



Scan to access prototype

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Abstracts

When students receive a research question during a literature review, they struggle to begin and may need to revise their search content multiple times. This project seeks to automate the process of generating advanced search strategies from student-submitted research questions by constructing a prototype on 2Dsearch, which integrates data visualization, AI and natural language processing.

The project focuses on design outputs and quick iterations, resulting in a set of clickable, hi-fi prototypes verified through two rounds of usability testing. It facilitates the academic search process for beginners by reducing technical friction, enabling them to achieve a precise set of search structures in less time.

Introduction

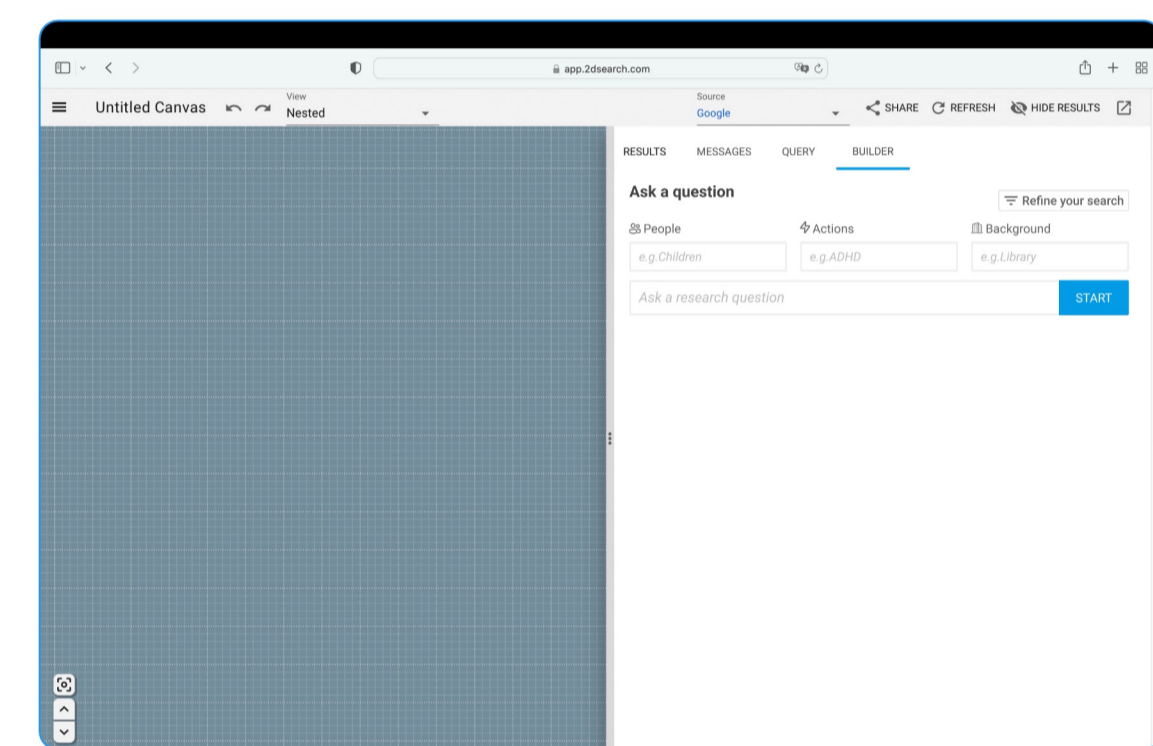
The process of describing items with lengthy, intricate search strings is not straightforward for students.

