Carnegie Mellon EaaSI Statement of Importance

Please provide 250 words that address the following:
- Why is software preservation important?
- What are the advantages to community infrastructure or approaching software preservation and emulation as a collective action problem?
- What are your strongest use cases for emulation?
- What are you hoping to learn through your participation in the EaaSI Network?

Most modern activities are dependent in some way or another on a dense network of software and its related technical dependencies. In order to ensure continued access to human knowledge production, it is imperative that software preservation become a significant and embedded societal practice. Without a concerted, collaborative effort to maintain, archive, and reveal software data and development practices we run the risk of losing a significant amount of humanity's history. One significant means of software preservation is emulation, but an emulation solution, at scale, requires more resources than any single institution could reasonably support. The EaaSI project, in gathering use cases from institutions with different collections and collecting priorities, provides an expanding supportive network not possible through monolithic approaches.

In CMU's case, we are most interested in software preservation to support pedagogy and research reproducibility. A significant amount of the courses at CMU rely on software support systems, teaching programs, or commercial products to enhance our students' learning. Because some of the best resources may not be the newest ones, we are interested in how software emulation can maintain older software tools that still have pedagogical value.

For research reproducibility to be possible going forward, we believe that software preservation will become a standard practice in many fields. Currently, many journals in the technical and life sciences are now requiring not only research data accessibility but also research software reproducibility. We believe that our participation in the EaaSI project will help us address this new future proactively to the benefit of our current and future faculty and students.