



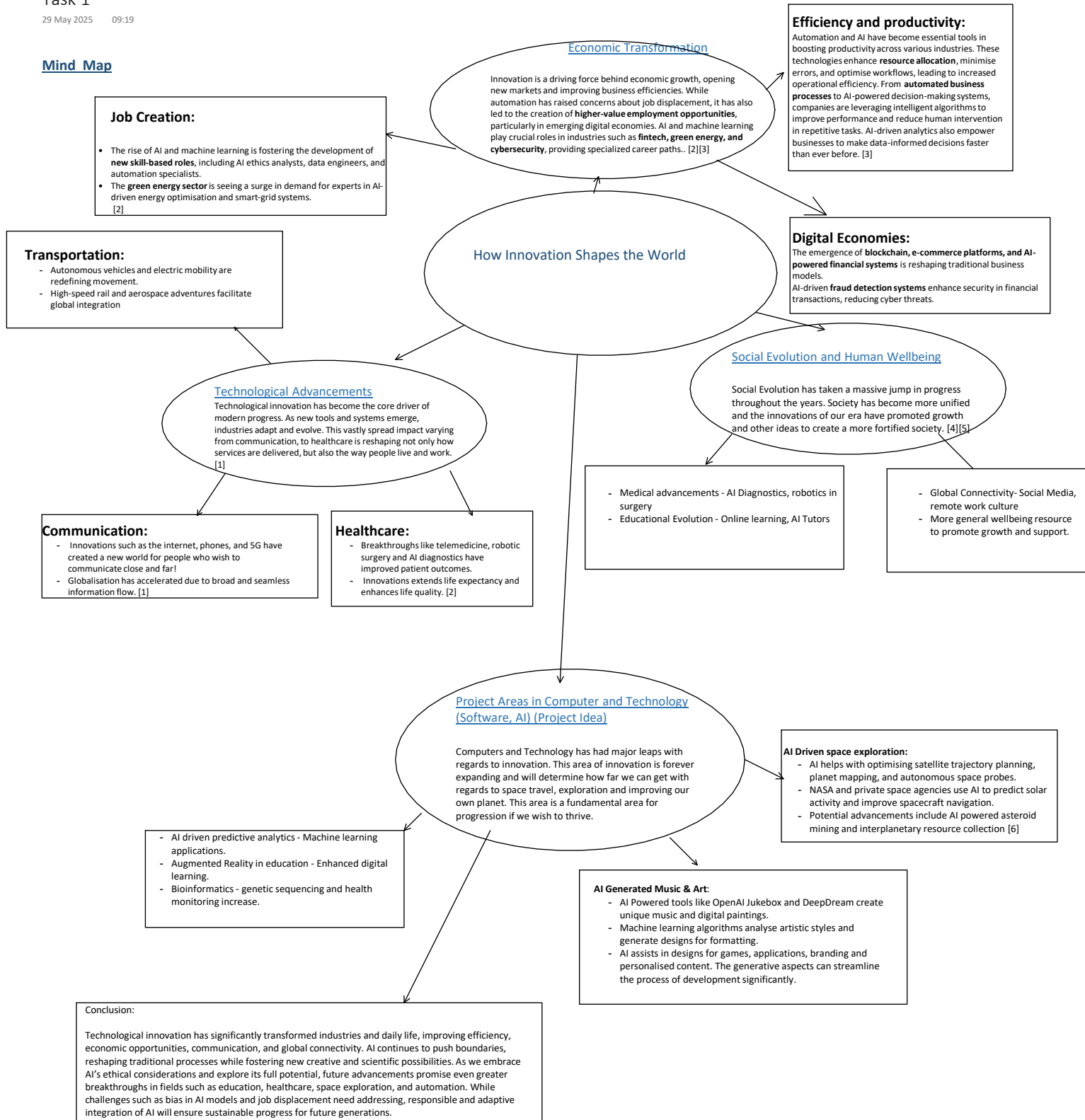
Changemakers: Creativity and Value Creation

