IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

Internet Of Things

” Implementing IOT In the Workplace”

- Employee Wellness System -

Project Team Members Name's and ID's :

PROJECT GROUP NUMBER ”A” (IN BLACKBOARD): 1	
ID	NAME
2210004542	Darah Al-Qahtani (Leader)
2220004295	Raghed Lisloum
2220005834	Albandari Alnassar
2220006486	Reef Alwarthan
2210002650	Rana Alaqeel

CIS 414 - IT project managment 2024/2025

Instructor: Dr. Albandari Alamer

Submittion Date: Nov 17th

Milestone -2

Table of Contents

Tables:

Figures:

Scope statement

Project Title: IoT Employee Wellness System

Date: November 15, 2024

Prepared by: Reef Alwarthan

Project Summary and Justification

The IoT Employee Wellness System aims to:
- Enhance employee productivity and engagement through real-time wellness monitoring.
- Improve workplace safety by identifying potential health risks using wearable IoT devices.
- Optimize operational efficiency by providing actionable insights into employee wellness trends.
- Address the growing demand for proactive health management and regulatory compliance.

Product Characteristics and Requirements

1. **Wearable Integration:**
   - Collect wellness data (e.g., activity, stress levels) via IoT-enabled devices.
   - Integrate with existing HR and operational systems.
2. **User-Friendly Dashboard:**
   - Visualize employee wellness metrics in real time.
   - Enable HR and managers to identify and address potential health risks.
3. **Alerts and Notifications:**
   - Automatic alerts for critical health parameters.
   - Notifications for team wellness trends and engagement opportunities.
4. **Data Security and Compliance:**
   - Ensure secure storage and processing of sensitive employee data.
   - Adhere to relevant data privacy regulations.
5. **Customization Options:**
   - Allow customization based on organizational roles and employee needs.
6. **Mobile Accessibility:**
   - Enable employees and managers to access the platform via mobile devices.
7. **Analytics and Reporting:**
   - Provide actionable insights through predictive analytics.
   - Generate periodic wellness and performance reports.

Product User Acceptance Criteria

1. **Functionality:**
   - Seamless data synchronization from wearable devices.
   - Comprehensive reporting of wellness trends and metrics.
2. **Ease of Use:**
   - Simplified onboarding process for employees and managers.
   - Intuitive navigation and accessibility across platforms.
3. **Performance and Reliability:**
   - High availability and minimal downtime of the system.
   - Accurate tracking and timely alerts.
4. **Compliance:**
   - Compliance with industry standards and regulations for data security and privacy.

Summary of Project Deliverables

Project Management Deliverables:
- Literature review
- Team contract
- Kick-off meeting
- Stakeholder Register
- Stakeholder Management Strategy
- Project Statement
- Project Charter
- Work Breakdown Structure (WBS)
- Gantt Chart

Product Deliverables:
- Wearable IoT integration framework
- Employee wellness dashboard
- Data analytics and reporting module
- Security protocols and compliance documentation
- User and administrator manuals

Constraints and Assumptions

Constraints:
- Strict adherence to data privacy laws.
- Limited budget for wearable device procurement.

Assumptions:
- Employees will willingly participate in the program.
- Organization's IT infrastructure can support additional IoT devices.

Project Charter: IoT Employee Wellness System

Prepared by: rana alaqeel   **Date:** 11/11/2024

Project Start Day: 20/9/2024   **Project Finish Day:** 1/12/2024

Project Name: IoT Employee Wellness System

Project Manager (or Project Leader): Darah Al-Qahtani, 2210004542@iau.edu.sa.

Project Purpose/Justification:

With advancements on the Internet of Things (IoT), workplaces can now leverage technology to enhance employee wellness, satisfaction, and productivity. The goal of this project is to implement IoT devices, such as wearables, to monitor employee wellness indicators, aiming to improve job satisfaction, health, and productivity. This will be achieved through real-time data collection on health metrics and workplace environmental factors, which can optimize workspace safety and performance.

Project Objectives:

- o **Implement Wearable IoT Devices:** Install IoT devices that monitor health indicators to support workplace wellness.
- o **Enhance Productivity and Satisfaction:** Utilize real-time health and environmental data to improve employee satisfaction and productivity.
- o **Reduce Workplace Incidents:** Use geolocation and biometric monitoring to ensure safety and prevent accidents.
- o **Support Data-Driven Insights:** Collect and analyze data on workplace energy usage and ergonomics to improve workspace effectiveness.

