**Project Definition of Goals**

**What is the question to solve?**

Exploring innovative methods to design an interactive arch that captures attention and engages visitors through technology and design.

**Why is this a relevant problem?**

Interactive installations transform public spaces into dynamic environments, enhancing visitor experiences and satisfaction by making the space more engaging and educational.

**Solution strategy**

**Visual and Sensory Engagement:** Implement dynamic lighting effects that respond to visitor presence, using motion detection sensors.

**Interactive Features**: Incorporate capacitive touch sensors within the arch for visitors to interact directly with the installation. Motion sensors will also be used to respond dynamically to visitor movements.(optinal)

**Signage:** Use eye-catching, dynamic signs that can light up or display interactive elements to draw visitors towards the installation.

**Expected Outcomes**

The installation will attract visitors through its interactive features and dynamic visual displays. It will offer an experience that encourages visitors to explore and interact with the installation.

**Quality and Performance Metrics**

The installation's success will be measured by visitor engagement levels, the functionality of the interactive features, and the durability of the installation in an outdoor environment.

**Validation of Project Success**

Quality will be validated through visitor feedback( by their face expression), technical testing of sensor responsiveness, and assessments of the installation's durability under various environmental conditions.

**What are the next steps?**

**Further Development:** Refine the interactive features based on visitor/stake holders feedback and initial testing results.

**Expansion**: Consider additional features or expanded areas using similar technology.

**Assessment Sustainability**: Finalize the evaluation of solar power as a viable energy source for the installation.(optional)

**Sources of Information**

**Dynamic Lighting & Sensor Usage:** Inspired by the "Rain Room" by Random International, information adapted from general descriptions of interactive art installations known for their innovative use of sensors and lighting.

**Sensor Types and Arduino Compatibility**: General best practices in DIY Arduino projects, typical sensor applications, and energy efficiency considerations sourced from Arduino community forums and electronics hobbyist websites.

**Powering Options and Sustainability: D**iscussions on sustainable energy solutions for public installations, with considerations of solar power's feasibility in outdoor settings based on renewable energy forums and tech innovation blogs.