FACULTY OF COMPUTING AND INFORMATICS

CSE6224 – SOFTWARE REQUIREMENTS ENG

GROUP: G07

SESSION: TT4L

PROJECT TITLE: University Communication and

Services Portal with Campus Management System and SMS Gateway Integration

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Date: 25 May 2025

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1.0 Introduction to Kano Model

The Kano Model, introduced by Professor Noriaki Kano in the 1980s, is a theory used to classify customer needs and expectations into three categories—dissatisfiers (must-be attributes), satisfiers (one-dimensional attributes), and delighters (attractive attributes). Unlike traditional linear models of customer satisfaction, the Kano Model recognizes that not all features impact satisfaction equally.

- **Dissatisfiers** are basic expectations. If missing, users become frustrated, but their presence doesn't increase satisfaction.
- **Satisfiers** are directly proportional to satisfaction—the better they perform, the more satisfied users are.
- **Delighters** are unexpected features that pleasantly surprise users and significantly boost satisfaction, but their absence won't cause dissatisfaction.

The model uses a pair of functional and dysfunctional questions to determine how users react to the presence or absence of a given feature, and it helps teams prioritize features during the design phase—especially when resources are limited.

For this project, the Kano Model is applied to understand user expectations across students, lecturers, parents, and administrators within the university ecosystem. This will guide us in refining and prioritizing system features based on user perception rather than assumption.

2.0 Justification for Using Kano Model

We chose the Kano Model for the following reasons:

- User-Centric Prioritization
  The model helps us understand not just what users say they want, but how those features actually impact their satisfaction. This is crucial for a university portal that serves multiple stakeholders with differing priorities.

- Distinction Between Expectations and Delights
  In student systems, some features (e.g., viewing grades) are mandatory, while others (e.g., SMS alerts or downloadable PDFs) are unexpected but highly appreciated. The Kano Model allows us to capture this nuance and avoid over-investing in features that add little perceived value.

- Suitable for Early Design Stages
  The Kano method is one of the few approaches that works effectively even before a system is built. This allows us to design with intention rather than trial-and-error.

- Supports Feature Trade-Off Decisions
  Our team is resource-constrained. The Kano classification helps us decide which features to prioritize (e.g., must-be and one-dimensional) and which to delay or leave out (e.g., delighters that are too costly or technically difficult).

- Flexible Across Stakeholders
  The model is effective for capturing input from all our user groups—students, parents, lecturers, and admins—despite their different roles and expectations.

- Simplicity and Reliability
  The traditional Kano questionnaire is relatively simple to explain and execute, especially compared to more complex models like PRCA or importance grids, which require advanced statistical analysis or subjective interpretations.

By applying the Kano model during our elicitation phase, we aim to build a system that not only meets user requirements but also exceeds expectations in areas where it matters most.

3.0 Stakeholder Categories and Roles

Table 1: Stakeholders and Roles Table

Stakeholders	Description	Role in System
Students	Primary users accessing grades, attendance, timetable, billing info	End users; provide feedback on usability and needs
Lecturers	Upload grades/materials, send announcements, manage assessments	Feature contributors; validate academic tools
Parents	Monitor children's academic and financial status via SMS or portal	Secondary users; evaluate notification relevance
Admins	Approve classroom bookings, send announcements	Operational oversight; assess system efficiency

4.0 Elicitation Techniques

4.1 Description of Techniques

To gather comprehensive requirements for the University Communication and Services Portal, our team plans to use a combination of elicitation techniques. These were selected to ensure effective coverage across all stakeholder groups: students, parents, lecturers, and administrators.

4.1.1 Brainstorming Sessions

- Internal brainstorming sessions will be conducted within the team to interpret initial findings, generate innovative ideas, and collaboratively define high-priority features.
- These discussions will support decision-making regarding functional priorities and usability enhancements.
- This will help consolidate scattered feedback into actionable design requirements.

4.1.2 Surveys and Questionnaires

- We will design structured Google Forms using Likert-scale items (e.g., Strongly Agree to Strongly Disagree) to measure user satisfaction and expectations for specific features.
- Kano-style questions such as "How would you feel if this feature were present/absent?" will be included to categorize responses into dissatisfiers, satisfiers, and delighters.
- This technique is expected to efficiently gather broad, quantifiable feedback from the student population.

4.1.3 Structured Stakeholder Interviews

- We plan to conduct focused interviews with key stakeholders including university administrators, IT personnel, lecturers, and selected students and parents.
- The objective is to clarify role-specific needs, identify usability issues, understand technical limitations, and gather feature suggestions.
- These sessions are expected to reveal deeper insights not easily captured through surveys.

4.1.4 Prototyping

- We will develop low-fidelity mockups (using tools such as Figma) for core pages like the dashboard, grade report view, billing, attendance, and announcements.
- These prototypes will be reviewed by a sample group of users to validate navigation flow and interface layout.
- Feedback obtained will be used to refine system requirements and align user expectations with system capabilities.

4.1.5 Perspective-Based Reading (PBR)

- PBR will be applied during requirement review stages, where draft requirements and scenarios will be evaluated from different stakeholder perspectives.
- This is intended to uncover ambiguities, inconsistencies, and overlooked needs from each user role (e.g., student, parent, lecturer, admin).
- This technique will support validation of completeness and clarity of the documented requirements.