Shane Groves (2413879)
Assignment 1

Task 1

29 May 2025 09:19

Mind Map



References:

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- [3] M. Schwab, "The Fourth Industrial Revolution," *World Economic Forum*, 2016.
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- [5] L. Brown et al., "Smart Cities: AI and IoT Integration," *IEEE Transactions on Sustainability Tech*, vol. 10, no. 2, pp. 112-125, 2023.
- [6] J. Goodwill, C. Wilson, J. MacKinnon "Current AI Technology in Space", [Current Technology in Space](#)

Task 2: Aim & Objectives and Research Area

10 June 2025 11:42

Topic Question:

Task 2: Aim & Objectives and Research area

Your answers to the questions below should refer to a project/research area of your choice (related to your programme of study). This task answer should be approx. 600 words with citations and a list of references (Approx. 4/5 sources). The areas covered in the following online topics can help you answer the questions below.

- **Q1.** Create and document a single **Aim** and **several Objectives** for your project.
- **Q2.** Identify an appropriate **research philosophy** for your project.
 - Online section: Unit 1 Topic 2 - How Do YOU Solve a Problem?
- **Q3.** Select and document appropriate **search tools** including some specific **research databases** to identify research related to your project area and use **search strategies** to **identify relevant research** related to your project.
 - Online section: Unit 1 Topic 3 - Known Knowns.

Aim For The Task

To investigate the role of artificial intelligence (AI) and machine learning (ML) in enhancing software development processes, focusing on efficiency, accuracy, and automation. This research aims to provide insights into how emerging AI technologies can transform traditional coding practices and improve overall software quality and delivery speed. [1]

Objectives For The Task:

1. To analyse existing AI-powered tools for software development, including automated coding assistants and debugging systems, in order to identify their capabilities and limitations in real world programming environments. [2]
2. To evaluate the effectiveness of ML algorithms in detecting and resolving software bugs, measuring improvements in bug detection rates and reduction of debugging times. [3]
3. To explore how AI-driven automation improves productivity and software engineering workflows, by examining case studies and developer feedback.
4. To develop a conceptual framework for integrating AI into software development practices that addresses technical, organisational, and ethical factors. [3]
5. To assess ethical concerns and challenges related to AI-generated code and autonomous software decision making, including issues of accountability and bias. [2]

Research Philosophy:

For this study, the most suitable research philosophy is pragmatism, as it accommodates both quantitative (data-driven performance metrics) and qualitative (developer experiences with AI tools) research methods. Pragmatism supports the idea that research should focus on practical outcomes and applicability, making it ideal for examining AI's role in software development. [4].

A mixed method approach enhances depth, capturing empirical evidence while considering human perspectives in adopting AI-powered tools. This allows for evaluating performance improvements while also addressing how software engineers adapt to AI-assisted coding environments.

Alternatively, positivism may be applicable if focusing solely on factual data, such as benchmarking AI models for code efficiency, error detection, and completion rates. Positivism relies on observable facts and statistical analysis, making it valuable for testing the reliability and accuracy of AI-driven solutions. [3].

Search Tools and Research Strategy:

To effectively identify relevant research for this project, a combination of academic databases, web-based platforms, and targeted search strategies has been used.

Search Tools and Databases:

1. **Google Scholar** – Helpful for scanning a wide range of academic literature, including citation tracking and related article suggestions. This proved useful for general research in many circumstances for myself.
2. **Codeless.co** – An industry focused website that reviews the latest AI development tools, providing practical comparisons and forecasts [2].
3. **IEEE Xplore** – A comprehensive source for peer reviewed literature on AI, ML, and software engineering. It supports research into automation techniques and benchmarking studies. This proved practical and fit for purpose for my research needs.
4. **Hostinger Tutorials** – Offers feature overviews and practical use cases of AI coding tools from a developer's point of view [4].
5. **Analytics Vidhya** – Lists up to date AI code generators and their functions, including tools like Tabnine, GitHub Copilot, and Replit [5].

