as stock shortages or technical difficulties, the system notifies affected users and provides alternatives or compensations.  5c. Special Events or Challenges:  The platform may host special events or challenges where users can earn bonus points or exclusive rewards. The system notifies users about these events and tracks their progress as they participate. |
| **Special Requirements** | * Integration with gamification frameworks or platforms for implementing points, badges, and rewards systems. * Mechanisms for tracking user participation and awarding points or badges accordingly. |
| **Technology and Data Variation List** | * Support for customization of gamification elements, such as points thresholds and badge criteria. * Integration with campus services or vendors for providing rewards or perks to users. |
| **Frequency of Occurrence** | Gamification activities and rewards may be ongoing, with new opportunities introduced regularly to maintain engagement. |
| **Miscellaneous** | * Consideration of inclusivity and accessibility in gamification design to ensure all students can participate and benefit. * Collaboration with student organizations or clubs to design and implement gamified activities that align with student interests. |
| **Open Issues** | * Ensuring fairness and transparency in the awarding of points and badges, with clear criteria and guidelines for participation. * Feedback mechanisms should be in place for users to provide input on gamification features and suggest improvements. |

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| **Use Case ID** | UC-030 |
| **Use Case Name** | Personalized Academic and Career Advising |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in receiving personalized academic and career advice tailored to their interests, performance, and goals. * Faculty/Staff: May provide guidance and support in academic and career advising. * Career Services: Interested in offering personalized resources and opportunities for student career development. |
| **Preconditions** | * The user has an active CampusConnect account. * AI-driven advising capabilities are integrated into the platform. |
| **Success Guarantee** | Students receive personalized academic and career advice, including course recommendations, internship opportunities, and career planning resources, enhancing their academic and career success. |
| **Main Success Scenario** | 1. User accesses the Personalized Academic and Career Advising feature within CampusConnect. 2. User provides information about their academic interests, performance, and career goals through a questionnaire or profile. 3. The system uses AI algorithms to analyze the user's input and generate personalized recommendations. 4. User receives recommendations for courses, internships, career resources, or other opportunities tailored to their profile. 5. User engages with the recommendations, exploring options and taking action as appropriate. |
| **Extensions** | 3a. Additional Input Required:  If the system determines that additional information is needed to generate accurate recommendations, it prompts the user to provide more details about their academic interests, performance, or career goals.  3b. Review and Adjust Recommendations:  After receiving personalized recommendations, the user has the option to review and adjust them based on their preferences or feedback. The system allows users to fine-tune their recommendations for a more tailored experience.  4a. Follow-Up Recommendations:  The system periodically provides follow-up recommendations based on changes in the user's profile, academic progress, or career interests. Users receive updated suggestions to support their ongoing academic and career development.  4b. Interactive Career Planning Tools:  In addition to recommendations, the system offers interactive career planning tools such as resume builders, interview preparation guides, and career assessment quizzes. Users can actively engage in career exploration and preparation.  4c. Integration with Job Search Platforms:  Users may opt to connect their CampusConnect profiles with external job search platforms or career services portals. The system integrates relevant job listings and internship opportunities into personalized recommendations for seamless access.  5a. Advising Appointment Scheduling:  Users who require further assistance or guidance beyond the automated recommendations may schedule advising appointments with academic advisors or career counselors directly through the platform. The system facilitates appointment scheduling and reminders. |
| **Special Requirements** | * Integration with AI technologies for analyzing user data and generating personalized recommendations. * Privacy and data security measures to protect user information and ensure compliance with regulations. |
| **Technology and Data Variation List** | * Support for user profiles and preferences for storing and managing personalized advising data. * Integration with academic databases, internship platforms, and career resources for accessing relevant information. |
| **Frequency of Occurrence** | Students may access personalized advising services periodically throughout their academic journey, especially during key decision-making moments. |
| **Miscellaneous** | * Collaboration with academic advisors and career services to ensure alignment with institutional advising practices and resources. * Feedback mechanisms should be in place for users to provide input on the effectiveness and relevance of personalized recommendations. |
| **Open Issues** | * Ensuring transparency and accountability in AI-driven advising processes, with mechanisms for users to understand and question recommendations. * Continuous monitoring and improvement of AI algorithms to enhance the accuracy and effectiveness of personalized advising. |

