

Project Proposal

Project Title: EMPLOYEE AVAILABILITY DASHBOARD

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1.0 INTRODUCTION

Managing the supply of lecturers is a big problem for schools today, especially in places like the School of Computing (SOC) that are always changing. It's getting harder and harder to keep track of and control individual availability because of how quickly educational needs change and how hard it is to schedule classes, meetings, and other academic activities. Today's fast-paced academic settings don't work well with the old ways of doing things that many schools still use, like tracking systems that are done by hand or static spreadsheets. These old methods often can't handle real-time updates and don't give a full picture of lecturers' attendance, absences, and general availability, which makes it harder for managers to keep an eye on things and coordinate projects.

The problems with these old ways of doing things can cause many inefficient operations that affect academic institutions in a big way. For example, when departments rely on manual tracking, there is a much higher chance of human mistake, which can lead to misunderstandings about when lecturers are scheduled. This can cause classes to be scheduled at the same time, lecturers to forget about their teaching obligations, or important events to be missed. Such flaws not only slow down the learning process, but they also add to the work of department leaders who have to keep track of when lecturers are available. Trying to balance all of these plans can make it harder for them to work on bigger goals, like improving the quality of their teaching or moving research projects forward.

Also, the inefficiency of old tracking methods can cause people to miss due dates for submitting projects and doing routine work. Leaders in schools are always under pressure to meet strict deadlines. Scheduling delays can lead to bigger problems with project management, which can make both teachers and students irritated. Not meeting these deadlines has both administrative and academic effects, as it can hurt the school's image and the results of students.

Putting together a single Employee Availability Dashboard seems like a good way to deal with these problems. A method like this is meant to give a full, real-time picture of when lecturers are available, which will make scheduling easier and encourage departments to work together better. By putting all the important data on one platform, department heads and staff members can easily see the most up-to-date schedules, keep track of leave plans, and let each other know about changes in their availability. This openness encourages lecturers to work together, so they can better organise their efforts, which leads to better use of resources and higher productivity.

Moreover, the implementation of such a dashboard can foster a culture of collaboration and mutual respect among faculty members. With easy access to each other's schedules, lecturers can identify opportunities for joint initiatives, co-teaching arrangements, and collaborative research projects. This interconnectedness can create a vibrant academic community where

knowledge sharing and innovative ideas thrive, ultimately enriching the learning experience for students (Wang, 2022).

2.0 PREVIOUS WORKS

An excellent Employee Availability Dashboard incorporates insights from workforce management, academic scheduling, predictive analytics, and collaborative tools. Various solutions have been developed to enhance personnel tracking and resource management across sectors. For instance, Kronos Workforce Central centralizes staff attendance and leave management, demonstrating the value of real-time tracking for operational efficiency in corporate settings (UKG, n.d.). Similarly, BambooHR offers user-friendly employee database solutions with integrations for small businesses, though it may lack some features needed for larger enterprises (BambooHR, n.d.).

In academic contexts, Syllabus Plus and TimeEdit have proven useful for coordinating complex schedules and resources, yet these tools may not fully support cross-departmental availability tracking (Tribal Group, n.d.; TimeEdit, n.d.). Additionally, workforce prediction studies show how machine learning applied to historical data can predict availability trends to optimize scheduling and resource allocation (Lee et al., 2020). For instance, Deputy and Zoho People streamline leave management and automate attendance tracking, demonstrating the benefits of automation in resource management (Deputy, n.d.; Zoho, n.d.). Lastly, communication tools like Slack highlight the importance of centralized, accessible information to reduce scheduling conflicts and enhance collaboration (Slack Technologies, n.d.).

This project examines the development of a dashboard that is both adaptable and scalable, with a particular emphasis on academic environments, such as the School of Computing. The objective is to establish a system that can accommodate the dynamic organizational structures that are frequently observed in educational institutions, thereby facilitating cross-departmental coordination and fostering a more comprehensive approach to resource allocation and scheduling.