Budget Information:

Total Allocated Budget: $120,000

Primary Cost Allocation: IoT wearable devices, software development, and ongoing maintenance.

The majority of costs for this project will cover **device acquisition, system integration, and development hours**. Based on initial estimates, the project will require approximately **70 hours of labor per week** for development, testing, and integration across the 3-month implementation period.

Success Criteria:

- o Full deployment and active use of IoT devices by employees.

- o Increased employee satisfaction and productivity metrics by 15%.

- o Reduction in workplace incidents related to fatigue or hazardous environments.

- o Positive feedback from employees regarding system usability and wellness support.

Approach:

- o **Conduct Employee Survey**: Develop and distribute a survey to identify critical wellness metrics and employee preferences for wearable device features. This will inform device selection and integration.

- o **Review Industry Best Practices**: Study IoT wellness systems in similar industries, referencing templates and documentation for effective project management and compliance.

- o **Research Data Privacy and Security Tools**: Evaluate software for secure data storage and access control to protect employee wellness data, and ensure adherence to privacy regulations.

- o **Iterative Development and Feedback**: Use an iterative approach for the development of the IoT system dashboard, incorporating employee feedback on usability and functionality after each iteration.

- o **Value Measurement Strategy**: Establish metrics to evaluate system impact, focusing on employee productivity, health benefits, and incident reduction. Assess these metrics both during the project and six months post-implementation.

Roles and responsibilities:

Table 1

Name	Role	Responsibilities	Contact
Darah Al-Qahtani	Project Leader	Oversees project vision and coordination	2210004542@iau.edu.sa
Raghed Lisloum	IoT Technology Expert	Provides technical expertise on IoT devices	2220004295@iau.edu.sa
Albandari Alnassar	Systems Integration Lead	Manages device integration with current IT	2220005834@iau.edu.sa
Reef Alwarthan	Stakeholder Relations Lead	Engages with internal and external stakeholders	2220006486@iau.edu.sa
Rana Alaqeel	Compliance Officer	Ensures documentation and regulatory compliance	2210002650@iau.edu.sa

Sign-Off:

Table 2

Stakeholder Name	Signature
Darah Al-Qahtani	*Darah*
Raghed Lisloum	*Raghed*
Albandari Alnassar	*Albandari*
Reef Alwarthan	*Reef*
Rana Alaqeel	*Rana*

Comments:

Raghed Lisloum (IoT Technology Expert):

"It's critical that we conduct thorough testing on all IoT devices and integrations to avoid any disruptions. I'll provide support for the technical aspects and guide the team in troubleshooting any unexpected issues."

Rana Alaqeel (Compliance Officer):

"We need to ensure all data handling aligns with our privacy regulations. I recommend periodic compliance reviews throughout the project to ensure no security gaps, especially when handling employee wellness data."
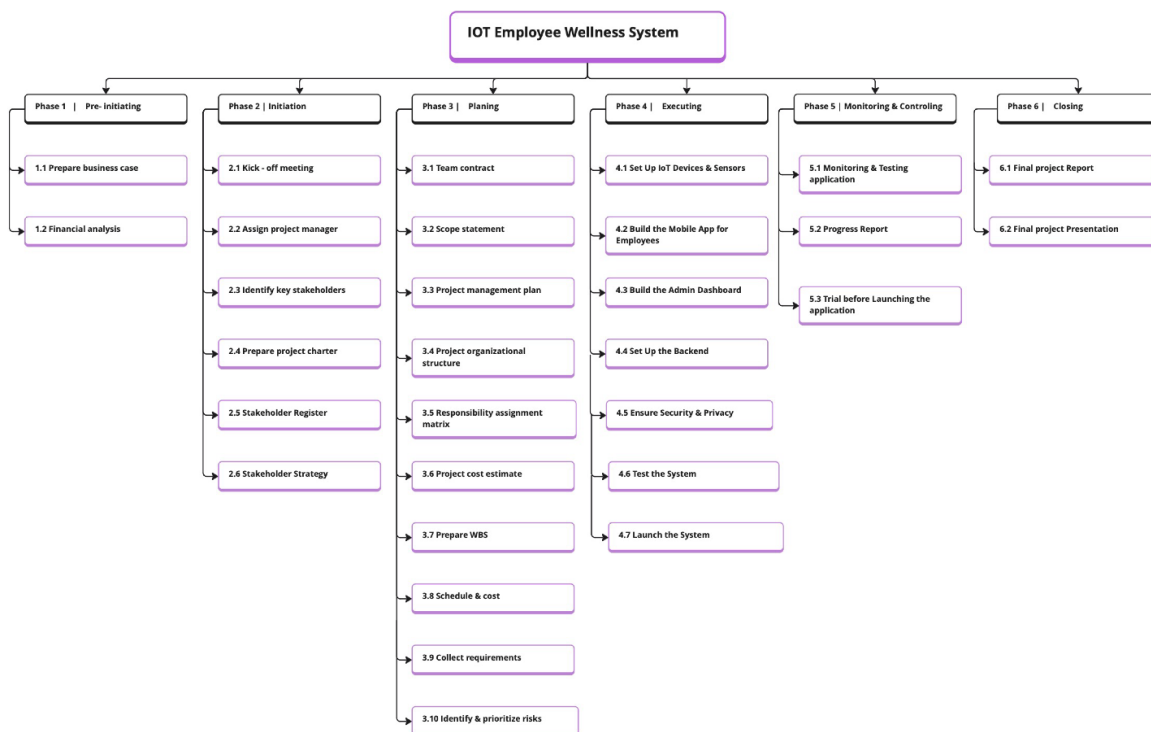
Work Breakdown Structure (WBS)

