

# 18GEO03 – Design Thinking for Engineers

**List of Templates for CAT II (T17 to T29)**  
**(Empathise Phases)**

**13 Templates**

# List of Templates for CAT II – 13 Templates

- **T17:** POEMS Framework
- **T18:** Empathy Map - To Generate Interview Question
- **T19:** Journey Map - To Generate Interview Question
- **T20:** Combined Empathy Map & Journey Map - To Generate Questions
- **T21:** User Interview Notes
- **T22:** Post Interview Discussion : About the Interviewee
- **T23:** Post Interview Discussion : About the Process
- **T24:** Post Interview De-brief Presentation
- **T25:** SAM Framework for Insight Mining / Need Finding
- **T26:** SPICE Framework for Understanding & Uncovering Deep User Needs
- **T27:** Sample Need Statements
- **T28:** Documenting Insights and Needs
- **T29:** Persona Canvas





# Phase II : Empathise

# Activity 1: Field Observation and User Interview (Tutorial 3)

- Field Observation (Use **POEMS Framework**)
- Deep User Interview (User **Empathy Map, Journey Map**)
- Prepare **Interview Notes**

## Field Observation Preparation

Before embarking on your field observation, ensure the team has a well thought out plan as outlined below:

<b>1. Who &amp; Where to Observe?</b> (Think about the profile of your target group(s)) 	<b>2. What are different roles of your team members?</b> (Interviewer, Observer, Note Takers) 
<b>3. What to Observe and learn?</b> (Think about the issues, concerns your target group may have) 	<b>4. Inventory check before setting off</b> (Observation list, report, template, camera, pen etc.) 



## DEEP USER INTERVIEW

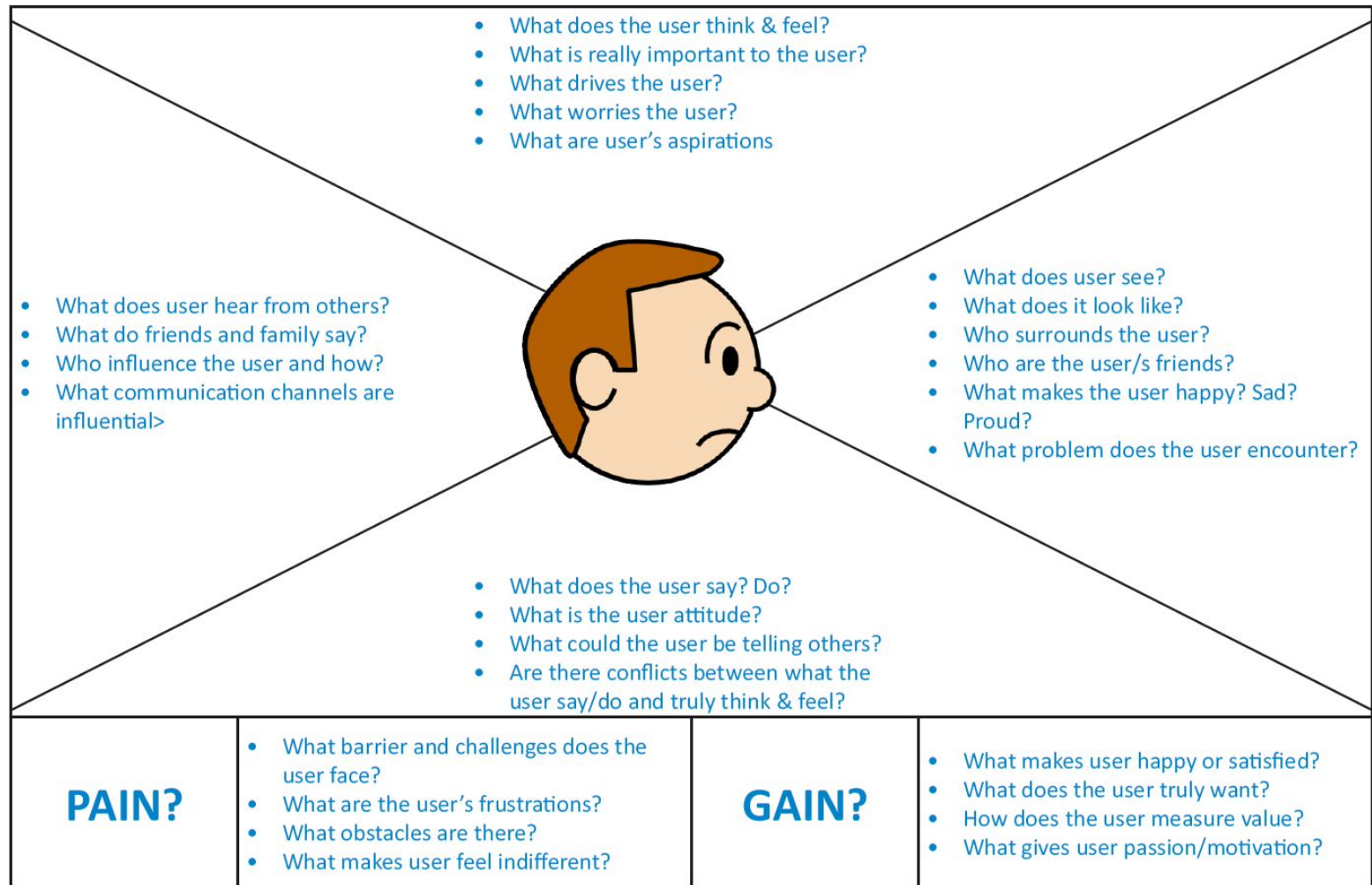
An art of conversation to elicit stories and uncover deep user insights and needs – both latent and unmet needs.

