



Interviewing, Scenarios and Ethnography Technique for gathering User Requirements

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1 Introduction

In Software Engineering, understanding what users truly need is both an art and a science. Before a single line of code is written, we must first listen, observe, and imagine the world through the eyes of the people we are building for. This process, called requirements gathering, is the foundation of every successful system, whether it's a government complaint portal in Nepal or an online booking app for travellers. To do this well, we use different techniques. Interviewing is one of the most common techniques. In this technique, we sit down with users, ask some questions, and try to capture their needs and goals from the questions we have asked.

[1] Requirements gathering is frequently called as requirements elicitation because the good requirements cannot just be collected from the stakeholders but must be discovered.

But in some cases, people cannot explain their needs, or they might not have realised it. That's where Ethnography comes in. By quietly observing users in their real environments, we uncover hidden behaviours, cultural patterns, and unspoken pain points that interviews might miss. Once we have gathered insights, we bring them to life through scenarios and use cases. Scenarios tell stories like how a student books a hostel room online or how a farmer files a complaint using a mobile app.

Use cases, on the other hand, break those stories into structured steps that developers can build from. Together, these tools—interviews, ethnography, scenarios, and use cases—help us to design software that's not just functional, but meaningful. They remind us that behind every requirement is a real human being with real hopes, challenges, and dreams.

2 Objective

- Identifying the advantages and limitations of requirements gathering methods.
- Learning how ethnography helps uncover hidden user needs.
- Compare and contrast ethnography and interviewing techniques.

3 Interviewing Technique

Interviewing Technique is a kind of tools used by a person asking the questions to get the useful information. In software analysis and design interviewing is a kind of gathering information. Interview can be opened interview or closed interview. Basically opened interview means that kinds of interview techniques where the question are not predefined, question is made at the time of interview. Whereas, closed interview means that kinds of interview techniques where the questions are predefined.

3.1 Interviewing Technique For Requirement Gathering

It is one of the most used technique for requirement gathering, as we can freely ask questions to stakeholders about their needs, expectations etc. In very simple words we can say that it is the semi-structured conversations between stakeholders and developers. In this technique we can easily identify the functional and non functional requirements.

3.2 Advantages of Interviewing Technique for Requirement Gathering

Interviews allow us to hear direct from the users what they want, what they need and what they are struggling with, this helps to clarify our questions. Even we can ask follow up questions to them in interview for requirement gathering. Stakeholders reveal their expectations during conversation. Interview makes stakeholders more likely to engage and share openly about requirements.

3.3 Limitations of Interviewing Technique for Requirement Gathering

In interview stakeholders may not fully understand what they need, or if they know their needs but also they can't express it clearly in understandable words. It may confuse the business analyst what they need actually. Misunderstanding between developers and stakeholders may developers don't understand actual features of the software.

4 Scenarios in Software requirement analysis

Scenarios are stories which explain how a system might be used. They are basically useful for adding detail to an outline requirements description. They are descriptions of how user interacts with a system to achieve specific goals. Scenarios are story like descriptions. They can be used in validations phases of requirements analysis. Using scenarios in software requirements analysis can uncover hidden requirements.

