

Applied HCI (CS3014) – Midterm Exam Solution Guide

Case Study: Smart Campus Navigation System

Q1. Identify 5 behavioral variables relevant to the users (5 marks)

Behavioral Variable	Explanation
Technology proficiency	Comfort and familiarity with smartphones and apps (e.g., Mrs. Khan is low-tech; Bilal is tech-savvy).
Mobility and accessibility	Physical ability and reliance on assistive tools (e.g., Ayshum is visually impaired; others are able-bodied).
Frequency of campus visits	Regular vs. occasional visitors (students/faculty vs. parents/visitors).
Goal orientation	Primary reason for using the app — navigation, time-saving, task efficiency, or accessibility.
Context of use	Situations and environments where users interact with the app (on-the-go navigation, indoor campus maps, etc.).

Q2. Map each interview subject to the identified behavioral variables (5 marks)

Interviewee	Tech Proficiency	Mobility/Accessibility	Frequency	Goal Orientation	Context of Use
Ali	High	Fully mobile	Regular	Find classes easily	Navigating between classes
Ayshum	Moderate–High (uses assistive tech)	Visually impaired	Regular	Accessibility & independence	Using voice-guided directions
Sara	High	Fully mobile	Regular	Locate available meeting rooms	Office/classroom scheduling
Bilal	High	Fully mobile	Regular	Time efficiency & avoiding crowds	Moving quickly between buildings
Mrs. Khan	Low	Fully mobile	Occasional	Campus exploration & visiting buildings	Seeking assistance with guidance
Ahmad	Moderate	Fully mobile	Regular	Efficiency in maintenance tasks	Finding repair locations quickly

Q3. Identify 3 significant behavior patterns (6 marks)

- Frequent vs. Occasional Users:** Frequent users (students, faculty, staff) depend on efficient and fast navigation. Occasional users (parents, guests) need simple, guided interfaces.
- Tech-Savvy vs. Tech-Anxious Users:** Younger users and staff prefer interactive, app-based solutions. Visitors like Mrs. Khan may prefer voice assistance or simpler layouts.
- Accessibility-Oriented vs. Efficiency-Oriented Users:** Users like Ayshum prioritize accessibility and voice features, while others (Bilal, Sara) focus on speed and convenience.

Q4. Expand description of attributes and behaviors for one Primary Persona (10 marks)

Chosen Primary Persona: Ali – First-Semester Student

Justification: Ali represents the largest target user group — new students who frequently get lost, use mobile devices regularly, and need intuitive, location-based assistance. Designing for Ali ensures usability for most campus users while remaining adaptable to others.

Attribute	Description
Name	Ali Raza

Age	19
Occupation	BS Software Engineering (1st semester)
Technology Use	Uses Android smartphone daily, familiar with Google Maps, prefers visual cues
Goals	Reach classes on time, explore campus independently, find quick routes
Frustrations	Gets confused by building codes, crowded hallways, and outdated maps
Behaviors	Checks map before moving, prefers visual plus text-based directions
Motivation	Wants to feel confident and independent on campus
Quote	"I just want an app that helps me get to class without being late."

Q5. Write down one context scenario for your primary persona (4 marks)

It's Ali's first week of classes. He opens the Smart Campus Navigation App to locate **CS-102** in **Building B**. The app detects his location, provides a route with turn-by-turn voice and visual cues, and alerts him that the usual hallway is crowded. Ali follows the suggested alternate path and reaches his classroom on time. Later, he bookmarks the room for future use.

Suggested Marking Guide

Question	Marks	Criteria for Full Marks
Q1	5	5 relevant, well-explained behavioral variables
Q2	5	Clear mapping showing distinct differences
Q3	6	3 distinct, well-justified behavior patterns
Q4	10	Comprehensive persona with justification
Q5	4	Clear, realistic context scenario aligned with persona
Total	30	—