Tool/Category	Advantages	Disadvantages
Kronos Workforce Central	<ul style="list-style-type: none"> - Real-time attendance tracking - Integrates with payroll and compliance - Scalable for various industries 	<ul style="list-style-type: none"> - High setup and maintenance costs - Complexity may overwhelm small organizations - Requires substantial training
BambooHR	<ul style="list-style-type: none"> - User-friendly, ideal for small businesses - Centralized employee database - Integrates with third-party apps 	<ul style="list-style-type: none"> - Limited features for large enterprises - Less robust reporting - Pricing increases with employee count
Syllabus Plus	<ul style="list-style-type: none"> - Tailored for academic institutions - Supports complex scheduling - Aids in long-term academic planning 	<ul style="list-style-type: none"> - Limited customizability for non-academic needs - High cost for small institutions - Requires setup time and user training
TimeEdit	<ul style="list-style-type: none"> - Flexible and user-friendly - Real-time adjustments to schedules - Integrates with other academic systems 	<ul style="list-style-type: none"> - Limited features for workforce management - Expensive for smaller institutions - Lacks detailed analytics for resource management
Employee Availability Prediction	<ul style="list-style-type: none"> - Predictive analytics for scheduling - Data-driven resource allocation - Reduces scheduling conflicts 	<ul style="list-style-type: none"> - Requires substantial data input - High setup costs for machine learning - Complexity can be a barrier for non-technical users
Deputy	<ul style="list-style-type: none"> - Simple shift and leave management 	<ul style="list-style-type: none"> - Limited reporting features - Minimal integration

	<ul style="list-style-type: none"> - Mobile-friendly - Affordable for SMEs 	<ul style="list-style-type: none"> with payroll - Lacks advanced analytics
Zoho People	<ul style="list-style-type: none"> - Broad functionality across HR tasks - Integrates with Zoho tools - Scalable for varying business sizes 	<ul style="list-style-type: none"> - Customizability mainly within Zoho tools - Potential performance issues with large data - Overwhelming if not using the full Zoho ecosystem
Slack	<ul style="list-style-type: none"> - Easy real-time communication - Integrates with numerous apps - Ideal for remote teams 	<ul style="list-style-type: none"> - Limited availability tracking features - Can be distracting when overused - Costly for larger organizations

3.0 PROBLEM STATEMENT

The Employee Availability Dashboard that will be developing for the School of Computing (SOC) will stand out from existing solutions by addressing the specific needs of an academic environment. Unlike general workforce management tools, this dashboard will be tailored for academic staff, integrating features such as lecture and course mapping, real-time availability across departments, and direct integration with academic timetables. It will also monitor administrative and research tasks, providing information about how instructors spend their time.

The proposed Employee Availability Dashboard will introduce significant improvements over previous projects by concentrating on the intricacies of academic scheduling and resource allocation. The multifaceted roles of lecturers, which include teaching, research, and administrative responsibilities, are often difficult to capture due to the absence of integration with academic workflows in prior solutions. The objective of this dashboard is to address this deficit by enabling the real-time monitoring of availability that is specific to each role. This is particularly important in academic environments, where precise scheduling is essential. Furthermore, this dashboard will integrate predictive analytics to predict availability patterns, which will facilitate long-term resource planning and mitigate scheduling conflicts, in contrast to previous initiatives. This dashboard is distinguished as

a comprehensive, academic-centered tool for efficient staff management by ensuring that the SOC's unique requirements are completely met.

This project investigates ways to create a dashboard that is both flexible and scalable for use in academic settings, like the School of Computing. To improve cross-departmental collaboration and encourage a more integrated approach to scheduling and resource allocation, the system must be designed to support the flexible organizational structures frequently seen in educational institutions.

4.0 OBJECTIVES

This project aims to create a thorough Availability Dashboard for the School of Computing (SOC) addressing the needs of academic staff scheduling and resource management. This dashboard will be a centralised, real-time system enhancing openness, effectiveness, and communication on lecturer availability. This dashboard is designed especially for an academic environment and has essential features and criteria unlike those of traditional workforce management tools:

1. **Real-Time Tracking and Monitoring:** The dashboard will show right away, current information on lecturer availability, tracking attendance, leave schedules, and general presence. This function guarantees reliable, real-time monitoring over the SOC, therefore allowing department heads and managers to quickly evaluate staff availability and guide data-driven decisions.
2. **Enhanced Project and Task Allocation:** Integration of course mapping data with lecturer availability will help the dashboard to simplify the distribution of administrative chores, teaching responsibilities, and research-related tasks. This alignment will help to guarantee efficient use of resources, therefore lowering the possibility of scheduling conflicts and enhancing work distribution.
3. **Centralized Communication and Scheduling Coordination:** Consolidating lecturer schedules on a single, easily available platform can help faculty members and departments coordinate better by means of centralised communication and scheduling coordination. This openness will help to reduce scheduling problems and promote a cooperative work atmosphere whereby academic events may be arranged with more accuracy.
4. **Data-Driven Academic Resource Planning:** To support long-term planning the dashboard will make use of predictive analytics grounded on past availability trends. This capacity will enable SOC leadership to predict future availability patterns, therefore supporting strategic decisions on job distribution and resource allocation to maximise academic operations.
5. **Simplified Leave and Consultation Management:** The dashboard will simplify the leave application process and provide a means for students to obtain real-time lecturer availability for consultations, advising sessions, and mentoring prospects. This will improve teacher access and help with more effective leave management as well.

