**CMSC451 - CS 23-313** *Elementary School Computer Science Engagement* **Project Proposal**

**Problem Statement (Kiersten)**

1. Computational thinking will be a fundamental skill set used by everyone in the world by the middle of this century. The study and introduction to computer science is the first step to the development of these computational thinking skills.

In some schools the teachers are not provided with adequate resources to help them understand and expose computer science problems to the students in elementary and middle school. This makes it more complex for these students to grasp the concept when they get to higher grade levels. Therefore, equipping the teachers with necessary resources to alleviate the fear most teachers may have when faced with computer science topics and providing fun and engaging activities for middle schoolers in early years will help them succeed in their college, careers and civic life.

**Business and Functional Requirements (Jared/Mason)**

1. Business requirement- (what is needed, define the problem) The primary deliverable for this project will be a website that houses all interactive activities that are created. We are looking to provide an easy-to-use website where teachers can have resources for computer science activities in one place. The website will have links that take the user to pairings of lesson plans and activities so teachers can provide a lesson, then have the students complete the activities. The overarching goal of this project is to spark the interest of elementary and middle schoolers in computer science. Current Virginia SOL’s do not encompass computer science so we are finding a way to blend the two and ensure students hit those SOL’s while also getting some exposure to computer science topics in a fun, engaging way.
2. Functional requirements (how to fulfill the need, the solution) In order to fulfill this requirement, the solution we are creating is a web page that is both user friendly and easily accessible. The web page will have categories that separate activities into their respective sections. Based on which section is selected, a different collection of activities. Each activity will contain interactive activities that will aim to engage students while simultaneously teaching them about Computer Science. Understanding that Computer Science is not the easiest subject to grasp, we will simplify activities as well as the instructions for teachers in order to ensure usability.

**Stakeholders (Brianna)**

Question used to formulate these categories : <https://www.scu.edu/ethics/focus-areas/more-focus-areas/engineering-ethics/ethical-considerations-in-the-senior-design-project/identifying-project-stakeholders/>

Demographics

* The design is intended for teachers to utilize. The project is intended to be a public website in which teachers all across Richmond can access.
* The design will be used on a daily basis by teachers in their classrooms intended as a lesson plan for the day.
* Currently, there is not a consolidated website that has all the aspects sorted to be easily accessible by teachers.

Communities

* Our design does not benefit and/or harm specific social/economic/racial/age/gender/religious groups more than others.
* Our design will respect legal codes as all of our research will be cited properly to give those whose work it is credit.
* The benefits that this will have on the community of Richmond is an increase in the prevalence of Computer Science engaging lesson plans for younger age groups. These will be long term effects.

Business Competitors

* Our design competes with existing products and businesses as it consolidates all resources from different websites into one place where teachers can locate it.
* This website will compete as a new business as it will be easily navigable for teachers, and also alleviate the fear that teachers from non technical backgrounds may have when it comes to teaching Computer Science concepts.
* The only proprietary information in our project would be the password for the website to allow for edits and that is only known between our sponsor/mentor and group members.
* Our design can threaten other websites that may not be as clear in concise with their information regarding teacher Computer Science principles.

Environment/key ecosystems

* The design will be repurposed once we go into the school's spring semester and try to implement them.
* As a group the feedback from our non technical friends and the teachers that will be using our website in their classroom will help with expanding upon the design.