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| **Use Case ID** | UC-031 |
| **Use Case Name** | Language Exchange and Cultural Exchange Forums |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Interested in practicing languages, learning about different cultures, and connecting with peers globally. * International Student Services: May facilitate cultural exchange events and provide support for international student integration. * Language Departments: Interested in promoting language learning and cultural exchange initiatives. |
| **Preconditions** | * The user has an active CampusConnect account. * Language exchange and cultural exchange forums are available on the platform. |
| **Success Guarantee** | Students can engage in language practice, cultural exchange, and international student integration through the platform, fostering cross-cultural understanding and communication. |
| **Main Success Scenario** | 1. User accesses the Language Exchange and Cultural Exchange Forums section within CampusConnect. 2. User searches for language partners or cultural exchange events based on their interests and preferences. 3. The system connects users with compatible language partners or provides information about cultural exchange events. 4. User engages in language practice sessions, cultural exchange activities, or international student integration initiatives. 5. Optionally, the system facilitates language learning resources, conversation prompts, or cultural guides to support users' interactions. |
| **Extensions** | * **3a. Language Partner Matching Algorithm:**   + The system employs an algorithm to match users with compatible language partners based on language proficiency, interests, and availability. * **4a. Language Proficiency Assessments:**   + Users have the option to assess their language proficiency through standardized tests or self-assessments. The system uses this information to tailor language practice sessions accordingly. * **4b. Cultural Exchange Events Calendar:**   + The platform includes a calendar feature highlighting upcoming cultural exchange events, workshops, and international student gatherings. Users can easily browse and RSVP for events of interest. * **5a. Language Learning Challenges:**   + The platform hosts language learning challenges or competitions to motivate users to practice languages actively. Participants earn rewards or recognition for their participation and progress. |
| **Special Requirements** | 1. User profiles should include language proficiency levels and cultural interests. 2. Moderators may be required to manage interactions and ensure the platform's safety. 3. The platform should provide secure messaging and event registration functionalities. |
| **Technology and Data Variation List** | 1. Forum platform with search, filter, and messaging functionalities. 2. User profiles with language proficiency levels and cultural interests. 3. Secure data storage and user authentication mechanisms. |
| **Frequency of Occurrence** | Regularly, as students engage in language learning and cultural exchange throughout their academic journey. |
| **Miscellaneous** | 1. Encourages diversity and inclusivity within the student community. 2. Enhances cultural awareness and language skills among students. |
| **Open Issues** | 1. Ensuring user safety and preventing misuse or inappropriate behavior. 2. Managing event logistics and participation. |

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| **Use Case ID** | UC-031 |
| **Use Case Name** | Health and Fitness Tracker |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Students: Interested in tracking physical activities, joining fitness challenges, and finding workout buddies to promote a healthier lifestyle. * Campus Health Center: Interested in promoting physical wellness among students. * Campus Sports Facilities: Interested in increasing student engagement with sports facilities and events. |
| **Preconditions** | 1. The user must have registered an account on the platform. 2. The user must be logged in. 3. The user must be interested in tracking physical activities or participating in fitness challenges. |
| **Success Guarantee** | 1. Users can track their physical activities effectively. 2. Users can find workout buddies and participate in fitness challenges easily. |
| **Main Success Scenario** | 1. User logs in to the platform. 2. User navigates to the Health and Fitness Tracker section. 3. User tracks their physical activities or joins fitness challenges. 4. User connects with workout buddies through the platform. |
| **Extensions** | 1a. If the user encounters technical issues with tracking or joining challenges: 1. User contacts platform support for assistance. |
| **Special Requirements** | 1. The platform should integrate with fitness tracking devices or apps. 2. Campus sports facilities and events should be linked to the platform for seamless integration. |
| **Technology and Data Variation List** | 1. Platform with fitness tracking, challenge joining, and social networking functionalities. 2. Integration with fitness tracking devices or apps. 3. Linkage with campus sports facilities and events. |
| **Frequency of Occurrence** | Regularly, as students engage in physical activities and fitness challenges throughout their academic journey. |
| **Miscellaneous** | 1. Promotes a healthier lifestyle among students. 2. Enhances student engagement with campus sports facilities and events. |
| **Open Issues** | 1. Ensuring user privacy and data security. 2. Integrating diverse fitness tracking devices or apps seamlessly. |

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| **Use Case ID** | UC-033 |
| **Use Case Name** | Peer Tutoring and Academic Support Network |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Students: Interested in offering or seeking academic assistance in various subjects. * Academic Departments: Interested in supporting student learning and academic success. * Campus Tutoring Centers: Interested in facilitating peer tutoring opportunities. |
| **Preconditions** | 1. The user must have registered an account on the platform. 2. The user must be logged in. 3. The user must be interested in offering or seeking academic assistance. |
| **Success Guarantee** | 1. Users can find reliable peer tutors or academic support easily. 2. Users receive quality academic assistance through the platform. |
| **Main Success Scenario** | 1. User logs in to the platform. 2. User navigates to the Peer Tutoring section. 3. User searches for available tutors or posts a request for academic assistance. 4. User connects with a peer tutor and receives academic support. |
| **Extensions** | 1a. If the user encounters difficulties in finding suitable tutors or academic support: 1. User posts a query on the platform for assistance. |
| **Special Requirements** | 1. The platform should include a rating system for tutors to ensure quality and reliability. 2. Tutors may need to undergo verification processes to be listed on the platform. |
| **Technology and Data Variation List** | 1. Platform with tutoring listing, search, and messaging functionalities. 2. Rating system for tutors. 3. Verification processes for tutors. |
| **Frequency of Occurrence** | Regularly, as students seek academic assistance throughout their academic journey. |
| **Miscellaneous** | 1. Supports student learning and academic success. 2. Fosters a collaborative learning environment among students. |
| **Open Issues** | 1. Ensuring the integrity of academic assistance provided through the platform. 2. Managing tutor availability and scheduling effectively. |