5.0 PROJECT SCOPE

1. **Dashboard Development:** Build a system for the School of Computing (SOC) to track lecturer attendance, leave, and availability, tailored to academic needs.
2. **User-Friendly Interface:** Create easy-to-use interfaces for department heads, lecturers, and students to access availability and consultation schedules.
3. **Data Management & Analytics:** Manage lecturer data, offering reports and insights for future resource planning.
4. **Testing & Rollout:** Test the system thoroughly, starting with a pilot phase before full implementation.
5. **Training & Support:** Provide training for users and ongoing support after the system is launched.

6.0 PROJECT SIGNIFICANCE

The Employee Availability Dashboard will provide several key benefits to the School of Computing. It will simplify the process of tracking lecturer availability, reducing manual tasks and improving efficiency. With real-time access to staff schedules, department heads will be able to allocate tasks more effectively, leading to better resource management and workload distribution. The system will also reduce scheduling conflicts and enhance collaboration among staff by providing clear visibility into availability. Additionally, the dashboard's analytics will support better long-term planning by predicting future availability trends. Overall, the dashboard will enhance operational efficiency, staff management, and academic planning.

7.0 METHODOLOGY

Agile Methodology for Employee Availability Dashboard

Dynamic projects like the Employee Availability Dashboard at the School of Computing (SOC), agile approach is well fit. For a project of this kind, its iterative development, close coordination, and flexibility to changing needs make it the perfect structure. In an academic environment, agile offers flexibility, teamwork, and ongoing development required to handle the challenging problems of tracking lecturer availability, scheduling management, and supporting resource allocation.



Figure 1 agile methodology

First phase: planning and requirement analysis

Phase 1: Requirements

➤ Sprint 1: System Requirements

- Develop comprehensive user story maps to capture and prioritize the specific needs of SOC faculty, administrators, and other stakeholders.
- Define acceptance criteria for each requirement to ensure that all user needs are met.
- Create a sprint backlog, outlining tasks and setting clear goals for each sprint.
- **Tool Used:** Microsoft Power BI will be utilized to help visualize data requirements and track user stories for better alignment with project goals.

Expected Outcome: User Story Map, Prioritized Requirements, Sprint Backlog.

Phase 2: Design

➤ Sprint 2: Prototyping and Design

- Develop initial wireframes and prototypes for the dashboard's user interface (UI) and user experience (UX), focusing on features unique to academic environments.
- Gather feedback from stakeholders and end-users, including faculty and administration, to refine UI/UX.
- Finalize the UI/UX design based on the feedback received, ensuring the interface meets the accessibility and usability needs of SOC.
- **Tool Used:** Microsoft Power BI will be used to prototype data visualizations, such as scheduling and availability charts, to incorporate into the dashboard design.

Expected Outcome: Completed UI/UX design, and initial Power BI visualizations for the dashboard.

Phase 3: Development

➤ Sprint 3: Core System Development

- Build the core functionality of the dashboard, including real-time tracking of lecturer availability, course mapping, and cross-departmental scheduling.
- Set up daily stand-up meetings to monitor progress, address any challenges, and adapt to any changing needs.
- **Tool Used:** Microsoft Power BI will be used to implement real-time data monitoring and visualizations for lecturer availability and resource allocation.

Expected Outcome: Functional dashboard with core features developed and initial Power BI integration.

➤ Sprint 4: Resource Allocation Framework

- Develop a resource allocation framework to manage scheduling, leave, and availability, incorporating predictive analytics using historical data.
- Integrate this framework with the dashboard's core system to enable automated, data-driven resource management.
- **Tool Used:** Microsoft Power BI will be utilized to generate predictive analytics for resource allocation, allowing for better decision-making based on historical data trends.
- Continue daily stand-up meetings and sprint reviews to evaluate progress.

Expected Outcome: Optimized resource allocation system, with integrated Power BI-driven analytics.

Phase 4: Testing

➤ **Sprint 5: User Engagement and Resource Management Testing**

- Implement features for user engagement, enabling faculty to interact with and update their availability within the dashboard.
- Conduct initial training sessions to prepare staff for system usage and to gather real-time feedback.
- Adjust the system based on user feedback to improve engagement and accessibility.

Expected Outcome: Enhanced user engagement, initial training, and system adjustments.

