



THE UNIVERSITY OF  
**SYDNEY**

**2022 S2C INFO3315**  
**Reflective summary 2**

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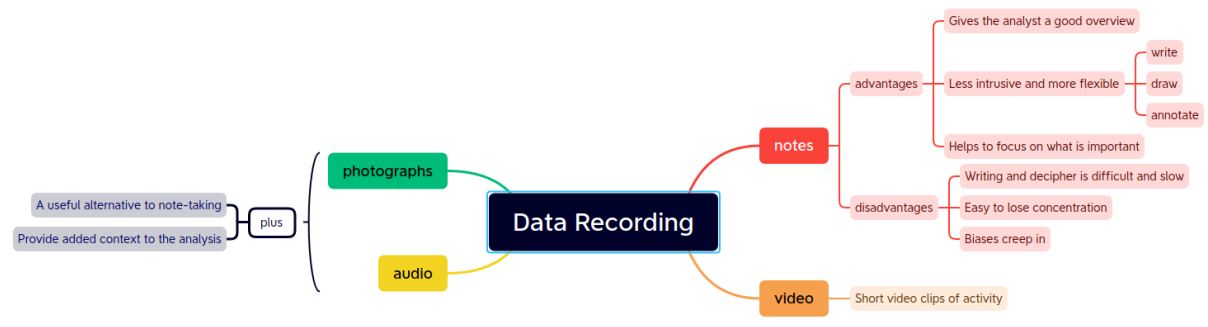
**UniKey: shli5792**

**Q1: Create a diagram or a cheat-sheet summarising all the methods that can be used to gather and represent requirements. This diagram or cheat-sheet can be used by yourself or another student as a quick reference and/or make informed decisions during future projects.**

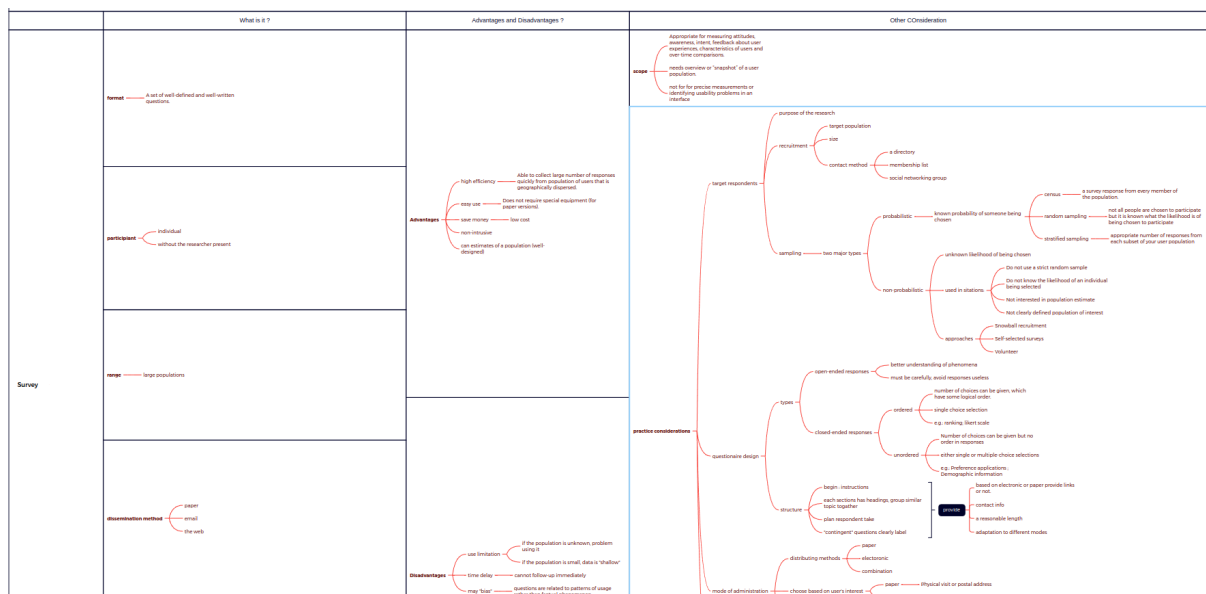
All graph raw files uploaded on Github:

<https://github.com/pikapikapikachu6/Reflective>

## Data Recording:



## Data Gathering:



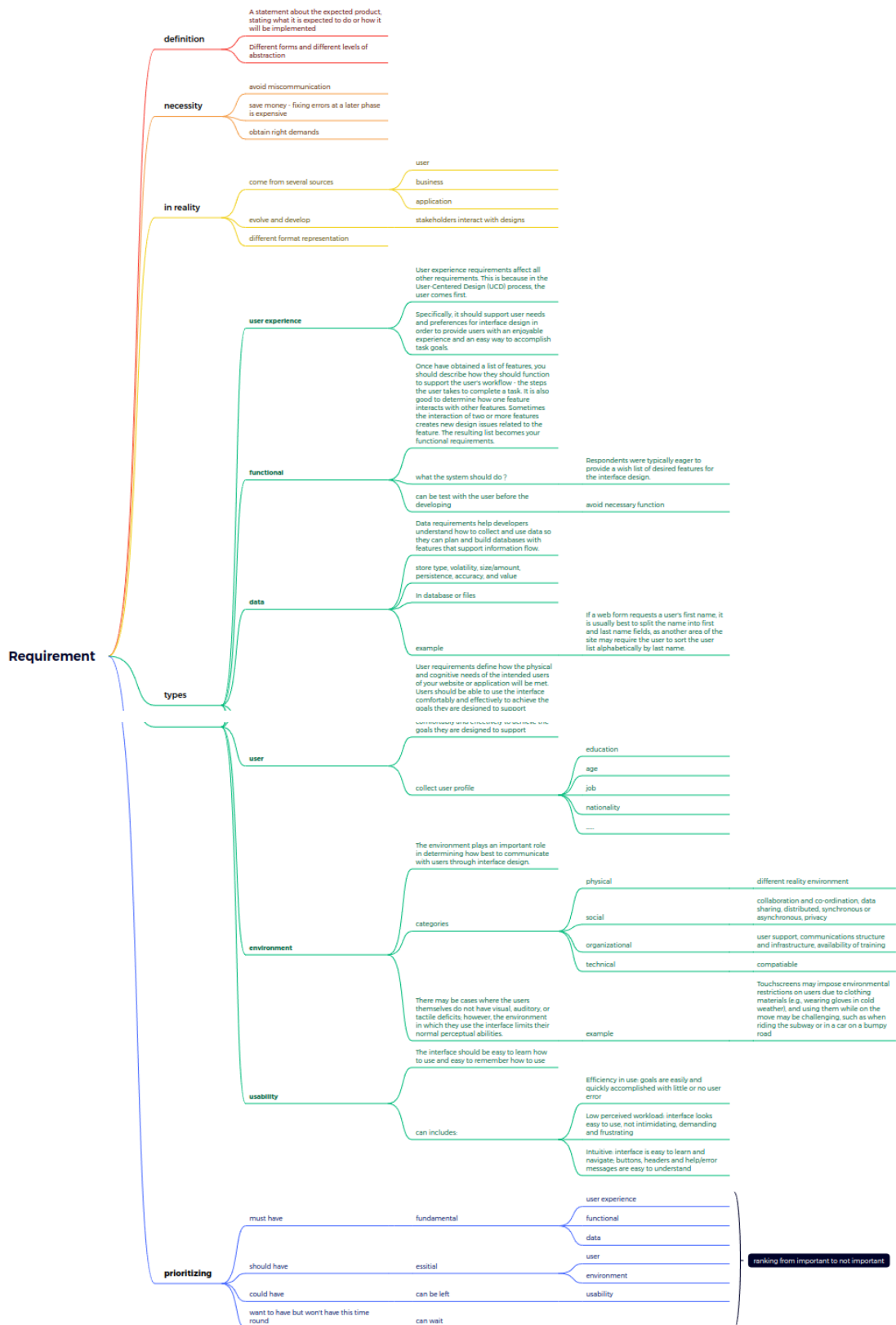
	<p>vs Questionnaires</p> <ul style="list-style-type: none"> <li>survey → complete methodological approach</li> <li>questionnaire → actual list of questions</li> </ul> <p>Both terms often used interchangeably</p>	<p>may 'bias' → responses are related to person or to context rather than to actual phenomenon</p>	<p>mode of administration</p> <ul style="list-style-type: none"> <li>choose based on user's interest             <ul style="list-style-type: none"> <li>electronic → e-mail address or forum</li> </ul> </li> <li>with based tools             <ul style="list-style-type: none"> <li>Google form</li> <li>Microsoft form</li> </ul> </li> </ul> <p>designing online questionnaire</p> <ul style="list-style-type: none"> <li>Plan the timeline             <ul style="list-style-type: none"> <li>designer's office</li> </ul> </li> <li>Independent online template             <ul style="list-style-type: none"> <li>Test the survey to make sure that it performs as you would expect</li> <li>Test it with a group that will not be part of the survey to check that the questions are clear</li> <li>that the questions are clear</li> </ul> </li> <li>Recruit participants</li> </ul>
Interviews	<p>format</p> <ul style="list-style-type: none"> <li>Guided conversation which one person seeks information from another</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>depth → can collect 'deep' data</li> <li>can be open ended</li> <li>can be exploratory</li> </ul>	<p>types</p> <ul style="list-style-type: none"> <li>unstructured → the interviewer will ask questions that he or she has not prepared for beforehand</li> <li>semi structured → in which the interviewer asks only a few pre-determined questions, while the rest of the questions are not planned in advance</li> <li>fully structured → Questions are planned and created in advance. All candidates are asked the same questions in the same order</li> <li>other             <ul style="list-style-type: none"> <li>digital conferencing system → no need to travel</li> <li>advantage → in their own environment</li> <li>can be anonymous</li> </ul> </li> </ul> <p>How to choose</p> <ul style="list-style-type: none"> <li>View the interview requirements and define candidate roles</li> <li>Candidate personas are formed by defining the traits, skills and characteristics that make up your perfect hire</li> <li>Structured interviews may work best if your candidate role has very clear characteristics</li> <li>If your candidate role contains a wide range of characteristics, then an unstructured interview may give you the best sense of the candidate and how they will fit into your organization</li> <li>unsure → a semi-structured interview will provide you with the best of both worlds</li> </ul>
	<p>participant</p> <ul style="list-style-type: none"> <li>interviewee</li> <li>interviewer</li> </ul>		<p>how to plan</p> <ul style="list-style-type: none"> <li>Identify objectives</li> <li>select topic</li> <li>decide method             <ul style="list-style-type: none"> <li>many questions → breaking into multiple sessions</li> <li>moderate time → not more than two hours</li> <li>avoid experts → clear, understandable and impartial</li> <li>keep it short → difficult to remember long</li> <li>avoid double-barreled questions</li> </ul> </li> <li>ask questions</li> <li>determine players</li> <li>prepare materials</li> </ul>