45.1% Postgraduates Non-information experienced users

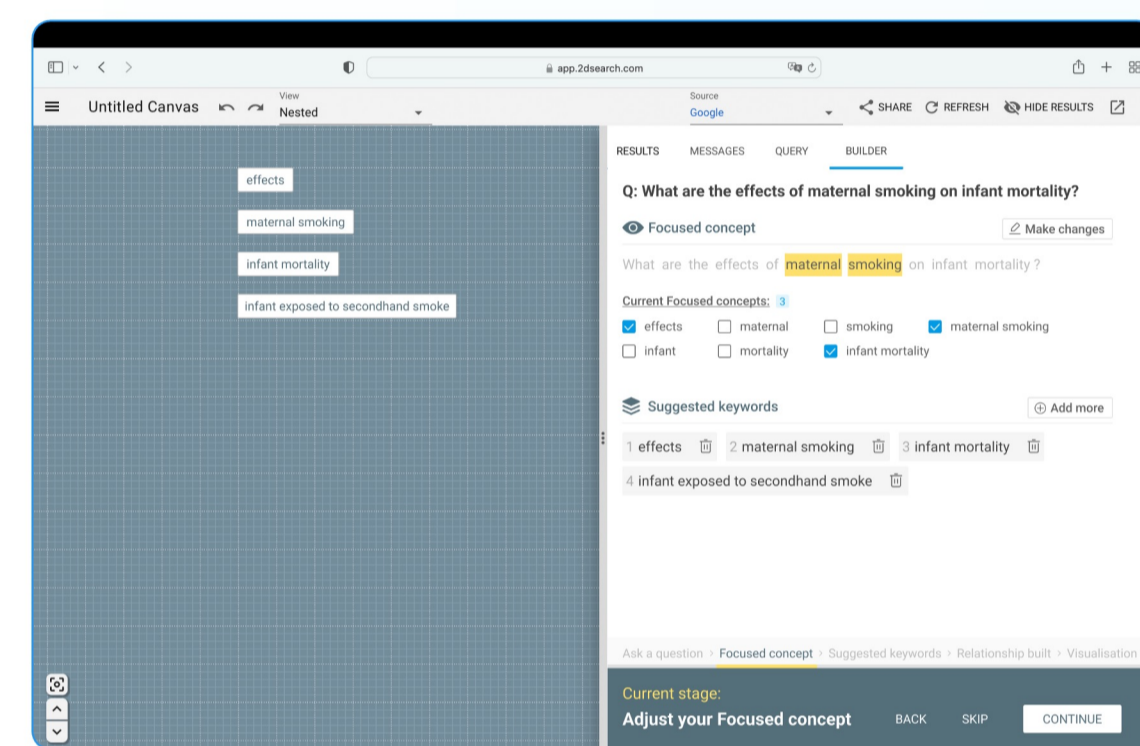
<12% Postgraduates used advanced search strategies

Academic search engines currently are unable to handle questions structured into conceptual splits. In order to enhance comprehension of student queries, this project offers the academic community a search engine on 2Dsearch that can comprehend and answer the daily language of beginners.