Search Strategies:

1. **Keyword Optimisation:** Using specific terms such as "AI assisted software development", "machine learning in debugging" and "automated code generation" to refine search results.
2. **Citation Tracking:** Following references in key research papers to extend the scope of sources.
3. **Boolean Searches:** Utilising operators (AND, OR, NOT) for precise filtering of relevant articles.

Ethical Considerations:

AI generated code and autonomous software decision making raise significant ethical concerns, including bias in AI models, accountability in automated decisions, and the potential displacement of human programmers. Addressing these challenges requires examining:

1. **Bias in AI algorithms:** Ensuring diversity in training datasets to prevent discriminatory outcomes. AI models trained on biased datasets risk producing results that reinforce existing inequalities, making fairness in algorithm design a critical concern.
2. **Accountability issues:** Determining responsibility for AI-generated errors and ensuring transparency in AI-assisted decision-making processes. If AI autonomously writes faulty code or introduces vulnerabilities, accountability frameworks are needed to address liability and corrective actions.
3. **Security and reliability risks:** AI-driven code generation may inadvertently introduce vulnerabilities, raising concerns about cybersecurity threats. Developers must assess AI-generated code rigorously to avoid unintended security risks.
4. **Regulatory frameworks:** Evaluating existing policies governing AI deployment in software engineering and discussing potential ethical guidelines for responsible AI use. Government regulations and industry standards should address transparency, accountability, and ethical AI adoption.

References:

- [1] Shneiderman, B. (2022). *Human-centred AI and software engineering*. *ACM Transactions on Computer-Human Interaction*, 29(4), 1–23.
- [2] "Best AI tools for developers in 2025," *Codeless*, 2025. Available: <https://codeless.co/best-ai-tools-for-developers/>
- [3] "AI-driven coding practices and debugging techniques," *ArXiv*, 2024. Available: <https://arxiv.org/abs/2406.07737>
- [4] "Top AI coding tools: Features and use cases," *Hostinger*, 2025. Available: <https://www.hostinger.com/tutorials/best-ai-coding-tools>
- [5] "12 Best AI Code Generators in 2023," *Analytics Vidhya*, 2023. Available: <https://www.analyticsvidhya.com/blog/2023/08/ai-code-generator/>

Task 3

17 June 2025 12:42

Task 3: Research Strategies

Your answers to the questions below should refer to a project/research area of your choice (related to your programme of study). This task answer should be approx. 600 words with citations and a list of references (Approx. 4/5 sources). The areas covered in the following online topics can help you answer the questions below.

- **Q1.** Consider and document strategies to enhance **validity, reliability, generalisability** and **ethical considerations**.
 - Online section: Unit 2 Topic 2: Finding a Needle in a Haystack.
- **Q2.** Select research strategies/**data collection methods** you would use to collect data for your project. And design a **pilot data collection** method appropriate for your project and acquire some feedback to improve the focus of your project (include in an appendix section/page and refer to in the main body of the proposal).
- **Q3.** Outline some different types of **quantitative and qualitative analysis**.
 - Online section: Unit 4 Topic 1: It's All In The Numbers.

Page 2 of 12

- Online section: Unit 4 Topic 2: There's a Theme Here.

Q1. Strategies to Enhance Validity, Reliability, Generalisability and Ethical Considerations

To ensure the study is valid, it will combine quantitative data like AI tool performance statistics with qualitative insights gathered from publicly available developer feedback, rather than conducting new interviews. This mixed approach helps confirm results and improve accuracy about AI's role in software development [2]. Using both kinds of data lets the study balance measurable facts with real world opinions.

Reliability will be supported by using consistent methods for measuring AI tool performance and carefully reviewing existing qualitative data sources. The data collection tools will be tested multiple times during a solo pilot phase to catch any problems or inconsistencies early on [2]. This helps make sure the results are trustworthy and repeatable.