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| **Use Case ID** | UC-034 |
| **Use Case Name** | Personal Safety and Campus Security Features |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Students: Interested in ensuring personal safety and campus security. * Campus Security Department: Interested in providing effective safety measures for students. * Administrators: Interested in maintaining a safe campus environment. |
| **Preconditions** | 1. The user must have registered an account on the platform. 2. The user must be logged in. 3. The user must be interested in accessing personal safety and campus security features. |
| **Success Guarantee** | 1. Users can access safety features easily in case of emergencies. 2. The platform effectively notifies users about real-time campus security alerts and safety concerns. |
| **Main Success Scenario** | 1. User logs in to the platform. 2. User accesses the Personal Safety and Campus Security section. 3. User utilizes the SOS button or safe walk services if needed. 4. User receives real-time campus security alerts and reports suspicious activity anonymously if necessary. |
| **Extensions** | 1a. If the user encounters an emergency situation: 1. User activates the SOS button, which notifies campus security immediately. 2. User can request safe walk services for assistance. |
| **Special Requirements** | 1. The platform should ensure the anonymity of users reporting suspicious activity or safety concerns. 2. Integration with campus security systems for real-time alerts and notifications. |
| **Technology and Data Variation List** | 1. Platform with safety features including an SOS button, safe walk services, and real-time alerts. 2. Anonymity features for reporting suspicious activity. 3. Integration with campus security systems for real-time alerts. |
| **Frequency of Occurrence** | Intermittently, as users may access safety features as needed for personal security. |
| **Miscellaneous** | 1. Enhances campus safety and security for all users. 2. Promotes a sense of security and well-being among students. |
| **Open Issues** | 1. Ensuring the reliability and responsiveness of safety features in emergency situations. 2. Addressing privacy concerns related to the collection and use of personal safety data. |

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| **Use Case ID** | UC-035 |
| **Use Case Name** | Interactive Event and Lecture Live-Streaming |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Students: Interested in accessing campus events and guest lectures remotely. * Faculty: Interested in reaching a wider audience for their lectures and seminars. * Administrators: Interested in promoting campus events and engagement. |
| **Preconditions** | 1. The user must have access to the platform's live-streaming feature. 2. The user must be logged in. 3. The user must be interested in accessing live-streamed events or lectures. |
| **Success Guarantee** | 1. Users can access live-streamed events and lectures with interactive elements easily. 2. The platform effectively engages remote participants through Q&A sessions, polls, and live chats. |
| **Main Success Scenario** | 1. User logs in to the platform. 2. User navigates to the Live Events section. 3. User selects the desired event or lecture to live stream. 4. User participates in interactive elements such as Q&A sessions, polls, and live chats. |
| **Extensions** | 1a. If the user encounters technical issues with live streaming: 1. User contacts platform support for assistance. 2. User may access recorded versions of the event later. |
| **Special Requirements** | 1. The platform should support seamless live streaming with minimal latency. 2. Interactive elements should be user-friendly and accessible to all participants. |
| **Technology and Data Variation List** | 1. Platform with live-streaming capabilities and interactive features. 2. Stable internet connection for live streaming. 3. Integration with event scheduling and management systems. |
| **Frequency of Occurrence** | Intermittently, as users may access live-streamed events or lectures based on their interests and availability. |
| **Miscellaneous** | 1. Expands access to campus events and lectures for remote participants. 2. Facilitates interaction and engagement among remote participants and event organizers. |
| **Open Issues** | 1. Ensuring the scalability and reliability of live-streaming infrastructure for large events. 2. Addressing accessibility concerns for users with disabilities during live-streamed events. |