5.0 Elicitation Plan

Table 2: Elicitation Plan Table

Technique	Purpose	Target Stakeholders	Planned Tools/Method	Expected Outcome
Brainstorming	Identify initial ideas, system features, and assumptions	Internal project team	Team whiteboard session via Microsoft Teams	Preliminary feature list, user roles, assumption list
Structured Interviews	Clarify pain points, needs, and expectations in detail	Students, parents, lecturers, IT admins	Semi-structured interviews via MS Teams, role-based question set	Rich qualitative feedback, feature requests, stakeholder frustrations
Questionnaires	Gather large-scale input and quantify preferences	Students, parents, lecturers, IT admins (20+ respondents across faculties)	Google Form with Kano-style questions	Categorized feature preferences (dissatisfiers, satisfiers, delighters)
Prototyping	Visualize key pages and verify user flow	Students (for feedback)	Low-fidelity mockups in Figma, user walkthroughs + comments	Interface validation, feedback on usability and navigation
Perspective-Based Reading	Ensure requirement coverage and clarity from all user roles	Internal reviewers role-playing as stakeholders	PBR on SRS draft using Microsoft Word comments	Annotated SRS, gaps flagged, revised requirements

6.0 Requirement Classifications

To gather comprehensive requirements for the University Communication and Services Portal, our team plans to use a combination of elicitation techniques. These were selected to ensure effective coverage across all stakeholder groups: students, parents, lecturers, and administrators.

Table 3: Requirements Classifications Table

Requirement	Kano Category	Justification
Student Login Access	Dissatisfier	Core requirement for system entry; without login, users can't access any feature.
Parent Login Access	Dissatisfier	Essential for viewing child-related academic and billing data.
Lecturer Login Access	Dissatisfier	Required to manage grades, announcements, and class materials.
Admin Login Access	Dissatisfier	Fundamental to system operation; without this, admin cannot perform approvals or communication tasks.
Two-Factor Authentication	Satisfier	Adds security; enhances trust but not mandatory for usability.
View Grades	Dissatisfier	Key feature for academic monitoring; expected by both students and parents.
View Timetable	Satisfier	Helps students plan but not critical for using other services.
View Attendance	Dissatisfier	Parents and students expect this to track progress; omission leads to complaints.
View Billing Info	Dissatisfier	Critical for financial transparency; users need to track payments.
Book Classroom	Satisfier	Adds flexibility and control to students' usage of campus spaces.
Approve Classroom Bookings (Admin)	Dissatisfier	Ensures proper resource management; failure to approve creates disruptions.
Upload Materials (Lecturer)	Satisfier	Improves student learning; enhances engagement but system usable without it.
Submit Grades (Lecturer)	Dissatisfier	Essential academic function; delay or error causes institutional issues.
Send Announcements (Lecturer/Admin)	Satisfier	Keeps users informed; improves communication but not system-critical.
View Announcements	Satisfier	Students expect timely updates; improves awareness and engagement.

Schedule Assessment (Lecturer)	Satisfier	Enables structured learning flow; useful but not critical.
Sync Academic Records	Dissatisfier	Crucial for up-to-date information; inaccuracies damage trust.
Notify via SMS	Delighter	Unexpected convenience; creates trust and improves parent awareness.
User-Friendly Interface	Satisfier	Enhances user experience; system is functional without it but satisfaction drops.
Accessibility Features	Dissatisfier	Needed for inclusive access; legal and ethical expectation.
System Reliability	Dissatisfier	Downtime or bugs disrupt critical operations and erode confidence.
Application Tutorial	Satisfier	Improves onboarding and usability; not essential but very helpful.

7.0 Summary

This document outlines the application of the Kano Model to guide requirement elicitation for the University Communication and Services Portal. By categorizing features into dissatisfiers, satisfiers, and delighters, the project team aims to prioritize functionalities that significantly affect user satisfaction while ensuring essential services are not overlooked.

The system targets four main stakeholder groups—students, lecturers, parents, and adminis— each with unique needs and expectations. Through techniques such as brainstorming, structured interviews, questionnaires, prototyping, and Perspective-Based Reading (PBR), the team ensures diverse and comprehensive input is gathered.

The elicitation plan clearly maps each technique to its purpose, tools, and target stakeholder groups, providing a roadmap for structured requirement gathering. Using the Kano Model to classify requirements further supports decision-making, especially in balancing feature desirability with resource constraints.

In conclusion, this approach fosters a user-centered design process that not only meets but also aims to exceed stakeholder expectations—laying the groundwork for a system that is functional, efficient, and well-aligned with actual user needs.

Change Log Table

Version	Date	Author	Changes Made
v1.0	23 May 2025	Teoh Xuan Xuan	Added project cover page; created version history log table
v1.1	24 May 2025	Teoh Xuan Xuan	Update Project Title and Table of Content
v.1.2	25 May 2025	Yang Jia En	Changed table of contents, updated contents
v1.3	25 May 2025	Teoh Xuan Xuan	Check Alignment, header and etc.