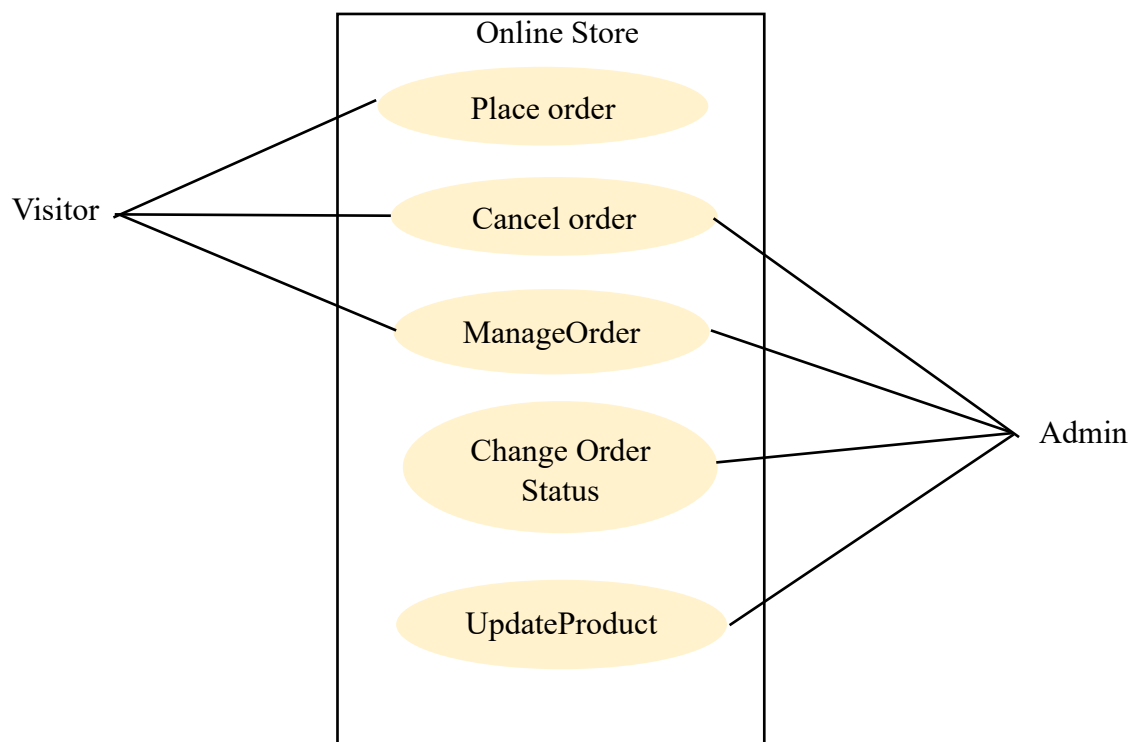
4.1 Scenario Examples for Online Booking Systems

Lets take an example of hotel room booking systems, main Guest, goal is to book a hotel room for vacations, first user visits the booking site , he/she will now select the destination first, then after selecting the destinations they will select check-in and check-out dates. They will filter price and choose room type, enters personal and payment details. Confirms booking and receives a confirmation email too, here postconditions will be room is reserved and booking details are stored in systems.

5 Use Case in Software Engineering

They are graphical representations of systems users and their interactions with system functions. It shows what a system does form an external, high level by illustrating the scope of the systems and even shows how users achieve specific goals. It only shows the External details of how systems work but not internal details how system works.

5.1 Simple Use Case diagrams for online store



6 Introduction of Ethnography

Ethnography in a software engineering means studying how developers work by watching them in a real life environment to understand the social and human aspects of their work from their perspective.

Ethnography developed as a tool of social science. Ethnography in software engineering means studying how developers work by watching them in real life situations. Instead of just asking questions or doing surveys, researchers spend time with software teams see how they write code,solve problems and talk to each other.

6.1 Uses of Ethnography in Understanding Users Requirements

Enthnography helps software engineers understand users requirements by observing how people actually use technology in their daily lives. Instead of just asking users what they want ,ethnographers watch how users behave, what problems they face, and what tools they rely on. This gives a clearer picture of their real needs even the ones users might not be able to explain. For example, by spending time with farmers using mobile app, a researcher might notice that poor signal or unfamiliar language is a bigger issue then the app features.

Ethnography also shows cultural habits, emotional reactions that shape how people interact with software.

7 Compare and Contrast between Ethnography and interviewing techniques for electing requirements

Ethnography and interviews are both used to gather users requirements, but they differ in depth, method ,and context. Enthnography focuses in real world observations while interviews rely on direct questioning. Ethnography observes users in their natural environment whereas interviewing asks users questions directly. Ethnography is deep understanding of real world practices,including unspoken needs whereas interviewing is good for explicit needs and opinions. In ethnography user involvement is passive users are absorved whereas in interviewing user involvement is active users are observed. Ethnography focus on what users do specially actual behaviour where in interviewing it focus on what users say specially stated needs.

Ethnography helps uncover real-world problems and unspoken needs by watching users in actions. Interviews help gather explicit requirements and user opinions through direct conservation. Together, they will give a fuller picture of what users say vs what they actually do.

8 Conclusion

The foundation of successful software development lies in a requirements gathering, a process that critically hinges on understanding human behavior and needs. One of the primary tools in this effort is the interviewing technique, which offers a direct way to capture stated needs and immediate feedback from stakeholders. However, the limitations of requirements gathering especially through interviews. This is where ethnography involves observing users of ethnography involves users' patterns. To compare and contrast between ethnography and interviewing for eliciting requirements.

9 References

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