

Changemakers: Creativity and Value Creation

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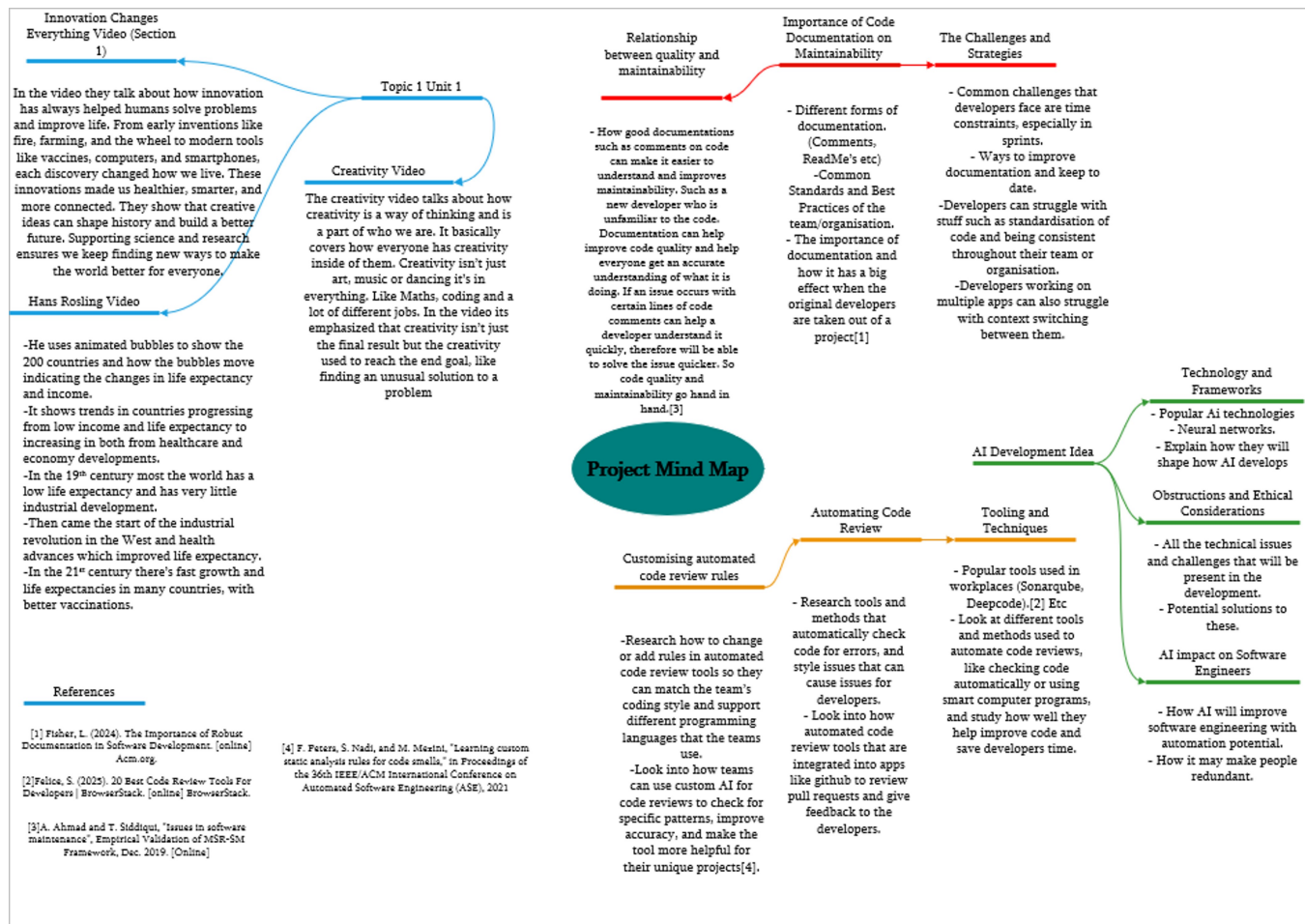
Course: Software Engineering

In this project I cover off some of the research strategies, ideas and structure that I will use for my project later down the line.

Task 1 - Mind Map

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URL: [task 1.vsdx](#)



Task 2 - Aim and Objectives

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AI Development idea

The aim of the project is so I can research and understand the development of Artificial Intelligence, from how it first started to how it is being used today and even have an idea of how it will potentially evolve in the future whether it's for positive or for negative use. I would like to research things like how it is being used in everyday life, jobs and even behind the scenes. As I believe there is a lot of nuances on how AI is used by each and every person. By the end of the project I'd like to have a good overview and knowledge of how AI works, is used and a rough roadmap of what the future will look like with AI.