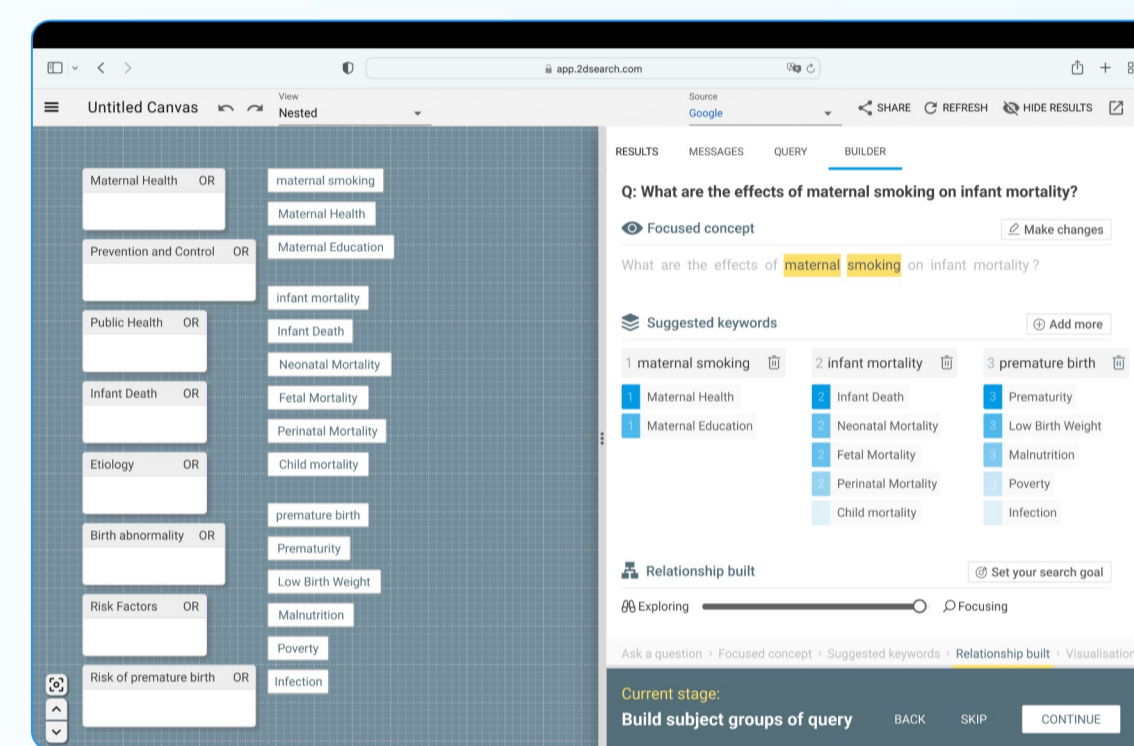
Final Design



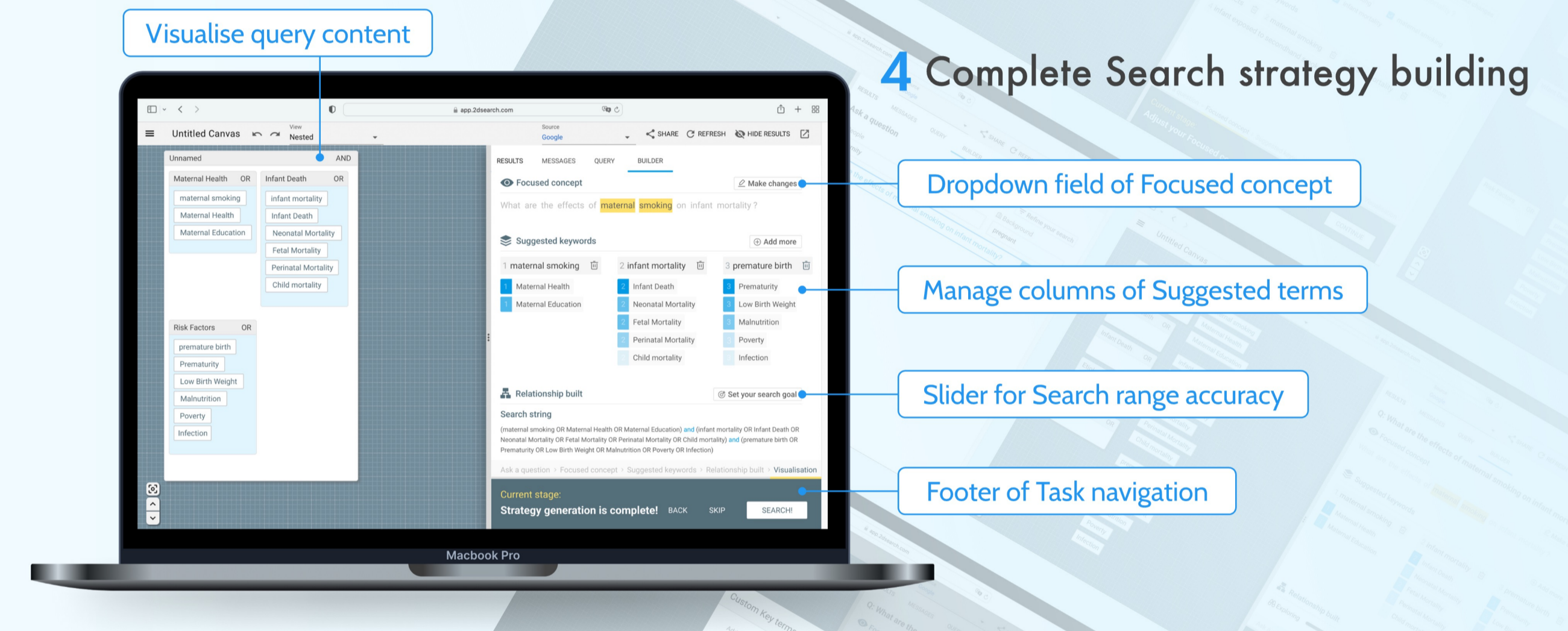
1 Ask a research question



2 Adjust the Focused concept



3 Set the Search range accuracy



4 Complete Search strategy building

Visualise query content

Dropdown field of Focused concept

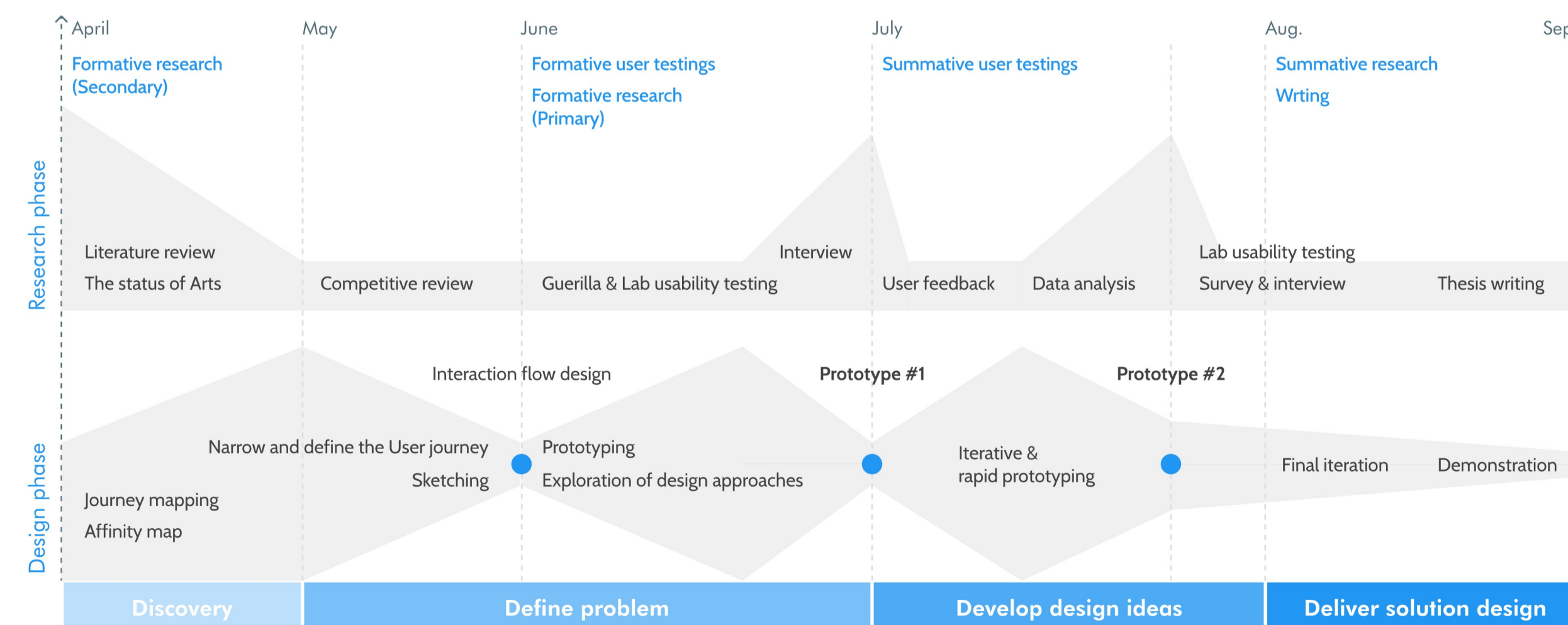
Manage columns of Suggested terms

Slider for Search range accuracy

Footer of Task navigation

Research Methodology

This project is user-centred, based on the Double-diamond model and has gone through a complete closed-loop process of desk research, ideation, prototyping, testing and delivery.