For generalisability, the study will analyse AI tool performance on a variety of publicly available codebases to reflect different programming environments, industries, and project sizes. However, some limitations remain since AI use and adoption can vary by company size, domain, and developer experience [1], [3].

Ethical concerns will focus on protecting privacy when using public data, ensuring transparency about AI tool limits, and addressing important issues like bias, accountability, and security risks in AI generated code. These challenges will be addressed by reviewing the diversity of AI training data and suggesting accountability frameworks that promote responsible use [4], [5].

Q2. Research Strategies and Pilot Data Collection Method

Since the study involves both quantitative and qualitative data, a mixed-method approach is still suitable.

- Quantitative data will be collected by measuring AI tools performance on tasks like code completion speed, error detection, and debugging times using publicly available code and self-run experiments [2]. This will provide objective measures of how well the AI tools help in real coding situations.
- Qualitative insights will be gathered by analysing existing developer feedback from online forums, technical blogs, and documentation rather than conducting new interviews. This approach helps capture real user experiences and opinions without needing to recruit participants [3].

A pilot study will be conducted individually by running AI-assisted coding tasks and tracking performance over a short period. This pilot will also be used to test and improve the clarity of any surveys or data collection tools used, ensuring the methods are effective before the main study begins [2].

This pilot phase will allow for refinement of methods and tools before the main study. The results from the pilot will be included in an appendix and referenced in the final report to explain any changes made.

Q3. Types of Quantitative and Qualitative Analysis

For the quantitative part, the study will use statistics like average debugging time, tests comparing AI assisted coding to manual coding, and regression analysis to see how specific AI tool features affect bug detection success and overall coding efficiency [2].

For qualitative analysis, the focus will be on reviewing existing developer feedback from interviews, forums, and online discussions to identify common themes about the challenges, benefits, and changes developers experience when using AI tools. Software tools may be used to organize and code this information, helping to provide a deeper understanding of developers' attitudes and workflows [3].

Combining these two types of analysis will give a more complete view of AI's impact on software development, showing not only measurable improvements in performance but also important human factors like trust, usability, and workflow changes [1].

References

- [1] P. Cihon and M. Demirer, "How AI-powered software development may affect labor markets," *Brookings Institution*, Aug. 1, 2023. [Online]. Available: <https://www.brookings.edu/articles/how-ai-powered-software-development-may-affect-labor-markets/>
- [2] B. Madupati, "AI's Impact on Traditional Software Development," *arXiv*, Feb. 5, 2025. [Online]. Available: <https://arxiv.org/abs/2502.18476>
- [3] J. Boote, "The Impact of Artificial Intelligence on Software Development," *Infosecurity Magazine*, Aug. 8, 2023. [Online]. Available: <https://www.infosecurity-magazine.com/opinions/ai-software-development/>
- [4] M., "The Ethical Dilemmas of AI in Software Development," *FutureCode IT Consulting*, Apr. 27, 2024. [Online]. Available: <https://future-code.dev/en/blog/ethical-dilemmas-of-ai-in-software-development/>
- [5] Techreviewer Team, "The Transformative Impact of AI in Software Development: A Survey-Based Analysis," *Techreviewer Blog*, May 15, 2024. [Online]. Available: <https://techreviewer.co/blog/the-transformative-impact-of-ai-in-software-development-a-survey-based-analysis>

Check

Take a few moments to complete this activity, which will help you summarise what you have learnt in this section.

Question 1 of 3

Zeeta is really interested in fast cars. She can test several sorts of alloy wheels at a racing circuit before concluding which ones to use. What sort of research is she doing?

 Inductive

 Deductive

Check

Question 2 of 3

Austin researches the performance data for a particular brand of soap powder. It provides evidence that in their research it makes shirts whiter than white. He decides to try out the powder on his white tablecloths and concludes that it makes them whiter too. What sort of reasoning is he using?

