

USING LARGE LANGUAGE MODELS TO ASSIST DEVELOPERS IN CREATING VISUALIZATIONS FOR CITIZEN SENSING PROJECTS

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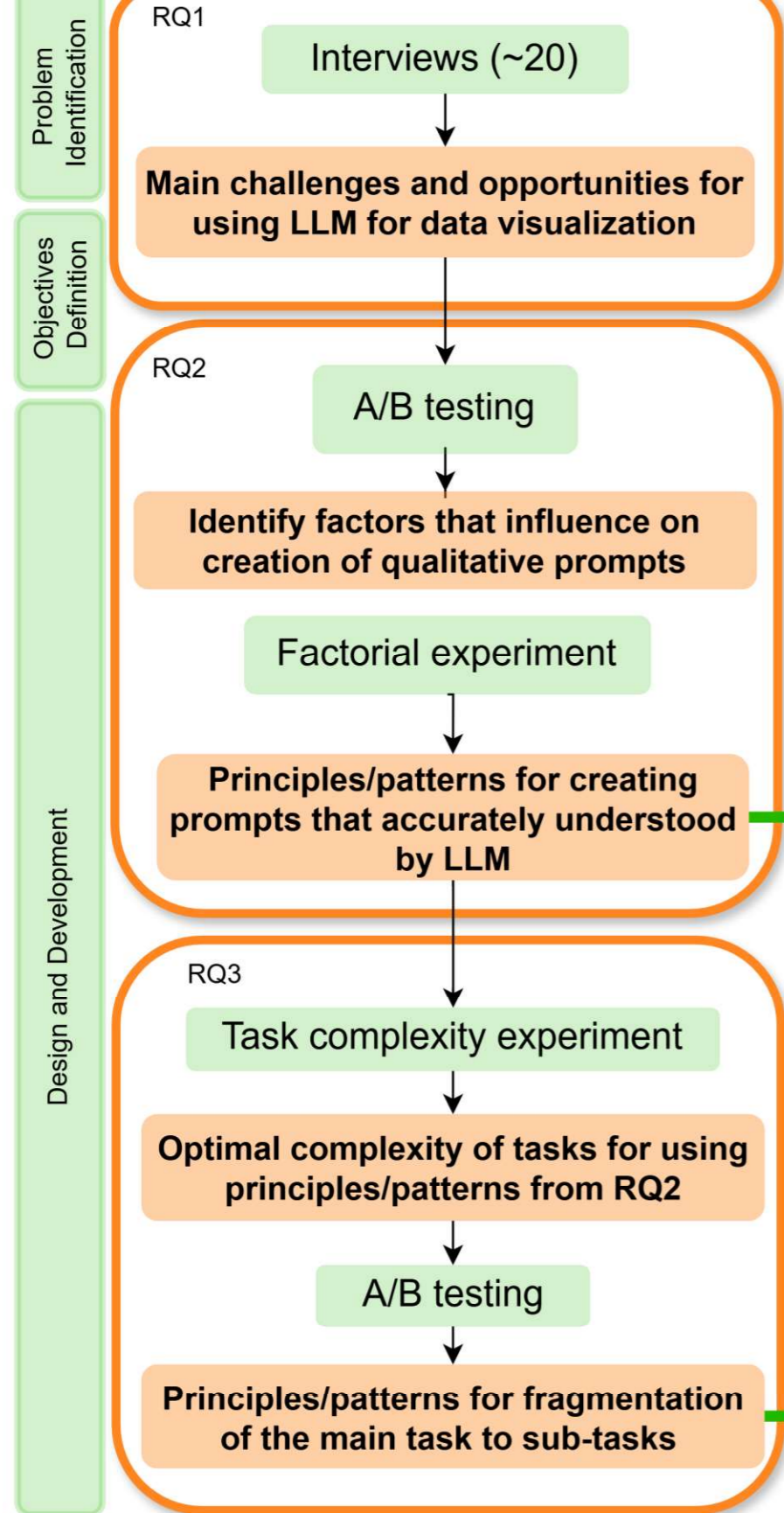
Picture 1. Gru's Plan for creating Data Visualization

Background: there are many different areas of life where large language models (LLM) are used. There can be areas with completely different levels of responsibility. Data visualization is a specific case of code writing which will be studied in this research. This field is complicated not only because of difficulties in writing code tasks, but also because of the necessity of creating an original concept design idea of the final result.

Methodology

Research Gap

❖ Potential of using LLM in code generation tasks. Data visualization is a



specific case of code generation, it has its own unique aspects: focus on understanding data by the users; boundaries given by web frameworks and data visualization libraries.

- ❖ Many civic tech developers lack the necessary resources and architectural knowledge to implement effective data sensemaking solutions

Research Questions

- ❖ **RQ1:** What are the main challenges and opportunities for using LLM for data visualization?

- **RQ1.a:** In which phases of development does not LLM use? Why?

- **RQ1.b:** Main problems during using LLM for data visualization?

- ❖ **RQ2:** What principles/patterns will allow developers to formulate a prompt so that it is most accurately understood by LLM?

- ❖ **RQ3:** What principles/patterns will allow to design the plan for interaction with the LLM to create the final result?

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