# T17 : POEMS Framework

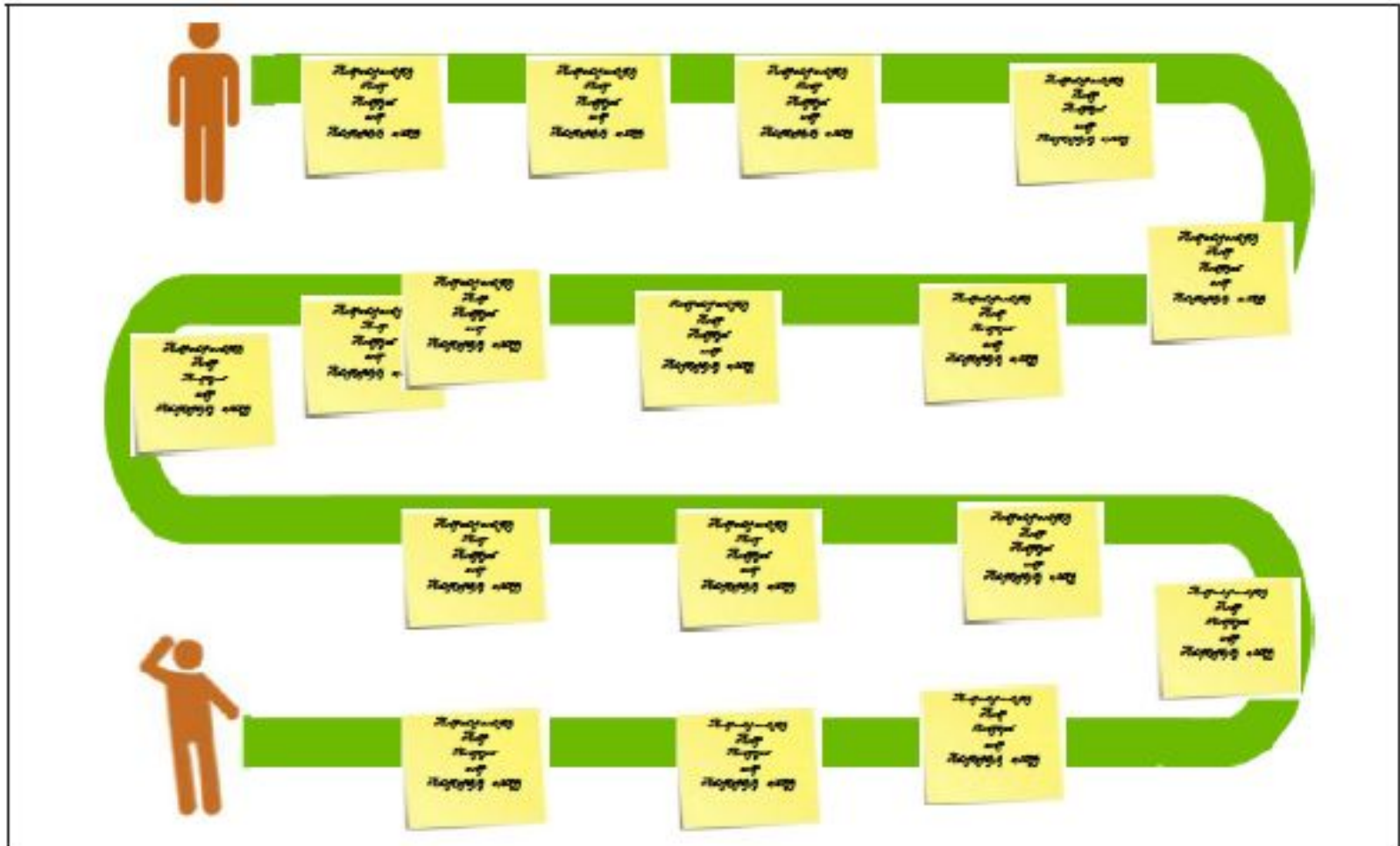
## POEMS FRAMEWORK TEMPLATE

Location:		Date/Time/Period :
Report By:		
POEMS Framework	Field Visit and Onsite Observation	Insights
<b>People:</b> Who are involved? (e.g. commuters, street vendors, office workers, children, motorists, delivery men, etc.) What roles do they play? How are the people engaging with each other? How are they related? What is the relationships? What is the social context?		
<b>Objects:</b> What artifacts are important? (e.g. bus stops, signage, traffic lights, benches, etc.) What roles do they play? How are people engaging with the objects, and with their surrounding? What is interaction? How does the object influence people's behavior?		
<b>Environment:</b> Where is the action taking place? (e.g. public bus, road side, government office, garden, etc.) What is happening? What are the people doing? How do the people behave in this environment? How does the environment influence people's behavior? What is the mood? Ambience?		
<b>Messages &amp; Media:</b> What are the messages and communication media used? (e.g. signage, online materials, posters, apps, etc.) What roles do they play?		
<b>Services:</b> What are the services and support systems provided? (e.g. registration, library services, hands-on guide, online booking, etc.)		