	<p>note</p> <ul style="list-style-type: none"> <li>any phase of a project</li> <li>not suitable for large sample of population</li> </ul>	<p>Disadvantages</p> <ul style="list-style-type: none"> <li>hard to control → potential unbounded discussions</li> <li>large data</li> <li>recall problem</li> <li>low return on investment → high effort to conduct</li> </ul>	<p>how to run</p> <ul style="list-style-type: none"> <li>introduction → introduce yourself within the goals, mention about the ethical issues, ask to record, present the informed consent form, and capture demographic information</li> <li>warm-up → make first question easy and non-threatening</li> <li>main body → present questions in a logical order, ask small intermediate questions</li> <li>a cool off period → include a few easy questions to defuse tension at the end</li> <li>closure → Thank interviewee, signal the end, for example switch recorder off</li> </ul>
Focus groups	<p>format</p> <ul style="list-style-type: none"> <li>interview people in groups</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>inclusiveness → allows diverse or sensitive issues to be raised</li> <li>peer consensus → good at getting a consensus view</li> <li>comparability → increase consistency between participants</li> </ul>	
	<p>participant</p> <ul style="list-style-type: none"> <li>representative sample of the target population</li> <li>trained facilitator</li> </ul>	<p>Disadvantages</p> <ul style="list-style-type: none"> <li>facilitation → inappropriate for controversial topics</li> <li>high requirements → depends highly on people in the group</li> <li>low return on investment → high effort to conduct</li> </ul>	
	<p>range</p> <ul style="list-style-type: none"> <li>5-10 people</li> <li>appropriate for investigating shared issues rather than individual experiences</li> </ul>		
Observations	<p>format</p> <ul style="list-style-type: none"> <li>direct → observed directly by the investigator</li> <li>indirect → through records of the activity that are studied afterward</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>can both direct and indirect</li> <li>easy to administer</li> <li>avoid respondents unwilling to a report</li> </ul>	<p>types</p> <ul style="list-style-type: none"> <li>direct             <ul style="list-style-type: none"> <li>observed directly by the investigator as they perform their activities</li> <li>latent observation → Designer watches user while user is thinking, no communication during observation</li> <li>methods                 <ul style="list-style-type: none"> <li>think aloud → Direct user to say thought process</li> <li>constructive interaction → two people work on the task together and conversation is observed</li> </ul> </li> <li>framework                 <ul style="list-style-type: none"> <li>three easy to remember → who, where, what</li> <li>what → who</li> <li>where → where</li> <li>what → what</li> </ul> </li> </ul> </li> <li>indirect             <ul style="list-style-type: none"> <li>Through records of the activity that are studied afterward</li> <li>methods                 <ul style="list-style-type: none"> <li>interaction logging → Software record user's activity in a log for examination later</li> <li>diaries → time waste, disadvantage, unobtrusive</li> <li>Goed at studying usage patterns and when the activity is greater</li> <li>Users log information at regular intervals or when event happens</li> <li>logs → feedback, Data collected provides feedback for researchers, allocation, Data collected used to collect further information on the event at a later point</li> </ul> </li> </ul> </li> </ul>