Prepared by: Darah Al-Qahtani
Date: 11/11/2024.
WBS Organized by Phase

WBS

Work Breakdown Structure

Figure 1

IOT Employee Wellness System

| Phase 1 | Pre- initiating | Phase 2 | Initiation | Phase 3 | Planing | Phase 4 | Executing | Phase 5 | Monitoring & Controling | Phase 6 | Closing |

- 1.1 Prepare business case
- 1.2 Financial analysis

- 2.1 Kick - off meeting
- 2.2 Assign project manager
- 2.3 Identify key stakeholders
- 2.4 Prepare project charter
- 2.5 Stakeholder Register
- 2.6 Stakeholder Strategy

- 3.1 Team contract
- 3.2 Scope statement
- 3.3 Project management plan
- 3.4 Project organizational structure
- 3.5 Responsibility assignment matrix
- 3.6 Project cost estimate
- 3.7 Prepare WBS
- 3.8 Schedule & cost
- 3.9 Collect requirements
- 3.10 Identify & prioritize risks

- 4.1 Set Up IoT Devices & Sensors
- 4.2 Build the Mobile App for Employees
- 4.3 Build the Admin Dashboard
- 4.4 Set Up the Backend
- 4.5 Ensure Security & Privacy
- 4.6 Test the System
- 4.7 Launch the System

- 5.1 Monitoring & Testing application
- 5.2 Progress Report
- 5.3 Trial before Launching the application

- 6.1 Final project Report
- 6.2 Final project Presentation

WBS Dictionary

Prepared by: Darah Al-Qahtani

Date: 12/11/2024.

Table 3

| Level	WBS Code	WBS Name	WBS Description
1	1	Pre-initiation	Conducted before the project is officially Started
2	1.1	Prepare Business Case	Documented study to check the validity of the project
2	1.2	Prepare business case financial analysis	Calculations for financial considerations
3	1.2.1	Calculate the net present value (NPV)	Calculate the expected net gain/loss
3	1.2.2	Calculate return on investment (ROI)	Calculate by predict the costs & benefits
3	1.2.3	Calculate payback period	Estimate the amount of time the project will take to recoup
1	2	Initiation	The starting point of the project
2	2.1	Kick-off Meeting	Stakeholders meeting and reviewing the project goals
2	2.2	Assign project manager	Choose the leader
2	2.3	Identify Key-stakeholders	Determine the main stakeholders
2	2.4	Project Charter	Create a project charter
2	2.5	Stakeholder Register	Official registration of the stakeholders
2	2.6	Stakeholder Strategy	Assign the names with level of influence and interest
1	3	Planning	Point that guides the project execution
2	3.1	Prepare Team Contract	Made a team contract for the project team members
2	3.2	Prepare Scope Statement	Determine the project scope statement
2	3.3	Prepare project management plan	Project overview and organization description
2	3.4	Prepare project organizational structure	Prepare a hierarchy structure to arrange the roles, responsibilities, and authority
2	3.5	Prepare project responsibility assignment matrix	Assign responsibilities to team members for specific tasks or deliverables during a project
2	3.6	Project Cost Estimate	Calculate the approximate amount of money and resources required to complete the project's goals.
2	3.7	Prepare WBS	Create a work breakdown structure for the tasks
2	3.8	Prepare Schedule & Cost	creates a schedule for the project's activities as well as the budget for those tasks
3	3.8.1	Prepare task Resources	Prepare the needed resources for each task
3	3.8.2	Prepare task Duration	Estimating the time needed to do a certain task or activity
3	3.8.3	Prepare task dependencies	Identifying and documenting the relationships between different tasks in a project.
3	3.8.4	Create draft Gantt Chart	Create a preliminary Gantt chart
3	3.8.5	Review and finalize Gantt Chart	Establish the final version
2	3.9	Collect requirements	Determine the needed resources and project requirements
3	3.9.1	User's requirements	Determine the user's requirements in the app
3	3.9.2	Application's system requirements	Determine the application requirements to be done