# T18 : Empathy Map - To Generate Interview Question



# T19 : Journey Map - To Generate Interview Question



# T20 : Combined Empathy Map & Journey Map - To Generate Questions

## EMPATHY MAP & USER JOURNEY TO GENERATE INTERVIEW QUESTIONS

DOING	SEEING	HEARING/SAYING	FEELING/THINKING	FRUSTATION	NEEDS/WANTS
When does target User go there? How does target User go there?					



# T21 : User Interview Notes

## USER INTERVIEW NOTES

Interviewer Name	
Note Taker & Observer	
Interviewee Name	
Interviewee contact details	
Date/Time of Interview	
Interview Location	
Interview's background information	
Gender	
Age Range	
Profession	
Education Background	
Family	
Hobbies	
Likes / Dislikes	
Interview Notes (Verbatim)	Observations/Quotes

## **T22** : Post Interview Discussion : About the Interviewee

<b>Interviewee's Goals &amp;/or Motivation</b>	<b>Interviewee's Aspirations:</b>
<b>Interviewee's Current Experience</b>	<b>Interviewee's Challenges &amp; /or Pain Points</b>
<b>3 most memorable things about the interviewee:</b>	<b>User Insights &amp;/or Needs</b>

## **T23** : Post Interview Discussion : About the Process

<b>What went well with the Interview?</b>
<b>What did not go well with the Interview?</b>
<b>How can we do better for next Interview?</b>