 Deductive

 Inductive

Check

In this knowledge check activity you will be presented with three research questions. Using what you have learnt in this topic, select whether the question is good or bad.

Question 1 of 3

Do students who engage in the additional revision classes perform significantly differently on tests than students who do not participate?

 Good

 Bad

Correct!

Inductive research attempts to base its conclusions on patterns that are observed over time. The assumption assumes that what has happened when we were observing will continue to happen in the future.

Correct!

Inductive reasoning is the mutual opposite of deduction. In our research, we observe a pattern of 'special cases' and 'increase' this to become a larger general principle, that can be applied universally to other phenomena we or the reader of our assignment have yet to see.

Correct!

Yes, it is specific and clear. One knows who the participants will be, and one knows that student performance on state tests is the problem.

Check

Question 2 of 3

Why do students seem so apathetic? Select whether the question is good or bad.

 Good

 Bad

Correct!

This is not specific or clear, nor does it reflect an intervention, if one is planned, or a target group of participants. Better questions might be: Are science students more engaged in class discussions when a response strategy is used? What are the reasons for apathy among various groups of high school students?

Correct!

Yes, you correctly identified the quantitative and qualitative statements. Apply this level of thinking in your own subject area.

Quantitative drop zone

Experiments

Observations recorded as numbers

Surveys with closed-ended questions

Qualitative drop zone

Observations described in words

Interviews with open-ended questions

Literature reviews that explore concepts and theories

Check

In this knowledge check activity you will be presented with three research questions.

Question 1 of 3

What do we call it when we reduce the data of the population into a smaller manageable unit? We call it a...

☒ Sample

☐ Snowball

Correct!

A sample is a group of people, objects, or items that are taken from a larger population for measurement. The sample should be representative of the population to ensure that we can generalise the findings from the research sample to the population as a whole (Bineham, 2006).

Check

Question 2 of 3

Which of the following are relevant reasons for why we have to reduce the data we research into a smaller unit? (Choose which ones you think apply)

☒ Your time and resources may be stretched

☒ There are limited people who have experiences you are studying

☒ There are limited people/results with the relevance to the area you are studying

Correct!

If your sample size is large, it may limit your ability to produce findings that represent your population as a whole. It is therefore good practice for triangulation purposes to recruit a variety of respondents (e.g., children, adults, service users and providers).

Continue with questions next time!

Check

Question 3 of 3

When you select a sample from the population by picking the names out of a hat, what type of sampling are you conducting?

☐ Unusual sampling

☒ Random sampling

☐ Stratified sampling

Correct!

In this approach, every piece of data is considered to be equally relevant. This means if you include it in your research it is based on a random chance whether it's included or excluded from the sample you study.

Check

Question 1 of 2

If you wanted to understand the general characteristics or opinions of a group of people you would use a...

- ☒ Survey
- ☐ Interview
- ☐ Experiment

Check

Question 2 of 2

A 'Likert scale' is?

- ☒ Respondents specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements
- ☐ A way of confirming the validity of experimental research invented by Donald Likert in 1967

Correct!

This method will be based on you conducting a survey that can be distributed online, or in person over a phone or in a live meeting. It can produce mixed data (quantitative and qualitative) based upon how the questions are framed.

Correct!

A good solution to measure success would be to consider a 'Likert scale'. A Likert scale is a five-point answer like the one you have used in the previous 'research approach' activity.

Changemakers Topic 1

27 May 2025 12:11

Is innovation changing things for the better?

Answer the following three questions.
Click next once you have chosen.

Across the world, how did deaths per year from natural disasters change in the last century?

- A. More than doubled
- B. Remained about the same
- C. Decreased to less than half

Is innovation changing things for the better?

Answer the following three questions.

On average, women aged 30 have spent how many years in school? (Men of the same age have spent 8 years)

- A. 7 years
- B. 5 years
- C. 3 years

Is innovation changing things for the better?