2	3.10	Identify & prioritize risks	Identify the project possible risks and categorize them based on priority
1	4	Executing	The project implementation & execution
2	4.1	Set Up IoT Devices & Sensors	Deploy and configure IoT devices (e.g., wearables, health sensors) for employees. Ensure all devices are connected and calibrated to monitor health metrics (e.g., steps, heart rate, sleep).
2	4.2	Build the Mobile App for Employees	Develop and configure a mobile application that allows employees to view and interact with their health data in real-time. The app will display metrics like steps, calories burned, heart rate, etc.
2	4.3	Build the Admin Dashboard	Create an admin dashboard for HR or management to view and manage employee wellness data. The dashboard should provide analytics, reporting features, and alerts based on health metrics.
2	4.4	Set Up the Backend	Develop and configure the backend infrastructure that supports data collection, processing, and storage from the IoT devices. This includes setting up databases, cloud services, and APIs for data flow.
2	4.5	Ensure Security & Privacy	Implement security measures to ensure the privacy of employee health data, including encryption, secure data transmission, and compliance with privacy laws (e.g., GDPR, HIPAA).
2	4.6	Test the System	Perform thorough testing on the IoT devices, mobile app, backend, and admin dashboard to ensure all components are functioning as expected. This includes functionality testing, performance testing, and user acceptance testing (UAT).
2	4.7	Launch the System	Deploy the IoT Employee Wellness System to all employees, making it fully operational. Provide final training and support materials, and officially launch the system across the organization.
1	5	Monitoring & controlling	Check the project progress
2	5.1	Monitor & Testing Application	Monitor the project progress and test after each important step
2	5.2	Progress report	Create a progress report
2	5.3	Application Trial	Try the application before launching the application
1	6	Closing	Ensuring that the project is completed successfully, and all its objectives are met
2	6.1	Project Final Report	Create a final project report
2	6.2	Project Final Presentation	Present the project after completion

Gantt chart

Prepared by: Albandari Alnassar

Date: 15/11/2024.