**END OF INTERVIEW NOTES**

# T24 : Post Interview De-brief Presentation

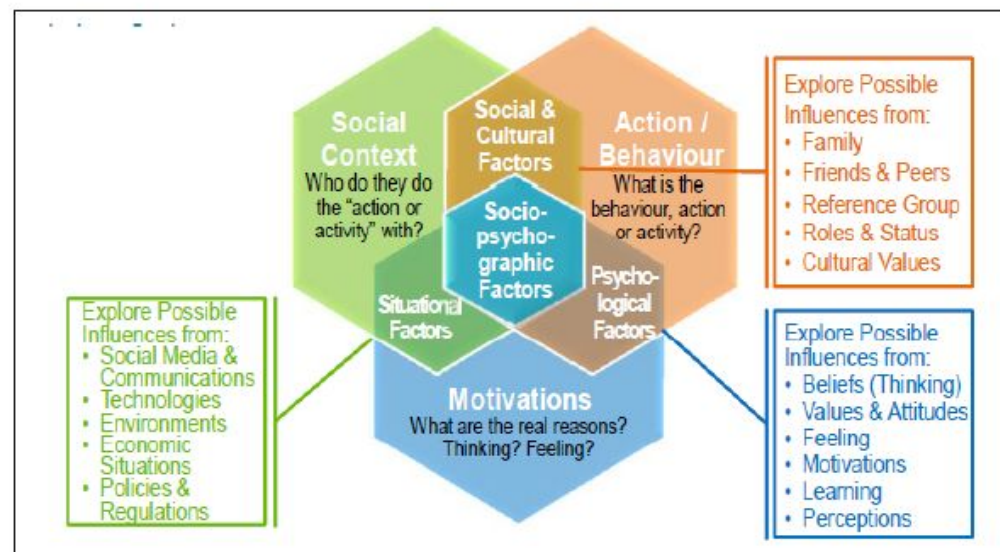
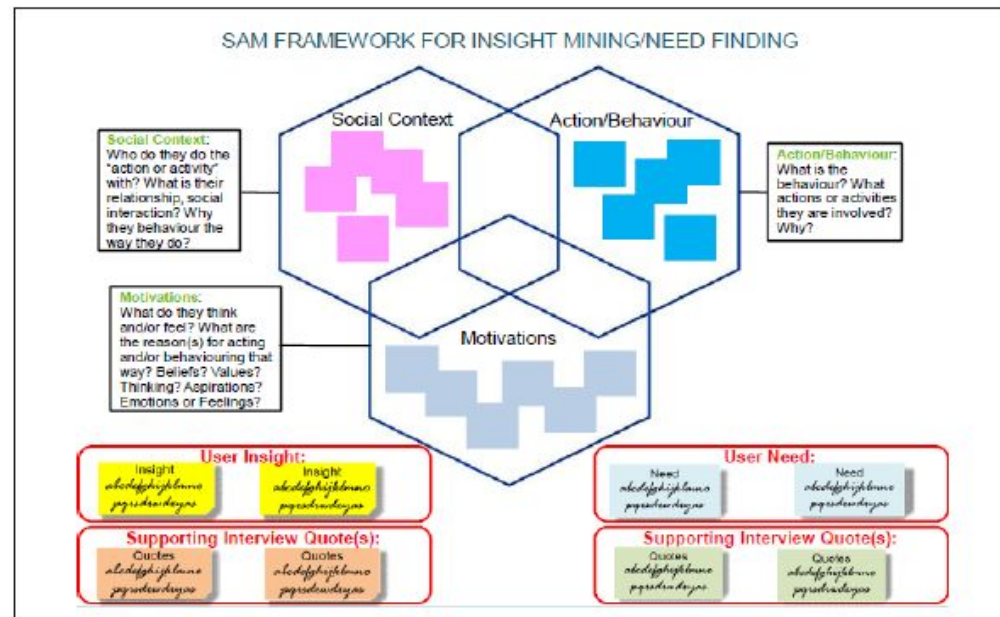
Summary profile of interviewee