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| **Use Case ID** | UC-036 |
| **Use Case Name** | Interactive Event and Lecture Live-Streaming |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Remote Participant |
| **Stakeholder and Interests** | * Remote Participant: Aims to participate in campus events, guest lectures, and seminars remotely through live-streaming, with interactive elements for engagement. * Event Organizers: Interested in reaching a broader audience and facilitating remote participation in campus events. * University Administration: Focused on enhancing accessibility and engagement in campus activities through innovative technologies. |
| **Preconditions** | * The user has access to CampusConnect and a stable internet connection. * The event organizer has scheduled and initiated the live-streaming session. |
| **Success Guarantee** | * The Interactive Event and Lecture Live-Streaming feature provides an immersive and engaging experience for remote participants, with interactive elements such as Q&A sessions, polls, and live chats. |
| **Main Success Scenario** | 1. Remote Participant accesses CampusConnect and navigates to the live-streaming section. 2. Remote Participant selects the desired event, lecture, or seminar from the available options. 3. The live-streaming session begins, with audio and video feed of the event or lecture. 4. Remote Participant engages with interactive elements such as:    * Q&A Sessions: Asks questions to the speaker or panelists.    * Polls: Participates in polls to provide feedback or opinions.    * Live Chats: Interacts with other remote participants or event moderators. 5. The system records participation metrics and feedback from remote participants. 6. Event Organizers and University Administration monitor the live-streaming session and engagement metrics. |
| **Extensions** | * 2a. If the remote participant encounters issues accessing the live-streaming session, the system provides troubleshooting options. * 4a. If there are technical difficulties during the live-streaming session, the system provides support and assistance to resolve the issues. |
| **Special Requirements** | * Reliable live-streaming infrastructure capable of handling multiple participants. * Interactive features such as Q&A sessions, polls, and live chats integrated into the live-streaming platform. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Integration with third-party tools or platforms for interactive features. |
| **Frequency of Occurrence** | * The Interactive Event and Lecture Live-Streaming feature is expected to be used regularly for campus events, guest lectures, and seminars. |
| **Miscellaneous** | * Regular updates and improvements to the live-streaming platform based on user feedback and technological advancements. * Integration with notification systems to inform users about upcoming live-streaming sessions. |
| **Open Issues** | 1. Investigate potential challenges related to scalability and bandwidth requirements for large-scale live-streaming events. 2. Explore ways to enhance user engagement and interaction during live-streaming sessions. 3. Address any concerns related to accessibility and inclusivity for remote participants. |

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| **Use Case ID** | UC-037 |
| **Use Case Name** | Digital Student ID and Wallet |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to use a digital student ID for access to campus facilities, events, and transactions, as well as the convenience of a digital wallet for cashless payments. * University Administration: Focused on providing a modern and convenient solution for student identification and payment on campus. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Digital Student ID and Wallet feature. |
| **Success Guarantee** | * The Digital Student ID and Wallet feature provides students with a secure and convenient way to access campus facilities, events, and make cashless payments. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student accesses the Digital Student ID and Wallet section. 3. Student can:    * View their digital student ID with relevant information such as name, student ID number, and a photo.    * Use the digital ID for access to campus facilities, events, and activities.    * Load funds into their digital wallet using various payment methods.    * Make cashless payments at campus cafeterias, bookstores, vending machines, and other participating locations. 4. The system securely processes transactions and updates the student's digital wallet balance. |
| **Extensions** | * 2a. If the user encounters issues accessing the Digital Student ID and Wallet section, the system provides troubleshooting options. * 3a. If a transaction fails or there are issues with using the digital ID, the system provides support and assistance. |
| **Special Requirements** | * Secure authentication methods to prevent unauthorized access to the digital student ID. * Integration with campus facilities and payment systems for seamless access and transactions. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Encryption and secure storage of student ID and payment information. |
| **Frequency of Occurrence** | * The Digital Student ID and Wallet feature is expected to be used regularly by students for access and transactions on campus. |
| **Miscellaneous** | * Regular updates and improvements to the digital ID and wallet interface based on user feedback. * Integration with notification systems to inform users about account activity and transaction history. |
| **Open Issues** | 1. Investigate potential challenges related to the integration of the digital ID with existing campus systems. 2. Explore ways to enhance security measures to protect student information and funds. 3. Address any concerns related to the usability and reliability of the digital ID and wallet feature. |

