1.1 Problem Statement

What problem is your project trying to solve? Use non-technical jargon as much as possible.

Our goal is to find a plethora of platforms, such as GENI (a now deprecated open-infrastructure large scale networking and distributed systems initiative), to bridge the gap between theoretical understanding and actual implementation. Our study will investigate several infrastructures and resources to determine the optimum platform for creating realistic and real-world laboratories for networking and cybersecurity courses.

1.2 Requirements & Constraints

List all requirements for your project . This includes functional requirements (specification), resource requirements, qualitative aesthetics requirements, economic/market requirements, environmental requirements, UI requirements, performance requirements, legal requirements, maintainability requirements, testing requirements and any others relevant to your project. When a requirement is also a quantitative constraint, either separate it into a list of constraints, or annotate at the end of requirement as "**(constraint)**". Other requirements can be a single list or can be broken out into multiple lists based on the category.

Building and designing labs dedicated to network and security on various platforms like *Geni* (a now deprecated open infrastructure distributed research system) that will hold their longevity. **(Functional)**

Develop relevant lab documents to accompany various activities and programs **(Functional)**

Create Interactive Learning Materials with supported research and documentation **(Functional)**

Research various platforms and programs to simulate real world network activities and security threats **(Non-Functional)(Quantitative)**

Project needs to be completed before May 2024 **(Quantitative)(Resource Constraint)**

Project members are expected to 8-10 hours of research and involvement within each week **(Quantitative)(Resource Constraint)**

Access to the internet and a computer

1.3 Engineering Standards

What Engineering standards are likely to apply to your project? Some standards might be built into your requirements (Use 802.11 ac wifi standard) and many others might fall out of design. For each standard listed, also provide a brief justification.

At the current stage of our project, the only “Engineering Standards” we see is high quality research standards and proper citing and referencing. Based on our research, each program may require their own Engineering Standard that will be documented and respected once we begin implementing various labs on their platform; this is something that will be revealed to us at a later date. Our advisor is also recommending we hold ourselves to the Iowa State Lab documentation standards when organizing interactive deliverables with accompanied research.

1.4 Intended Users and Uses

Who benefits from the results of your project? Who cares that it exists? How will they use it? Enumerating as many “use cases” as possible also helps you make sure that your requirements are complete (each use case may give rise to its own set of requirements).

This project's primary audience is college-level educators. The outcomes of this research will be a resource able to be utilized by both students and educators. The project material will be used in two ways. One is determined by the educator when deciding on the exact platform to be used as a teaching apparatus. The second is by students when they follow laboratories established or migrated as a result of the final project..