FACULTY OF COMPUTING & INFORMATICS

CSE6224 - SOFTWARE REQUIREMENTS ENGINEERING

TERM 2420

PART 1: Campus Wellness Portal with Medical System and Fitness Center Integration

TT6L – GROUP 5 – Task 2-Context Object

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2.0 Context Objects and Requirements Sources

2.1 Material Objects

1. Students:

   Campus Wellness Portal's primary end-users are students. They use the system to schedule appointments with the campus health center, enroll in fitness classes, establish and monitor well-being goals, and review mental, physical, and emotional wellness educational content. Their use and feedback are most critical in developing user-friendly improvements, and their diverse equipment usage requires that the system be simple to use, easy to access, and forgiving of diverse digital abilities.

2. Health Center Staff:

   Health Center Personnel include physicians, nurses, counselors, and support staff who employ the Portal for effective management of healthcare service delivery. They manage appointment schedules, hold and retrieve patient data, and perform online consultations where possible. Their functionality requires the system to be confidentiality-friendly, return real-time information, and workflow-enhanced functionality, with provision for compliance with medical data confidentiality and facilitation of overall availability of healthcare for students.

3. Fitness Center Staff:

   Fitness Center Staff comprise instructors, trainers, and fitness administrators who manage the fitness-related activities of the university. Through the Portal, they plan fitness class schedules, track attendance, promote wellness programs, and manage participant registration. Their use of the system ensures appropriate scheduling of fitness resources and alerting of students with timely notice of classes, workshops, and fitness challenges.

4. Personal Devices:

   Personal Devices are the laptops, tablets, and smartphones most of the students and staff use to access the Portal. Because these devices vary so much in screen size, operating system, and browser support, the Portal must be built with a responsive and flexible layout to provide seamless performance. Cross-platform compatibility is required so that users can use all the features seamlessly, whether accessing from a dorm room, gym, or remotely.

5. University Servers and Data Centers:

    University Servers and Data Centers are the web services' back-end facilities supporting the application logic and databases of the Campus Wellness Portal. They provide secure storage for sensitive information such as medical records, fitness participation information, and personal wellness objectives. The servers must be capable of providing high availability, data redundancy, and robust cybersecurity features such as encryption and access control to maintain security against unauthorized access and data breaches.

6. Campus Network Infrastructure:

    The Campus Network Infrastructure is a wireless and wired infrastructure that grants access to the Portal as Wi-Fi networks, VPN facilities, firewall facilities, and network monitoring facilities which grant safe, high-speed, and reliable access. Efficient and reliable campus and remote-access network infrastructure is a necessity so that trainers, students, and employees get hassle-free access to the Portal irrespective of being on-campus or off-campus.

2.2 Immaterial Objects

1. Student Wellness Database:

   Shared electronic database of student wellness activity like appointment history, fitness class attendance, individualized wellness goals, counselor comments, and direct message. All the wellness data come alive and become actionable in this single database and enables integrated student well-being.

2. Medical Appointment Scheduling System:

   An integrated electronic system allowing students to schedule, reschedule, and cancel medical appointments on-campus with on-campus medical personnel. It can be imported into personal calendars and allows for automatic reminders to improve attendance and timely health access.

   An online subsystem that offers sign-up management of campus fitness class discovery, attendance tracking, and sign-up for campus fitness classes. It offers real-time seat availability, waitlist feature, and attendance confirmation to augment the lively student life.

3. Fitness Class Management System:

   A push-based messaging system which provides custom reminders and health reminders to an individual patient through email, SMS, or portal messaging. Some examples are appointment reminder, exercise reminders, mental health counseling, and seasonal wellness reminders.

4. Wellness Notifications System:

   Notifies and reminds students through portal messaging or e-mail alerts and healthy tips.

5. User Authentication and Authorization Services:

   A safe electronic gatekeeping mechanism authenticating users against institutional credentials (i.e., student ID and password). It also enforces role-based access controls to permit viewing or editing of sensitive wellness data by legitimate persons only.

6. Feedback Collection System

Web survey and form engine used to gather user opinion regarding wellness services, appointment quality, and web site accessibility. User opinion drives continuous quality enhancement of student well-being services.

7. Data Security Framework:

A multi-level security architecture with several layers of encryption protocols, secure data channels (SSL/TLS), and legal requirements such as HIPAA or FERPA. It ensures the confidentiality and integrity of the health-related and personal information of the students.

8. Wellness Analytics Models:

Advanced data analytics systems tracking levels of engagement, service usage patterns, and sentiment around feedback. Data informs predictive student need, program delivery enhancement, and facilitation of evidence-based decision-making for well-being interventions.

2.3 Requirements Sources

i. Stakeholders

Table 1 Stakeholders

Context	Example
System	University Health Center Staff
	Fitness Center Staff
	Students
	System Administrator
Development	Software Developers
	UX/UI Designers
Requirements Engineering	IT Security Officers
	Business Analysts
	Requirements Engineers

ii. Document

Table 2 Document

Type of Documents	Example
General Binding	Data Privacy Regulations (e.g., HIPAA-like for students)
Organization-specific	University Medical Center Guidelines
	Fitness Center Class Scheduling Procedures
Product / System-specific	Existing Health Appointment System Manuals
	Fitness Class Booking System Manuals
	UX Best Practices Documentation

iii.System

Table 3 System

Type of System	Example
Predecessor Systems	Existing Health Center Appointment Booking System
	Fitness Class Booking System
Benchmarking Systems	Other Institution Campus Wellness Portals
Other Domain Systems	E-health Appointment Apps Fitness Mobile Apps

	Healthcare Student Portals