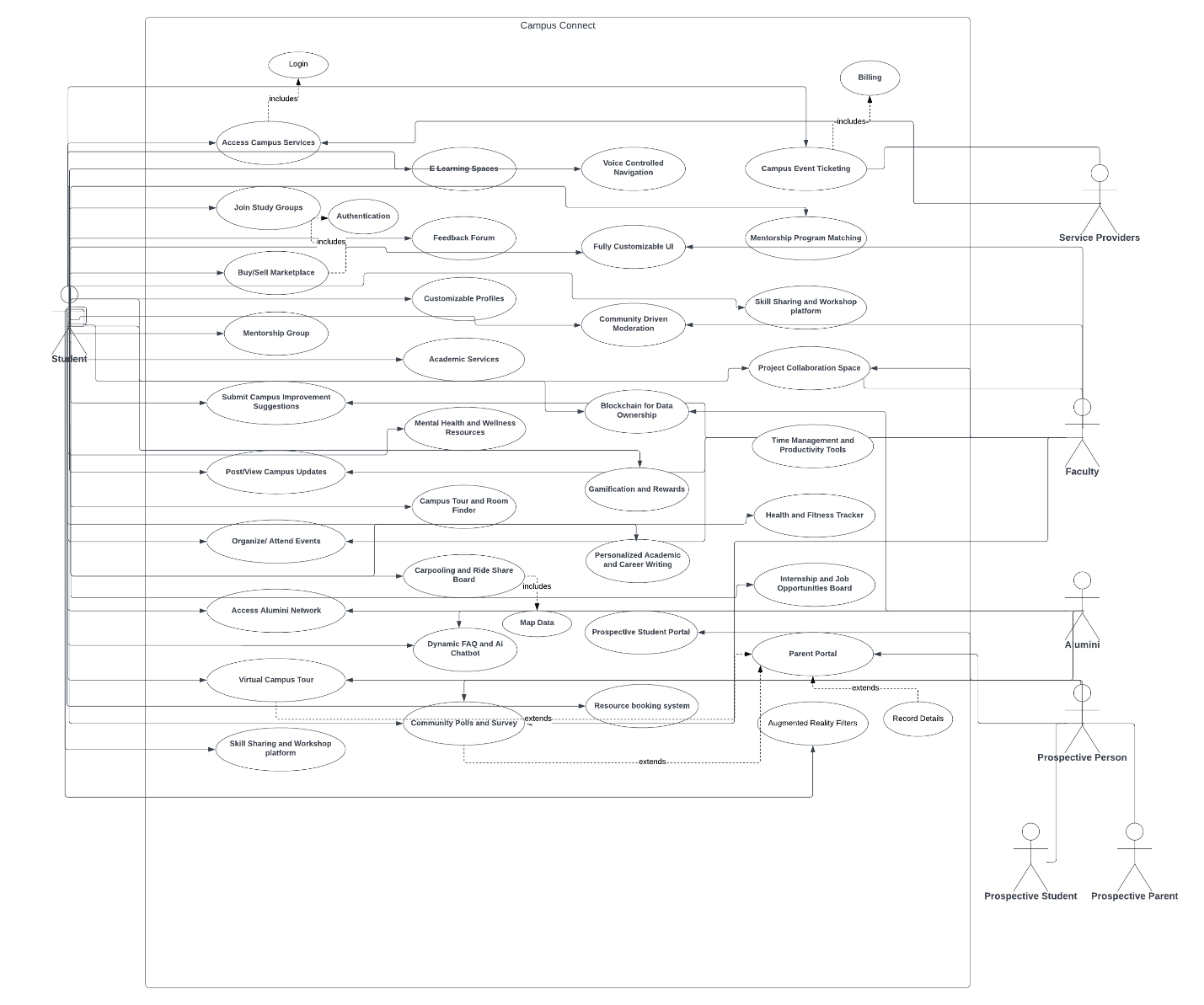
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| **Use Case ID** | UC-038 |
| **Use Case Name** | Student-Led Content and Publication Platform |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to publish articles, blogs, and other content related to campus life, academic interests, or personal development. * Readers: Interested in accessing a variety of content created by fellow students, including research articles, blogs, and creative writing. * University Administration: Focused on providing a platform for students to showcase their work, share knowledge, and foster intellectual growth. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Student-Led Content and Publication Platform feature. |
| **Success Guarantee** | * The Student-Led Content and Publication Platform provides students with a user-friendly and accessible platform to publish, share, and engage with diverse content. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student accesses the Content and Publication Platform section. 3. Student can:    * Create and publish articles, blogs, or other forms of content.    * Select relevant categories or tags for their content to reach the intended audience.    * Include multimedia elements such as images, videos, or interactive features.    * Engage with other students' content through comments, likes, or shares. 4. Readers browse the platform and discover content based on their interests or preferences. 5. Readers can interact with content by leaving comments, sharing articles, or bookmarking favorites. 6. University Administration monitors and moderates content to ensure quality and adherence to guidelines. |
| **Extensions** | * 2a. If the user encounters issues accessing the Content and Publication Platform section, the system provides troubleshooting options. * 3a. If content violates platform guidelines or requires moderation, the system provides tools for editing or removing content as necessary. |
| **Special Requirements** | * User-friendly content creation tools for students with varying levels of technical expertise. * Moderation tools for administrators to ensure the quality and integrity of published content. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Storage and retrieval of multimedia content uploaded by users. |
| **Frequency of Occurrence** | * The Student-Led Content and Publication Platform is expected to be used regularly as students publish and engage with content throughout their academic journey. |
| **Miscellaneous** | * Regular updates and improvements to the platform based on user feedback and emerging trends. * Integration with notification systems to inform users about new content, comments, or interactions. |
| **Open Issues** | 1. Investigate potential challenges related to content moderation and ensuring the integrity of published material. 2. Explore ways to enhance user engagement and participation on the platform. 3. Address any concerns related to copyright infringement or plagiarism within published content. |