	<p>participant</p> <ul style="list-style-type: none"> <li>Observer and Observed</li> </ul>		
	<p>documentation method</p> <ul style="list-style-type: none"> <li>direct → during performing activities</li> <li>indirect → diaries, interaction logging, video and photographs collected remotely</li> </ul>	<p>Disadvantages</p> <ul style="list-style-type: none"> <li>need time and commitment</li> <li>may produce huge amount of time</li> <li>some phenomena aren't open to observation</li> </ul>	
Contextual inquiry	<p>format</p> <ul style="list-style-type: none"> <li>combination of interview and observation</li> </ul> <p>participants</p> <ul style="list-style-type: none"> <li>participant</li> <li>researcher</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>detailed information gathering</li> <li>user centered</li> <li>accurate</li> <li>real insights</li> <li>low return on investment → high effort to conduct</li> </ul> <p>Disadvantages</p> <ul style="list-style-type: none"> <li>data interpretation</li> </ul>	<p>Four main principles</p> <ul style="list-style-type: none"> <li>Context: Going to the user, whenever they are, and seeing what they do as they do it</li> <li>Partnership: User and interviewer explore user's life together</li> <li>Interpretation: Observations interpreted by user and interviewer together</li> <li>Focus: Guide interview what and focus of issues</li> </ul>
Ethnography	<p>format</p> <ul style="list-style-type: none"> <li>combination of interview and observations, Ethnographers immerse themselves in the culture that they study</li> </ul> <p>participants</p> <ul style="list-style-type: none"> <li>interviewees</li> <li>observers</li> <li>researchers</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>richly evocative</li> <li>richly discover new things</li> <li>low return on investment → high effort to conduct</li> <li>depends on people's openness and honesty</li> </ul> <p>Disadvantages</p> <ul style="list-style-type: none"> <li></li> </ul>	<p>requirements</p> <ul style="list-style-type: none"> <li>A researcher's degree of participation can vary, full participation or full observed and a effect study</li> <li>Requires cooperation of and acceptance from people being observed</li> <li>Requires skills to conduct ethnographies, reflective and analysis of detail and skills on the job that is partial participation</li> </ul>
Studying documentation	<p>format</p> <ul style="list-style-type: none"> <li>procedures and rules are often written down in manuals</li> </ul>	<p>Advantages</p> <ul style="list-style-type: none"> <li>richly accessible</li> <li>richly getting background information</li> <li>easy to manage</li> </ul>	
	<p>participant</p> <ul style="list-style-type: none"> <li>writer</li> <li>reader</li> </ul>	<p>Disadvantages</p> <ul style="list-style-type: none"> <li>cannot be used in isolation</li> <li>no qualitative view</li> <li>problem with evaluation</li> </ul>	

