Task 2: Context Object & Requirements Source

Context Objects

System Context

Subject Facet

System Context Object	Properties
Members	-Member ID -Name -E-mail -Role -Status
Club	- Club ID - Name - Description - Category - Member List
Event	- Date/Time - Location - Budget
Venue	- Name - Capacity - Location
Budget	- Amount

Usage Facet

System Context Object	Properties
Student (User Group)	- Maximum 12, 000 of active users - Required information of club to know what a club do - Required information of club event to know details about event - Right to join and leave a club - Right to vote for the event
Club Admin (User Group)	- Maximum 1000 club members can be added - Access to view club member status - Access to add and remove a club member - Access to manage vote related activity - Interaction with University Financial Management System to process financial related issue - Interaction with Campus Space Reservation Database to know the availability of venue - Communication with System Admin to have the reservation of venue
System Admin (User Group)	- Access to manage user account - Maximum 50 clubs can be created - Access to create and remove a club - Approve or reject club venue reservation - Communication with Club Admin to notify if club violates the rule

IT System Facet

System Context Object	
Web Server	• Maximum downtime: 2 hours per 24h • HTTPS enabled;
Database Server	• Daily backup at 12 AM • Max response time < 300ms • Supports 10,000+ users
Client Browser (User Device)	• Must support modern browsers (Chrome, Firefox, Edge) • JavaScript enabled
Financial System API	• Real-time sync • JSON data format • Response time < 1s • Available 24h with maximum 2 hours downtime • Requires API key authentication
Venue Booking API	• Real-time sync • JSON data format • Response time < 1s • Available 24h with maximum 2 hours downtime • Requires API key authentication
Authentication System	• All content access with only corresponding roles • Enable 2 Authentication • Sessioning authentication with 15 minutes idle expire
System Administrator Console	• Role-based access only • Logs all changes • Manage all system data

University Financial Management (Interaction Models)	- Approve club financial proposal - Required financial proposal and report from Club Admin for record purpose
Campus Space Reservation (Interaction Models)	- Provide venue that are still available - Interaction with System Admin to confirm venue reservation for club event

Development Context

Development Context Object	Source	Explanation
Python Django	IT System Facet (Web Server)	Full-stack framework for club/event management; combines frontend templates and backend APIs.
Microsoft Azure App Service	IT System Facet (Web Server)	Hosts Django app with auto-scaling; guarantees 99.9% uptime for 12k+ users.
IBM DB2	IT System Facet (Database Server)	Production database for member lists, budgets, and venue bookings; ACID-compliant and GDPR-aligned.
Microsoft Outlook API	Usage Facet (Students)	Sends event reminders and booking confirmations via university Outlook emails.
Microsoft Entra ID	IT System Facet (Authentication)	Manages role-based access (Students/Admins) with 2FA and session timeouts.
Azure SQL Database	IT System Facet (Database Server)	Handles staging/testing workflows and real-time voting data; mirrors production.
Django REST Framework	Usage Facet (University Financial)	REST APIs for budget tracking and integration with financial systems (JSON sync).
Azure DevOps	IT System Facet (System Admin)	CI/CD pipelines enforce system limits (50 clubs max, 1k members/club).
Microsoft Power BI	Subject Facet (Budget)	Generates visual reports for Club Admins to monitor expenses and remaining funds.
Azure Load Balancer	IT System Facet (Web Server)	Distributes traffic during voting peaks to maintain <300ms response times.
Postman	IT System Facet (Venue Booking API)	Tests real-time sync with Campus Space Reservation Database and Entra ID auth.
pytest	IT System Facet (Web Server)	Validates Django APIs for budget/venue modules (ensures <1s response time).
Microsoft Defender for Cloud	Subject Facet (Members)	Monitors GDPR/FERPA compliance; anonymizes student emails and enforces retention.

Requirements Sources

Requirements Sources	System Context Objects
Stakeholders	Student
	Club Admin
	System Admin

Requirements Sources	System Context Objects
Systems	University Financial Management System
	Campus Space Reservation Database
	Authentication System

Requirements Sources	System Context Objects
Documents	Club
	Venue
	Budget
	Web Server
	Database Server
	Client Browser