Answer the following three questions.

In the last 20 years the percentage of people living in extreme poverty worldwide has...

- A. Almost doubled
- B. Remained about the same
- C. Almost halved

Personally, I would say either the wheel or the printing press to be the invention with the largest impact on humanity. The printing press helps to spread knowledge and history for time to come whilst also helping to spread the knowledge in those times as well. The wheel is another huge invention as it helped start efficient travelling, enabled the development of advanced vehicles and aided with carrying items for trading, wars and other key areas which have led to our development.

Section 2:

What is the fourth Industrial Revolution?

Revolution	Year	Information
	1 1784	Steam, water, mechanical production equipment
	2 1870	Division of labour, electricity, mass production
	3 1969	Electronics, information technology, automated production
	4 ?	Cyber-physical systems

Apply

Of the technologies listed by the **World Economic Forum**, which, if any, do you think will have the biggest impact in your discipline area in the next 3-5 years.

Justify your answer on the forum with reference to evidence.

Technologies are changing our world

The World Economic Forum (2016) has identified six technologies that will change our world:

Computing capabilities

- Big data ✓
- Digital health ✓
- The digitisation of matter ✓
- The Internet of Things (IoT) ✓
- Blockchain ✓

I believe that computing capabilities will have the biggest impact on my area of discipline. As computing devices get more advanced, security measures will need to follow. New preventative methods will need to be taken.

? Check

By 2025, what percentage of people are expected to be wearing clothes connected to the internet?

☐ 5% ☒ 10% ☐ 15%



Within the next decade, how many sensors are estimated to be connected in the Internet of Things?

☐ One billion ☐ One million ☒ One trillion

Submit

Apply

In a couple of sentences describe an experience from your past where you feel you were **discouraged/encouraged** to be creative and how this might have affected how you feel about your levels of creativity.

Why is creativity important in your subject area? What might you be asked to do that might involve the need for you to be creative?

A few months ago when I was building my PC, I was lacking a support bracket for my graphics card.

Since I was eager to get it done on the day, I improvised and shaped one myself using wood. It was a new skill acquired, and although there would have been other measures to get it done and look better. I thought I would give it a try and experiment.

Creativity is important in the field that I work in, as sometimes with development and security, you need to think outside the box to achieve what needs to be done. I have dabbled in creating a asset list and databases. Creativity is needed to shape and design the database to make is visually pleasing, professional and easy to read/implement.

Types of plagiarism

According to the founders of Ideo, **Tom and David Kelley**, "creativity is something you practise, not just a talent you're born with", and they have identified four fears that hold most of us back from being creative:

Fear of the messy unknown	Fear of being judged	Fear of the first step	Fear of losing control
Get out of your comfort zone and into the mess . Try something new that will stretch you.	Resist judging yourself. Practice the mantra of Ideation in Design thinking, 'No idea is a bad idea' .	Stop focusing on the huge overall task and find a small piece you can tackle right away.	Confidence doesn't simply mean believing your ideas are good. It means having the humility to let go of ideas that aren't working and to accept good ideas from other people.

As Hungarian essayist György Konrád once said, **"Courage is only the accumulation of small steps."**

So don't wait at the starting line. Let go of your fears and begin practising creative confidence today.

Reflect

As you are reading each of the different sorts of research philosophy, it is likely you will be drawn to it or not. Choose how you feel about the following research philosophies. **Is there an outright winner for you?**

	Support	Indifferent	Against
Positivism	☒	☐	☐
Critical Realism	☐	☒	☐
Interpretivism	☐	☐	☒
Postmodernism	☒	☐	☐
Pragmatism	☐	☒	☐

So you feel most drawn to:
postmodernism

positivism

What aspects do you **agree** with? Why do you **support your choice(s) more** than others?

I believe that science in some essence would be needed to support factors. Without factual theories proven by science. We would not be as advanced.