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| **Use Case ID** | UC-038 |
| **Use Case Name** | Dynamic FAQ and AI Chatbot for Campus Information |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to quickly access information about campus services, policies, and events. * Administrative Staff: Interested in reducing the workload associated with answering routine inquiries and improving overall information accessibility for students. * University Administration: Focused on providing efficient and accessible campus information services to students. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Dynamic FAQ and AI Chatbot feature. |
| **Success Guarantee** | * The Dynamic FAQ and AI Chatbot feature provides students with quick and accurate responses to their inquiries about campus services, policies, and events, reducing the workload on administrative staff and improving information accessibility. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student accesses the FAQ and Chatbot section. 3. Student interacts with the chatbot by typing or speaking their inquiry. 4. The chatbot analyzes the inquiry and provides a relevant response based on the dynamic FAQ system and AI algorithms. 5. If the chatbot cannot provide a satisfactory response, the inquiry is escalated to administrative staff for manual assistance. 6. Administrative staff review and respond to escalated inquiries promptly. |
| **Extensions** | * 2a. If the user encounters issues accessing the FAQ and Chatbot section, the system provides troubleshooting options. * 4a. If the chatbot misunderstands the inquiry or provides an incorrect response, the system offers options for the user to refine their inquiry or request manual assistance. |
| **Special Requirements** | * Natural language processing (NLP) capabilities for the chatbot to understand and interpret user inquiries accurately. * Integration with backend systems to access up-to-date information about campus services, policies, and events. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Integration with databases containing campus information. |
| **Frequency of Occurrence** | * The Dynamic FAQ and AI Chatbot feature is expected to be used regularly by students seeking information about campus services, policies, and events. |
| **Miscellaneous** | * Regular updates and improvements to the chatbot's capabilities based on user feedback and advancements in AI technology. * Integration with notification systems to inform users about new features or improvements to the chatbot. |
| **Open Issues** | 1. Investigate potential challenges related to the accuracy and reliability of the chatbot's responses. 2. Explore ways to enhance the chatbot's capabilities, such as multi-language support or integration with additional campus systems. 3. Address any concerns related to data privacy and security when interacting with the chatbot. |

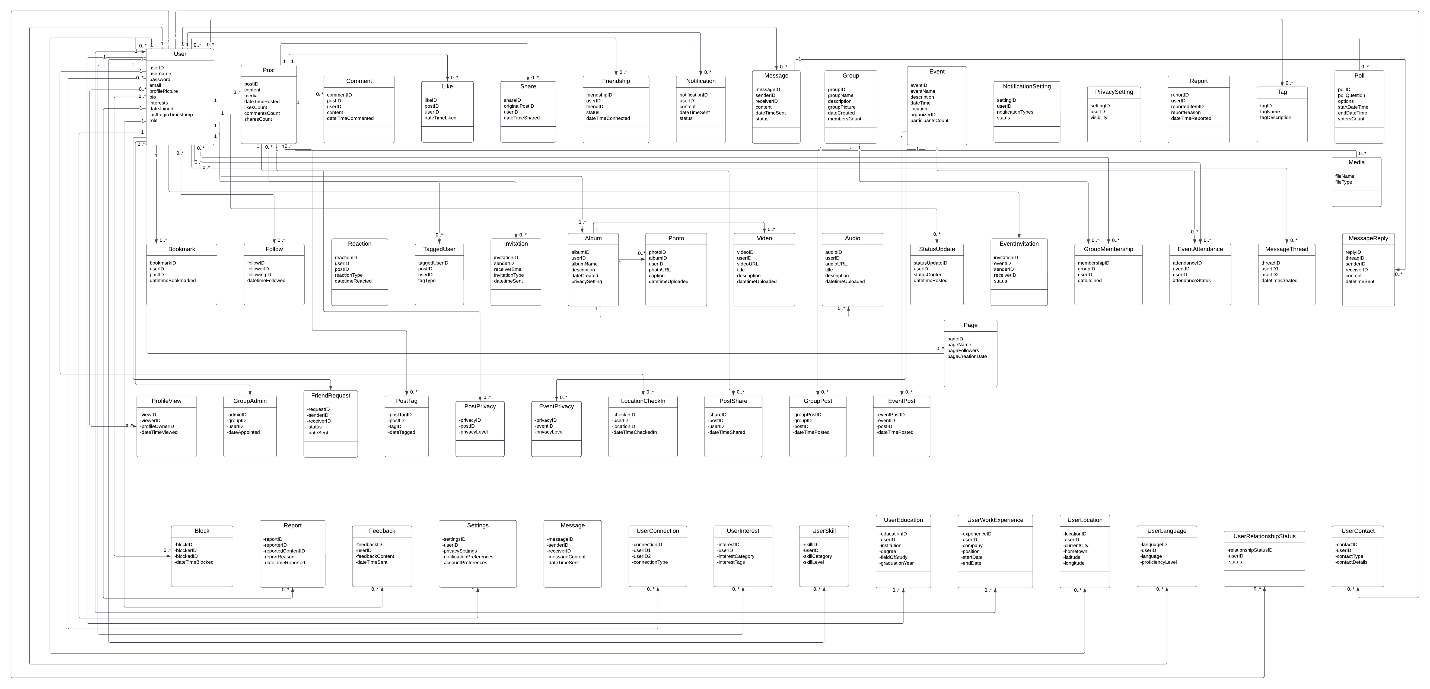
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| **Use Case Name** | Mentorship Program Matching |
| **Use Case ID** | UC-039 |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Student |
| **Stakeholder and Interests** | * Student: Aims to be matched with a suitable mentor to receive guidance and support in academic and career endeavors. * Faculty/Professional Mentors: Interested in mentoring students who share similar academic interests, career goals, and personal preferences. * University Administration: Focused on facilitating meaningful mentorship relationships between students and mentors to enhance student success and professional development. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Mentorship Program Matching feature. * Both students and mentors have provided relevant information about their academic interests, career goals, and personal preferences. |
| **Success Guarantee** | * The Mentorship Program Matching feature successfully matches students with suitable mentors based on academic interests, career goals, and personal preferences, facilitating meaningful mentorship relationships. |
| **Main Success Scenario** | 1. Student logs in to CampusConnect. 2. Student accesses the Mentorship Program section. 3. Student provides information about their academic interests, career goals, and personal preferences. 4. The system analyzes the student's information and matches them with potential mentors who meet their criteria. 5. The system presents a list of matched mentors to the student, along with relevant details such as expertise, availability, and contact information. 6. Student reviews the list of matched mentors and selects one or more mentors to initiate contact. 7. The system facilitates communication between the student and selected mentor(s), allowing them to establish a mentorship relationship. |
| **Extensions** | * 2a. If the user encounters issues accessing the Mentorship Program section, the system provides troubleshooting options. * 3a. If the student's provided information is insufficient for accurate matching, the system prompts the student to provide additional details. |
| **Special Requirements** | * Advanced algorithms for mentor-student matching based on academic interests, career goals, and personal preferences. * User-friendly interfaces for students to provide information and review matched mentors. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Secure storage and retrieval of student and mentor information. |
| **Frequency of Occurrence** | * The Mentorship Program Matching feature is expected to be used periodically as new students join the program or existing students seek new mentorship relationships. |
| **Miscellaneous** | * Regular updates and improvements to the matching algorithm based on user feedback and mentorship program outcomes. * Integration with notification systems to inform users about matched mentors and facilitate communication. |
| **Open Issues** | 1. Investigate potential challenges related to ensuring the compatibility and effectiveness of mentor-student matches. 2. Explore ways to enhance the mentorship program's impact on student success and professional development. 3. Address any concerns related to mentor availability and commitment to the program. |