➤ **Sprint 6: System Testing and Bug Fixing**

- Perform comprehensive testing of the dashboard to identify and resolve usability issues or bugs.
- Collect feedback through usability testing, surveys, and interviews with faculty and administrative staff.
- Refine and improve the dashboard based on the feedback, ensuring it meets all user needs effectively.
- **Tool Used:** Microsoft Power BI will be used during testing to ensure that all data visualizations are working correctly and that the dashboard's data outputs are accurate.

Expected Outcome: Optimized, user-friendly dashboard with initial bugs and issues resolved.

➤ **Sprint 7: Final Testing and Stabilization**

- Address any remaining issues or bugs from previous testing phases to ensure the dashboard is stable and reliable.
- Focus on system security and reliability, ensuring the dashboard is secure and robust.

Expected Outcome: Stable and reliable dashboard ready for deployment.

Phase 5: Deployment

➤ Sprint 8: Deployment, Documentation, and Training

- Deploy the dashboard into the SOC production environment, following best practices for configuration and stability.
- Prepare comprehensive documentation, including user guides, technical manuals, and troubleshooting resources for end-users.
- Conduct training sessions for faculty, administrators, and other users to familiarize them with the dashboard's features and functionality.

Expected Outcome: Successfully deployed dashboard, complete documentation, and training sessions conducted.

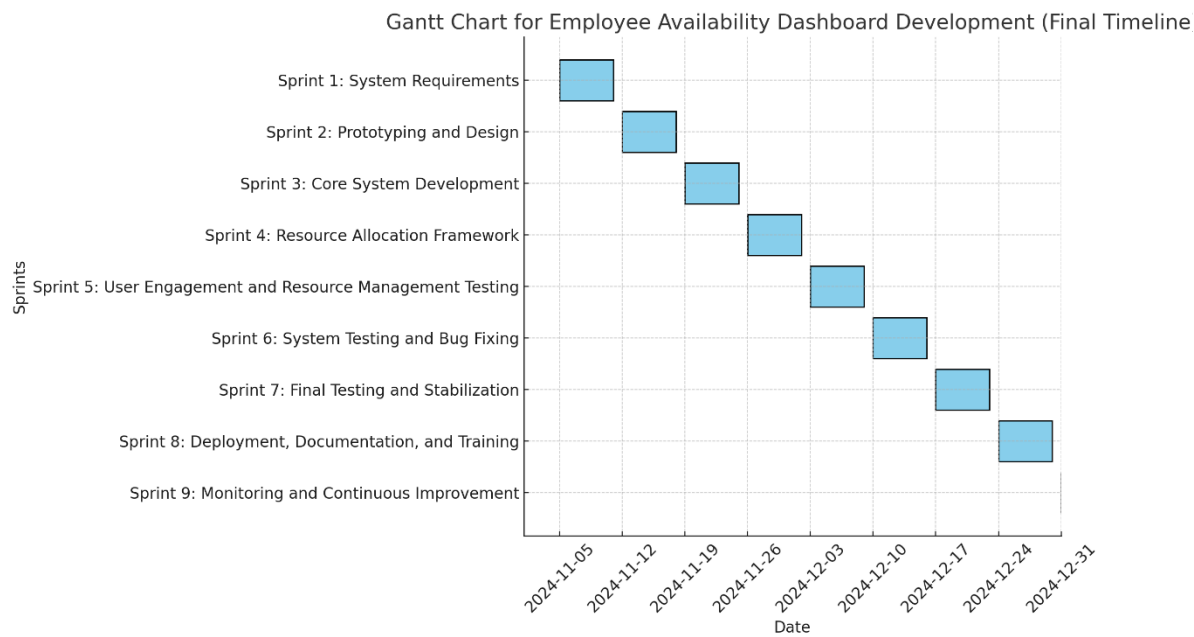
Phase 6: Review and Continuous Improvement

➤ Sprint 9: Monitoring and Continuous Improvement

- Implement monitoring tools to track dashboard performance, user engagement, and system usage metrics.
- Regularly review dashboard usage and feedback to identify areas for improvement or new feature requests.
- Continuously iterate on the dashboard, updating and adapting it based on user feedback and emerging needs to ensure long-term relevance.
- **Tool Used:** Microsoft Power BI will be used for ongoing performance monitoring and reporting, generating real-time insights on dashboard usage and system performance.

Expected Outcome: Ongoing dashboard improvements based on feedback, ensuring adaptability to changing requirements and sustained engagement.

8.0 Gantt Chart



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Prepared by

Student's Signature

Date

Supervisor's Approval

<input type="checkbox"/>	Approve without modification
<input type="checkbox"/>	Approve with modification
<input type="checkbox"/>	Reject

Remark:

Project Supervisor's Signature & Stamp

Date