Things are constantly adapting in our world and new ideas and creations are being brought to surface. If we stuck to one traditional take on something, we would not be as nearly as developed as we are. Which reinforces the point of postmodernism.

Changemakers Topic 3

27 May 2025 14:39

? Check

1. A keyword is like a...

- ☐ A word that unlocks others.
- ☐ A word like a hashtag that summarises the meaning of a sentence.
- ☐ A way of distilling meaning that can be used to search databases.
- ☒ All of the above.

? Check

1. A keyword is like a...

- ☒ A word that unlocks others.
- ☒ A word like a hashtag that summarises the meaning of a sentence.
- ☒ A way of distilling meaning that can be used to search databases.
- ☒ All of the above.

Correct!

A keyword is all of these descriptions.

? Check

2. We can locate the keywords in our research by...

- ☐ Asking the library staff
- ☐ Using a piece of software
- ☒ Remove all superfluous words

? Check

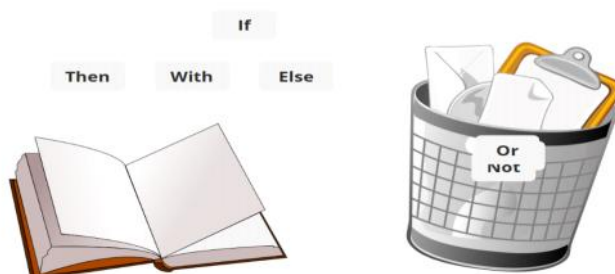
2. We can locate the keywords in our research by...

- ☒ Asking the library staff
- ☒ Using a piece of software
- ☒ Remove all superfluous words

Correct!

? Check

3. Drag all the correct common Boolean operations to the book. Drag the incorrect options into the bin.



Topic 4

28 May 2025 09:22

Check

Question 1 of 3

Which of these are good research questions?

Read each set of questions as they appear below and select which you feel is the best research question of the two.

- ☐ What effect does the pandemic have on people's minds?
- ☒ What effect has the isolation of young adults had on their mental health?

Correct!

A is not specific enough. What effect? What people? Which pandemic? You can see with question B that data can be collected from primary and secondary sources and that the targets are clearly defined.

Check

Question 2 of 3

Read each set of questions as they appear below and select which you feel is the best research question of the two.

- ☐ What factors led to homosexuality being legalised in the UK in 1967?
- ☒ How do Welsh rugby fans relate to the LGBTQ+ movement since Gareth Thomas announced that he was gay?

Not quite...

A is too broad and has probably been researched already. B identifies an underexplored aspect of the topic that requires investigation.

Check

Question 3 of 3

Read each set of questions as they appear below and select which you feel is the best research question of the two.

- ☐ Where do most immigrants come to the UK from?
- ☒ What are the similarities and differences in the experiences of recent Syrian immigrants in the UK?

Correct!

A is too simplistic, asking for a straightforward fact that can be easily found online. B is complex and a comparative question that requires a detailed discussion to answer.

Check

Take a few moments to answer the following four questions to help reinforce your understanding of this section.

Question 1 of 4

True or false? A hypothesis is really a question that can be used to predict the outcome of your research.

- ☒ True
- ☐ False

Correct!

A hypothesis is really a question that can be used to predict the outcome of your research. Just like the example of buying a car, it frames an answer with a question that can be tested. As we have seen above, you may have several hypotheses that address different parts of your research.

Check

Question 2 of 4

A good hypothesis should have the following:

- ☐ Relevant variables.
- ☐ A specific group.
- ☐ A predicted outcome.
- ☒ All of the above.

Correct!

A good hypothesis should have a way of approval or rejection with a test, that answers positively or negatively. A test could be an experiment, observation or using statistics. When using a statistical hypothesis, we weigh up the odds and come to a balanced conclusion.

Check

Question 3 of 4

One way to phrase a hypothesis is to:

- ☒ Phrase it as a correlation.
- ☐ Phrase it as a corporation.
- ☐ Phrase it as a relation.