Objectives

- **Look at the history of AI:** learn how it started and how it has changed over time[3].
- **Understand the different types of AI:** machine learning, speech recognition, and image recognition, and how they work.
- **How AI is being used today:** health, business, education, transport, and entertainment[4].
- **The effects of AI on people and jobs:** look at some of the problems it can cause, like privacy issues or unfair decisions[5].
- **Learn about new ideas and future plans for AI:** smarter AI systems and how to make sure they are safe to use[6].
- **To collect all of the information and present it in a neat and tidy format.**

Q2

For my project I will be choosing Epistemology as my research philosophy as I believe it to be the best philosophy for the topic of this project which is the development of AI. The reasons I see Epistemology as the most relevant is because I will be researching how the AI systems learn and process information which are all questions based on knowledge. On top of that I would like to learn how AI is able to mimic human thinking and is able to process data as a human would but more efficiently. Aswell as this I would like to explore the current and potential future limitations of AI, stuff that it cannot understand that humans are able to. There maybe touches of Axiology in there if I decide to research into the ethical impacts of AI however this would a brief topic within my project and would not be substantial enough to be my primary research philosophy. Some more key niche things I will explore will be the major breakthroughs in AI's development such as the GPT models and neural networks, the types of AI learning methods such as AI lacking intuition and emotion but more of an epistemological focus on things like what kind of knowledge AI is gaining and can it truly understand like a human or is it just pattern matching. The primary reason for my choosing of epistemology is it creates a clear line between right and wrong.

Q3

One tool I will use is Google Scholar, the benefits are that it is very up to date therefore will contain plenty of information on research papers on AI and its subcategories. The strategies I will use will be things like keywords for example "Artificial intelligence history" and quotation marks for exact phrases that will match in papers for example "after 2024" for any information on AI after 2024. These strategies I learned within the Known Knowns section along with when finding one good article, to use keywords from that article to allow you to find more databases to research. Another tool I can use is in house UWTSD library research tool. As it works similarly to Google Scholar I will apply the same strategies to find the relevant information needed.

Task 3 - Research Strategies

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Q1:

For validity I could use well reviewed tools for data collection, I can make sure my ways of researching match with the objectives that I am trying to reach and I can use the triangulation method which is using an multiple data sources which will have a higher chance of improving my internal validity. I could also use smaller focus groups to have a reasonable amount of data points. On top of that I could apply consistent methods and ensure that the people within my focus groups, surveys or even interviews have the relevant experience for the area that I am studying. A strategy mentioned in the online section is random sampling, having a reasonable sample size. I can cover ethical concerns by asking the studied people for informed consent and that they understand their rights and what the data they are providing is being used for. Guarantee their confidentiality and be as transparent as possible, the number one rule is that I should allow the people participating the option to withdraw if they would like to.

Q2:

For the research strategies I will use a mixed method approach to researching. Using both qualitative and quantitative research. I'm doing both so that I can collect in depth opinions but at the same time collect measurable data[9]. I will use Surveys for my wider research approach and smaller polls or interviews for gaining the deeper insights[10]. To ensure that my methods for research are successful I will design a survey, which will be a short survey with relevant questions to what I would like data on for my research project. I can test it with a small number of people that I feel have the experience relevant for the data I need. After they complete the survey I can ask for feedback on how well the questions were structured and if they were clear[11]. Based on this I can change the wording and structure of the question for the final data collection tools to ensure that they are more focused and relevant or easier to understand if clarity is the issue.

The Survey

AI Development Research

Target group: University Students like me, Parents, General Public.

1. How confident do you feel about the development of AI for good ?
2. What experiences have you had with AI ?
3. How often do you use AI software?
4. What are the biggest challenges you face with AI, do you struggle to use it?
5. Any other comments or worries regarding AI ?

Feedback Questions:

- Were the questions easy to understand?
- Did the survey take too long?
- Was anything unclear or missing?

Q3.

One form of quantitative analysis I can use is creating charts. This is a great way that I can understand the data that I am collecting. I will use them for things such as counting the statistics from my survey results etc. Likewise the other form of analysis qualitative I can use is going through the open ended responses from my surveys and trying to identify patterns and recurring themes in the responses[12]. I can then group all of that together and try to gauge why these are recurring whether it's thoughts or in depth opinions. I can highlight key phrases that occur throughout and just mainly summarise everything that is repeating. This form of qualitative research will only work for the personal questions and won't work with numbers or multiple choice questions throughout the survey hence why I put open ended. I will ensure not to go too far when making the documents for qualitative research in the sense that adding too much colour and design will likely distract the reader from all of the information shown as said in the Online Section. For the quantitative research I'll take the less is more approach, this will most likely include short informative titles, white backgrounds etc just to focus on the data shown not the design around the data[13].

Appendices

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