<div><p>Insert Photo Here</p></div>	<p><b>Overview of interviewee</b> (brief demographic profile, likes/dislikes, lifestyle etc.,):</p>
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Summary profile of interviewee

<p><b>Goals/Motivation:</b></p>	<p><b>Aspiration:</b></p>
<p><b>Current Experience:</b></p>	<p><b>Challenges and Pain Points:</b></p>
<p><b>3 most memorable things about the interviewee:</b></p>	<p><b>User Insight &amp; Deep Needs:</b></p>

# T25 : SAM Framework for Insight Mining / Need Finding



# T26: SPICE Framework for Understanding & Uncovering Deep User Needs

<b>S</b>	<ul style="list-style-type: none"><li>• <b>SOCIAL:</b> What does this person need form relationships with the people around them? (e.g. trust, qualified counsel, resourceful service staff, etc.)</li></ul>
<b>P</b>	<ul style="list-style-type: none"><li>• <b>PHYSICAL:</b> What does this person need on a functional and practical level? (e.g. responsive service, conducive environment, access to amenities, etc. )</li></ul>
<b>I</b>	<ul style="list-style-type: none"><li>• <b>IDENTITY:</b> What does this person need to define themselves? (e.g. to be contributor, raise civic consciousness, etc.)</li></ul>
<b>C</b>	<ul style="list-style-type: none"><li>• <b>COMMUNICATION:</b> What information does this person need? (e.g. non-bureaucratic language, access to reliable information, responsive feedback channels, etc.)</li></ul>
<b>E</b>	<ul style="list-style-type: none"><li>• <b>EMOTIONAL:</b> What does this person need emotionally and psychologically? (e.g. sense of national pride, sense of fairness and justice, etc.)</li></ul>

## T27: Sample Need Statements

*I need to regain my lost time at waiting to spend them meaningfully.*

*I need to overcome my self-doubt so that I can excel in my studies.*

*I want to be role model for my children and others.*

*I need a sense of familiarity so as to explore the unfamiliar.*

*People want to have that sense of belonging to a community to know that they belong.*

*During weekend I want to recapture quality time with my loved ones.*

*To be recognised for my efforts in the organisation.*

# T28: Documenting Insights and Needs

INSIGHT # :

Insert narrative of the user insight, needs, quotes here.


Need:

Quotes1:

Quotes2:



## T29: Persona Canvas

<b>PERSONA CANVAS</b>	Persona Name:	
Demographic Profile:  Age:  Gender:  Home:  Family:  Education Background:	Goals:	Deep Need Statement:
	Motivation/Aspiration:	Diversity of Needs:  
Hobbies/Likes/Dislikes:	Challenges/Pain Points:	
Social & Family Lifestyle:	Behavior:	

# Activity 2: Team Building Activity

## Marshmallow Challenge

Designing Thinking requires group of people to work together as a team and each team member is expected to make equal contribution. Therefore assigning specific roles and responsibilities to each team member and who should lead the team needs to be specified clearly.

Marshmallow challenge as a team building activity brings creative frame of mind and encourages innovation ideas in organization.



## How to conduct Marshmallow Challenge exercise

1. Divide the team with four members each.
2. Provide the challenge materials (20 sticks of spaghetti, 1 meter of string, 1 Marshmallow and 1 meter of masking tape)
3. Give the challenge “to build the tallest standing structure with marshmallow to be placed on the top of the structure within 18 minutes”.
4. The following instructions are to be provided clearly:
  - a. The team may use all 20 spaghetti or less and may even break it if required
  - b. As much or less of the masking tape and string may be used.
  - c. Eating the marshmallow shall disqualify the team.
  - d. Measurement shall be taken from table surface to top of marshmallow
5. Start the challenge
6. After the measurement, the winning team to be declared
7. Conduct debrief through team reflection as to what was learnt, what role each team member played and how to improve the team performance.

## When to use Marshmallow Challenge

- When team members are new to each other
- To be prepare the team for the ideation phase