[illegible]

**Analyse data gathering:**

If I rank these methods, I will rank my table order. It's ordered by the range from big to small. The survey can be sent physically or digitally, so surveys offer the opportunity for mass distribution. They can also be very inexpensive; if you choose to use a free tool, it costs nothing to conduct the survey. Interviews and focus groups involve face-to-face discussions with the subject about a specific topic or issue. Interviews are often one-on-one, and focus groups usually consist of several people. Observer is one of the most passive methods of data collection. Researchers can observe as a neutral third party, or as a participant in an ongoing activity.

# Requirements:



## Data analysis:

Data Analysis				
	what is it ?	analysis	analysis method	tools
Quantitative	number	Numerical methods to ascertain size, magnitude, amount or size of something	statistical analysis — steps — <ul style="list-style-type: none"> <li>data cleaning               <ul style="list-style-type: none"> <li>modify inappropriate formatting</li> <li>screen the data for possible errors</li> <li>reasonableness check</li> <li>group collected from multiple channels' data</li> </ul> </li> <li>coding data — convert original data to numeric</li> <li>descriptive statistics               <ul style="list-style-type: none"> <li>understand natural of data set</li> <li>measurement                   <ul style="list-style-type: none"> <li>Mean: Add up values and divide by number of data points</li> <li>Median: Middle value of data when ranked</li> <li>Mode: Figure that appears most often in the data</li> <li>Standard deviation: Amount of variation in data</li> </ul> </li> </ul> </li> <li>statistical testing — significance test for comparing means</li> <li>identifying relationships between factors — correlation testing</li> </ul>	statistical analysis — <ul style="list-style-type: none"> <li>excel — simple functionality</li> <li>spss — Comprehensive with advance functions, GUI</li> <li>R — Expensive</li> <li>R — Comprehensive, scriptable</li> </ul>
			question design & data analysis — closed question — analyzed quantitatively	
Qualitative	words (quotes, description)	Expresses the nature of elements and is represented as themes, patterns, stories	Basic Qualitative Analysis — <ul style="list-style-type: none"> <li>looking for critical incidents               <ul style="list-style-type: none"> <li>specific incidents</li> <li>using rest of the data collected analysis</li> </ul> </li> <li>identifying themes               <ul style="list-style-type: none"> <li>good for exploratory studies</li> <li>affinity diagram — help to identify patterns and themes</li> </ul> </li> <li>categorizing data               <ul style="list-style-type: none"> <li>top-down approach</li> <li>classified data — according to set of categories</li> </ul> </li> <li>in practice, combination of inductive and deductive</li> </ul>	qualitative Analysis — <ul style="list-style-type: none"> <li>nvivo — Supports annotation and coding of data including PDF-documents, photos, videos and audio files.</li> <li>Atlati — Latest version allows coding directly onto video and audio files without transcription.</li> </ul>
	images (vignettes of activity, photo)		Interaction Analysis — <ul style="list-style-type: none"> <li>definition — investigate and understand interactions               <ul style="list-style-type: none"> <li>between people and between people and artefacts</li> </ul> </li> <li>includes               <ul style="list-style-type: none"> <li>Based on empirical observations such as videos</li> <li>Inductive process in teams, collaboratively</li> <li>Contents of the material is logged</li> <li>Materials are extracted, classified, or removed</li> <li>Instances of a salient event are assembled and played one after the other</li> <li>The team of researchers studies the assemblage together</li> </ul> </li> </ul>	

**Q2: This question should be answered after you have completed Tasks 1-4 in the Group Project. Based on your own actions during the group project, describe the general approach that you would take to identify user groups and their requirements in practice. Your description must explain how key decisions are made during the process e.g. choice of data gathering techniques, selection of site/participants and number of participants/respondents, when to stop collection and start analysing. (500 words)**

**Answer:**

In our group project, we finished the tasks 1-4.

In task1, we chose and determined our target sustainable goal is “decent work and economic growth” and then we described the problem and proposed initial solution ideas.

In task2, we used “PACT” analysis to clarify our people, activity, context and technology. Based on the results of the analysis, we predicted what users expected to see on our solution and what data and information we might need.

In task3, firstly we based on our users and stakeholders characteristics to choose surveys and interviews as our data gathering methods to collect data.

We chose the survey because it is suitable for our requirements. We prefer to collect large amounts of data from surveys about our potential users' demand, current situations and opinions or expectations on our products. Therefore, through the survey, we asked a total of 15 questions, containing 4 modules: personal information, educational and professional background, future career intentions and ideal salary, and views on recruitment websites. And our questions are the same for each respondent. Also because the limitation for our group only has 5 members which means we cannot use the method like an interview to collect each unemployed person's large amount of group data. The survey is a quick and convenient way for us. We did our survey using the google form and through some social media including facebook, reddit, wechat and so on to distribute our survey. Because of the limitation that our group members are all international students and because of covid-19, our social circle is not very balanced to cover all walks of life and all age groups. Most of the survey respondents are also university students and graduates. Our survey started from the week5 and lasted for about 2 weeks until week6. And then in week6, we analysed our collected data from the survey using the System Usability Scale (SUS) and Technology Acceptance Model (TAM).

We chose the other data gathering method is interviews. In our stakeholders and users, we have to provide service to some course training schools and education providers. For these small specific target cooperation groups, interviews are of course more suitable. Although face to face and one to one interviews need a huge amount of money and human costs, they can chat more widely with our cooperators and learn more about their demands, requirements and expectations for our group and product. We chose the semi-structured style interview and also wants to based on different interview reality situation ask some personality questions. But also because of our social circle limitations, our interviews only simulated completed within the group.

In task4, based on our collected data and analysed results. We clarified our product's many requirements in data, environment, usability and so on. We learnt more about users' situations which help us manage our product more user friendly and can exactly provide real help to our potential users.