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| **Use Case ID** | UC-040 |
| **Use Case Name** | Custom Group and Societies and Club Management Tools |
| **Scope** | CampusConnect |
| **Level** | Subfunction |
| **Primary Actor** | Club President/Administrator |
| **Stakeholder and Interests** | * Club President/Administrator: Aims to efficiently manage club operations, including membership management, event scheduling, and budget tracking. * Club Members: Interested in staying informed about club activities, participating in events, and accessing club resources. * University Administration: Focused on providing robust tools for club management to enhance student engagement and support the activities of campus groups and societies. |
| **Preconditions** | * The user has an active CampusConnect account. * The system supports the Custom Group and Societies and Club Management Tools feature. * The club or society is registered with the university and has designated administrators. |
| **Success Guarantee** | * The Custom Group and Societies and Club Management Tools successfully facilitate efficient management of club operations, including membership management, event scheduling, and budget tracking, leading to improved club functioning and member satisfaction. |
| **Main Success Scenario** | 1. Club President/Administrator logs in to CampusConnect. 2. Club President/Administrator accesses the Club Management Tools section. 3. Club President/Administrator can:    * View and manage club membership, including adding or removing members and updating member information.    * Schedule club events, specifying details such as date, time, location, and agenda.    * Track club budget, including income, expenses, and available funds.    * Communicate with club members through announcements, newsletters, or messaging features. 4. Club Members receive notifications about upcoming events, announcements, and other club activities. 5. Club Members can RSVP for events, participate in discussions, and access club resources as needed. |
| **Extensions** | * 2a. If the Club President/Administrator encounters issues accessing the Club Management Tools section, the system provides troubleshooting options. * 3a. If a club event needs to be rescheduled or canceled, the system notifies club members and updates event details accordingly. * 4a. If a club member encounters issues accessing club resources or participating in events, the system offers assistance or redirects the member to relevant support channels. |
| **Special Requirements** | * User-friendly interfaces for club administrators to manage club operations efficiently. * Integration with university systems for budget tracking and event scheduling. |
| **Technology and Data Variation List** | * Compatibility with various devices and operating systems. * Secure storage and retrieval of club and member information. |
| **Frequency of Occurrence** | * The Custom Group and Societies and Club Management Tools feature is expected to be used regularly by club administrators and members to manage club operations and participate in club activities. |
| **Miscellaneous** | * Regular updates and improvements to the management tools based on user feedback and evolving club needs. * Integration with notification systems to inform users about club activities and updates. |
| **Open Issues** | 1. Investigate potential challenges related to ensuring the accuracy and reliability of club data, such as membership lists and budget information. 2. Explore ways to enhance user engagement and participation in club activities through the platform. 3. Address any concerns related to privacy and data security when managing club information and communications. |

# 3 Use Case Diagram



# 4 Domain Model



**Noun-Verb Analysis:**

Nouns represent the various entities or objects in the system, while verbs depict the actions or behaviours associated with these entities.