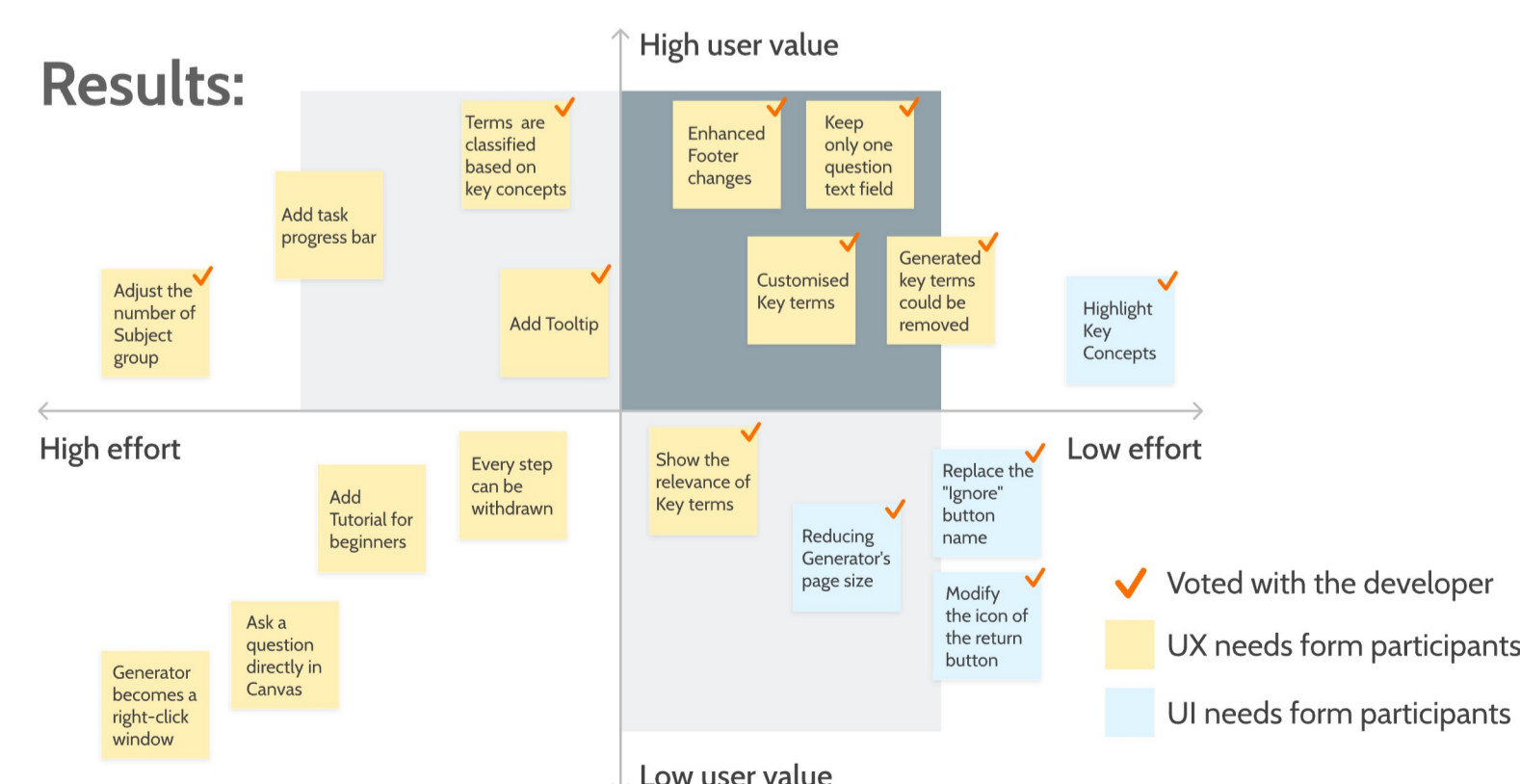
Evaluation & Results

User Testing 1.0

Goal: Identify usability issues in prototypes and capture user ideas that were missing from formative research.

Method: Clickable tasks + interview

Results:



User Testing 2.0

Goal: Improve the Learnability and fault tolerance of the final prototype to enhance the Satisfaction from users.

Method: Clickable tasks + questionnaires + interview

Results: Table of SEQ & ASQ results

Participant	SEQ-1	SEQ-2.1	SEQ-2.2	SEQ-2.3	ASQ
P1	6	4	7	7	6
P2	5	6	7	7	6
P3	5	5	5	4	4.3
P4	3	6	6	4	5
P5	7	3	7	7	6.33
P6	6	5	7	5	5
Average	5.33/7	4.83/7	6.5/7	5.67/7	5.44/7

Conclusions & Future Work

The solution, which can automatically generate search strategies from research questions, enhances the UX throughout the literature search process and is a new exploration of intelligent search engines to understand the intent behind user queries. Future work will aim to utilise the potential of machine learning to automatically substitute with optimised research questions when the users enter keywords in the search box.