Correct!

In this approach, you spot a correlation where you state the predicted relationship between the variables.

You can also phrase your hypothesis as an IF...THEN statement or compare and state the differences between two groups.

Check

Question 4 of 4

When you see a question with the letters (H0) before it you know it is the:

- ☒ Default position if the subsequent hypothesis tests fail.
- ☐ Hypothesis that has null values associated with it.
- ☐ Hypothesis that is the first one in the list.
- ☐ All of the above.

Correct!

If your hypothesis is using some statistics to analyse the question being answered, you will also have to write what the answer falls back to if no association is found. This default fallback position is called the null hypothesis and it is written with 'H0' before it. The subsequent tests are written with the number after it, (H1, H2, H3...).

Check

Question 1 of 2

Which **two instincts** are in conflict when we are learning from feedback?

- ☐ The worry of not finishing on time.
- ☒ The joy from learning something new.
- ☒ Fear of being shown up for being wrong.
- ☐ The feeling of success from completion.

Correct!

Most people will say that learning new things results in a feeling of joy. They will also report that when someone tells them that they are wrong they feel uncomfortable or upset. Overall, feedback is a vital conversation you must use to improve your ideas, but the process is not naturally joyful.

Check

Question 2 of 2

According to Heen's TED talk, the people who actively sought critical feedback were:

- ☐ Less successful.
- ☒ More successful.
- ☐ Very upset.
- ☐ Ignorant.

Correct!

According to Heen (2014), those who sought critical feedback are said to adapt more quickly to new roles, they report higher satisfaction, they get higher performance reviews, and they accelerate their own learning. This also changes the way other people see them.

Topic 1

24 June 2025 12:05

Check

Question 1 of 2

Would a survey of 300 students, chosen at random, from your university and asking them the question: "On a scale from 1-5, how satisfied are you with your professors?" be a good sample?

 Yes

 No

Check

Question 2 of 2

Could research of the recovery of people from Covid living on the island of Jersey be used be applied to people living in the city of New Delhi, India?

 Yes

 No

 It depends

Correct!

The survey has been conducted at random to avoid any bias. The survey will of course have some bias as it is a sample of the entire university, but it has mitigated this by randomising the trial.

Correct!

It depends. Do you think that the people living in Jersey are comparable to the people who live in New Dehli? If yes then the research is valid, if not then the research should not be used in the New Delhi context.

Topic 2

24 June 2025 12:17

Check

Question 1 of 1

Step 1	✓	Familiarising yourself with the data
Step 2	✓	Generating initial codes
Step 3	✓	Identifying themes
Step 4	✓	Reviewing the themes
Step 5	✓	Giving your themes a name
Step 6	✓	Writing about your themes

Correct!

You selected the correct responses.

Appendices

17 June 2025 12:45

Appendices: Supplementary information

An appendix page/section can be used to include relevant supplementary information such as indirect supporting information to task answers, forum posts, tutorial activity answers, evidence of team-working.

Pilot Study Feedback

A pilot study was conducted individually by running AI-assisted coding tasks on publicly available code samples. Performance metrics such as debugging time, error detection rates, and code completion speed were recorded. Additionally, draft survey questions and data collection tools were tested to ensure clarity and ease of use. During this pilot phase, it was noted that some survey questions were unclear or too broad, which could lead to inconsistent responses. These questions were revised to be more specific and easier to understand. The performance measurement process was also adjusted to better capture subtle differences in AI tool effectiveness. This pilot helped identify potential issues with the data collection methods and allowed for improvements before the full study begins. Incorporating these changes will enhance the reliability and validity of the results by ensuring that the tools are clear and effective for measuring AI-assisted software development.

For the Tutorial Activity answers, I have plotted various answers throughout this OneNote document in the 'Unit 1, Unit 2, Unit 4 Sections' Unit 3 was not required from the assignment task so I have left the answers out for the purpose of this assignment.