**Nouns:**

In the context of CampusConnect's features, several key nouns emerge, delineating the core elements and entities involved in each functionality. For instance, in the Augmented Reality (AR) Filters and Spaces use case, nouns such as Student, AR Filters and Spaces, CampusConnect account, Device, and Library of pre-designed AR filters and spaces take center stage. Similarly, in the Voice-Controlled Navigation and Interaction scenario, nouns like Student, CampusConnect account, Device, Commands, Event, and Attendance data play pivotal roles. Lastly, the Project Collaboration Spaces use case introduces nouns such as Student, CampusConnect account, Project collaboration space, Project details, Faculty/Staff, and University Administration, reflecting the collaborative nature of the feature.

Platform: The central hub where users access features and services like academic advising, community polls, class schedule integration, campus navigation, skill-sharing workshops, sustainability initiatives, campus news, and mental health support.

Student: The primary actor in most use cases, seeking academic guidance, participating in surveys, managing schedules, navigating campus, attending workshops, engaging with news, and accessing mental health resources.

Faculty/Staff: Stakeholders involved in providing academic support, contributing to surveys, managing schedules, attending workshops, sharing achievements, and promoting campus wellness.

Administration: Responsible for overseeing and improving campus services, promoting sustainability, communicating achievements, and ensuring student well-being.

Community: The collective body of students, faculty, staff, and visitors who interact with CampusConnect to enhance their campus experience, contribute feedback, and access resources.

**Verbs:**

Conversely, verbs breathe life into these use cases, depicting the actions or operations that users undertake within the system. In the "Augmented Reality (AR) Filters and Spaces" scenario, verbs like "Selects," "Chooses," "Applies," "Creates," and "Shares" define the interactive process of engaging with AR content. Similarly, in the "Voice-Controlled Navigation and Interaction" context, verbs such as "Activates," "Recognizes," "Issues," "Interprets," and "Navigates" illustrate the seamless interaction enabled by voice commands. Lastly, in the "Project Collaboration Spaces" use case, verbs like "Joins," "Initiates," "Defines," "Shares," and "Manages" delineate the collaborative endeavor facilitated by the platform.

Access: Users navigate to different sections of CampusConnect to utilize its features and services.

Participate: Students, faculty, and staff engage in surveys, workshops, and events to contribute feedback, share knowledge, and foster community involvement.

Manage: Users organize their schedules, set reminders, and make informed decisions regarding academic and personal responsibilities.

Browse: Users explore available resources, initiatives, news articles, and mental health support options.

Offer/Sign up: Students propose or register for workshops and skill-sharing sessions, promoting collaboration and learning opportunities.

Contribute: Users share ideas, projects, achievements, and feedback to enrich the campus community and support sustainability efforts.

Access/Utilize: Students seek and utilize mental health resources, including articles, videos, support contacts, and interactive tools, to manage their well-being.

Schedule/Connect: Students request counseling sessions or emergency support, connecting with counselors or support professionals for assistance.

Promote: CampusConnect administrators and stakeholders promote events, achievements, resources, and initiatives to engage users and foster a sense of community.

**CRC Analysis:**

CRC (Class-Responsibility-Collaborator) analysis is a method used in software engineering and design to identify classes, their responsibilities, and their collaborations within a system. Applying CRC analysis to the CampusConnect system outlined in the provided content reveals a comprehensive understanding of its structure and functionality.

Firstly, examining the classes within CampusConnect reveals distinct entities such as "Platform," "Student," "Faculty/Staff," and "Administration." Each of these classes represents different user roles within the system, with unique responsibilities and access privileges. Additionally, there are conceptual classes like "Community," representing the collective body of users interacting with the platform. These classes encapsulate the various actors and stakeholders involved in the system, facilitating effective management and interaction within the CampusConnect environment.

Next, the responsibilities associated with each class define their role and function within the system. For instance, the "Platform" class is responsible for providing access to features such as academic advising, polls, and mental health support. Students, on the other hand, have responsibilities such as managing schedules, participating in surveys, and accessing resources. Faculty/Staff members contribute to surveys, workshops, and wellness initiatives, while Administration oversees platform operations and promotes campus-wide initiatives. Each class carries out specific tasks and functions necessary for the smooth operation and utilization of CampusConnect.

Lastly, understanding the collaborations between classes illuminates the interactions and dependencies within the system. Students collaborate with the Platform to access services like academic advising, workshops, and mental health support. Faculty/Staff members collaborate with the Platform to organize events, share achievements, and promote wellness initiatives. Administration collaborates with all classes to ensure platform functionality, promote sustainability efforts, and foster community engagement. These collaborations highlight the interconnectedness of the classes within CampusConnect, emphasizing the importance of effective communication and cooperation to achieve shared objectives.

In summary, CRC analysis provides valuable insights into the structure, responsibilities, and collaborations within the CampusConnect system. By identifying classes, their associated responsibilities, and their interactions, stakeholders can gain a deeper understanding of how the system functions and how various entities within it contribute to its overall operation and effectiveness.