Figure 2
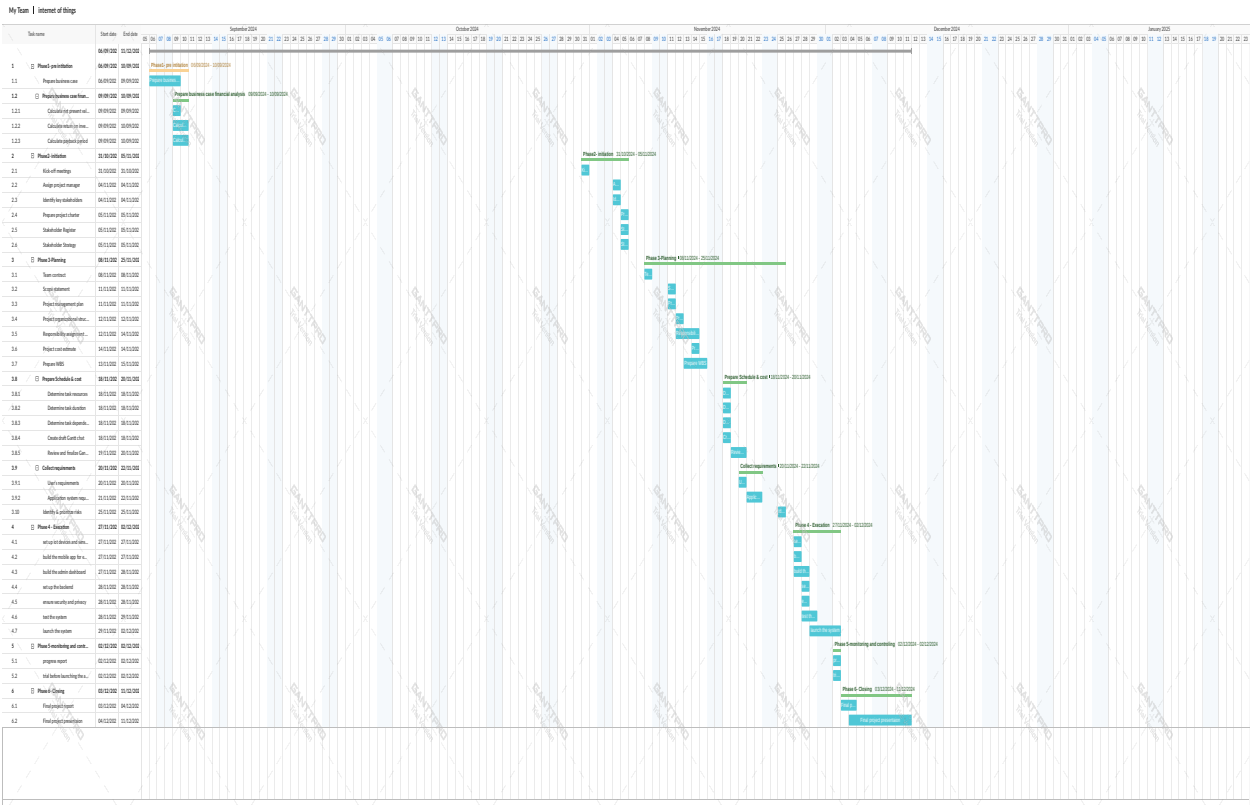
Milestone Report 2 for IOT wellness System

Prepared by: Darah Al-Qahtani

Date: 17/11/2024

Table 4

Milestone	Date	Status	Responsible	Issues/Comments
Scop statement	15/11/2024	Completed	Reef	We are worried about scope creep, as new criteria are constantly introduced.
Project Charter	11/11/2024	Completed	Rana	Maintaining punctuality in tasks sets a great example for the team.
Work Breakdown Structure	11/11/2024	Completed	Darah	I struggled with determining a proper work breakdown.
Work Breakdown Structure Dictionary	12/11/2024	Completed	Darah	-
Gantt chart	15/11/2024	Completed	Albandari	Predicting task durations
Milestone report 2	17/11/2024	Completed	Darah	-
Case study 2	17/11/2024	Completed	Raghed	It took time at first to analyze the case study but at the end it went well.

Case Study 4: The Collaborative IT Project

Prepared by: Raghed Lisloum

Date: 17/11/2024

A large university wanted to implement a new learning management system (LMS) to improve the delivery of online and hybrid courses. The project was a collaborative effort between the IT department, the academic affairs office, and the faculty.

The project team followed a well-structured approach:

1. Thorough needs assessment: The team conducted a comprehensive survey of faculty, students, and administrative staff to understand the requirements and pain points of the existing system.

2. Collaborative decision-making: The team involved stakeholders from various departments in the evaluation and selection of the new LMS, ensuring that their needs were adequately addressed.

3. Phased implementation: The team adopted an iterative approach, rolling out the new system in phases and providing training and support to users along the way.

4. Continuous improvement: The team established feedback mechanisms and regularly reviewed the system's performance, making adjustments and updates based on user feedback.

The collaborative approach and the team's commitment to meeting the diverse needs of the university community led to a successful implementation of the new LMS. The system was widely adopted by faculty and students, and it significantly improved the quality and flexibility of online and hybrid learning experiences.

Questions:

1. How did the collaborative approach to this IT project contribute to its success?

They made sure that the stakeholders such as faculty, students and administrative staff are involved in system stages and decision making . Also, the detailed needs assessment helped the group to understand the user's needs which contributed to useful system LMS and made it succeed.

2. What strategies did the project team employ to ensure effective stakeholder engagement and buy-in?

The team conducted surveys involving all stakeholders, which made the stakeholders feel like their needs are seen and heard .Also, providing a way for stakeholders to give their feedback and express their opinions and that made them mor engaged .

3. What lessons can be learned from this case study that can be applied to other IT projects in an educational setting?

That it is very important to provide the right system for the users needs and this can only happen by involving the stakeholders in early stages, If you understand the stakeholders and make them engaged in your system and hear their opinions . Also, as a IT project manager and employees commitment is a very important key to ensure that your project will success .