**SyncInCorp Crèche Management Mobile Application**

**Sprint 3 :**

**Project:** Crèche Management Mobile Application  
**Team:** SyncInCorp  
**Module:** INSY7315 - Work Integrated Learning  
**Institution:** Varsity College  
**Facilitator:** Mr D S Govender  
**Period:** March 31, 2025 - October 31, 2025

### **Session 7-8( SPRINT 3)**

**By Nosipho kubheka and Minenhle Dladla**

## **1. Sprint Goal**

To conduct a full **domain analysis**, complete the **user journey diagram**, finalize **architecture and technology decisions**, and develop **UI mock-ups** for presentation to the client for feedback and validation.

(Atlassian, 2024; ProjectManager.com, 2025)

**2. Team Availability**

| **Team Member** | **Role** | **Availability (Hours/Week)** | **Notes** |
| --- | --- | --- | --- |
| **Minenhle Dladla** | Project Manager / UX-UI Designer | 100% | Oversees sprint deliverables and client presentations. mock-up presentation and all presentations. |
| **Msizi Lamula** | Back-End Developer | 100% | Available weekdays; focuses on architecture decisions and coding |
| **Amahle Gcumisa** | Back-End Developer | 80% | Supports Msizi in defining data models and APIs and coding . |
| **Lungelo Duma** | UX/UI Designer | 75% | Available most weekdays; focuses on user journey and mock-ups. |
| **Shaldon Sindraj** | Documentation & Front-End Support | 50% | Supports in reviewing requirements and ensuring clarity. |
| **Darren Dhanasar** | Documentation Specialist | 50% | Supports in reviewing requirements and ensuring clarity. |
| **Nosipho Kubheka** | Documentation & QA | 80% | Responsible for compiling domain documentation. Supports in reviewing requirements and ensuring clarity sprint documentation. |

(SyncInCorp, 2025)

**3. Domain Analysis**

### **3.1 Understanding the Domain**

The project domain is **Early Childhood Education (ECE)** — specifically, **crèche management**. The **Crèche Management Mobile Application** aims to simplify the administrative and communication processes within childcare institutions by integrating registration, attendance tracking, event management, and payment systems into one cohesive mobile platform.

**3.2 Business Processes**

| **Process** | **Description** |
| --- | --- |
| **Parent & Child Registration** | Capture and maintain data for parents, children, and emergency contacts. |
| **Attendance Tracking** | Track and update attendance records in real-time. Notify parents of absences. |
| **Event Management** | Schedule events (e.g., meetings, trips, holidays) and notify parents. |
| **Payments & Billing** | Handle tuition and meal payments via a secure gateway. Generate invoices and receipts. |
| **Communication & Announcements** | Allow the crèche to send messages and updates to parents. |
| **Media Sharing** | Enable teachers to upload and share photos/videos with parental consent. |
| **Meal Ordering** | Parents pre-order meals for their children and manage dietary preferences. |

(SyncInCorp, 2025)

**3.3 Stakeholders**

| **Stakeholder** | **Role / Interest** | **Expectations** |
| --- | --- | --- |
| **Client / Crèche Owner** | Project sponsor | Efficient app to manage operations and parent communications. |
| **Parents** | End users | Easy access to attendance, payments, events, and communication. |
| **Teachers / Staff** | Operational users | Simple attendance tracking and media uploading. |
| **Children** | Beneficiaries | Enhanced learning environment and safety. |
| **WIL Coordinator (Mr. Govender)** | Academic supervisor | Oversight and evaluation of WIL learning outcomes. |
| **Development Team (SyncInCorp)** | Project executors | Clear scope, teamwork, and successful project delivery. |

**3.4 Existing Systems & Data**

Most crèches rely on **manual processes** (paper-based registration, attendance sheets, WhatsApp communication). This app aims to **digitize** these processes, offering real-time, secure, and centralized access for staff and parents.

(Govender, 2025)

**4. User Journey Diagram**

The **User Journey Diagram** visually represents how users interact with the system from registration to everyday use.

| **Step** | **User** | **Action** | **System Response** |
| --- | --- | --- | --- |
| 1 | Parent | Registers and logs in | System verifies credentials and sets up profile |
| 2 | Parent | Adds child details and emergency contacts | Data stored in secure database |
| 3 | Teacher | Views assigned children | Fetches class list from backend |
| 4 | Teacher | Marks attendance | Updates attendance table: parent receives notification |
| 5 | Parent | Views event notifications | Calendar syncs with personal device |
| 6 | Parent | Makes tuition/meal payments | Payment gateway processes transaction: receipt generated |
| 7 | Admin | Posts announcements or media | Notifications sent to all relevant users |
| 8 | Parent | Logs out | Session ends securely; data saved |

**5. System Architecture and Technology Choices**

| **Layer** | **Component / Technology** | **Purpose** |
| --- | --- | --- |
| **Frontend (Mobile App)** | React Native | Cross-platform mobile interface |
| **Backend (API Layer)** | Node.js + Express.js | API and business logic |
| **Database** | Firebase Firestore | Real-time cloud database |
| **Authentication** | Firebase Auth (OTP/Email) | Secure login and role management |
| **Cloud Storage** | Firebase Storage | Media (photos/videos) storage |
| **Payment Gateway** | PayFast | Secure payment handling |
| **DevOps** | GitHub Actions + Docker | CI/CD pipeline |
| **Notifications** | Firebase Cloud Messaging | Real-time push notifications |

(Choudhary, 2024; Kellton Tech, 2024; SyncInCorp, 2025)

### **Architecture Overview**

The system architecture follows a **three-tier model**:

1. **Presentation Layer** — React Native mobile app for parents, staff, and admin.
2. **Application Layer** — Node.js API managing requests, authentication, and logic.
3. **Data Layer** — Firebase (Firestore + Storage) managing data persistence and media files.

This ensures scalability, maintainability, and real-time data synchronization across devices.

6. Mock-Up Development and Client Presentation

**6.1 Mock-Up Overview**

**The mock-up demonstrates key app features:**

* **Login & Registration Screens** (with OTP or Email Authentication)
* **Parent Dashboard** (attendance, payments, notifications)
* **Teacher Dashboard** (class management and media upload)
* **Admin Panel** (user management, events, payments overview)

(Mock-ups designed by Minenhle Dladla & Lungelo Duma using Figma, 2025)

### **6.2 Client Presentation Summary**

* **Date:** 23 September 2025
* **Attendees:** SyncInCorp team and client representative
* **Feedback:** Positive response; client suggested adding a “removing Digital Delivery of academic ” .Also fix the Architecture diagram .
* **Action:** The feature has been added to the backlog for Sprint 4 consideration.

**7. Deliverables for Sprint 3**

| **Deliverable** | **Description** | **Responsible** | **Status** |
| --- | --- | --- | --- |
| Domain Analysis Document | Full understanding of the crèche management domain | Documentation Team | ✅ Completed |
| User Journey Diagram | Visual and textual representation of user flow | UX/UI Team | ✅ Completed |
| Architecture Document | Agreed upon technologies and architecture layers | Backend & DevOps Team | ✅ Completed |
| Mock-Up | Figma-based mobile app prototype | UX/UI Team | ✅ Completed |
| Client Presentation | Feedback session with stakeholders | Project Manager | ✅ Completed |

# **References**

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