

Spring 2021 Project List

Project	Sponsor	Team Assigned
<p>Theme Park - Phase 2</p> <p>The purpose of this project is to develop a utility and associated user interface to collect and distribute information regarding the non safety critical operation of an amusement park attraction. The utility shall consist of three primary parts:</p> <ul style="list-style-type: none"> • A web based dashboard for users to view information and interact with the system in an advanced way. • A landline telephone based “auto-attendant” to interact with the system in a simple way. • A database and associated computing infrastructure to store, retrieve and process data. <p>The team will develop a system to create a schedule routine based off of user provided parameters in a GUI interface. The scheduled routines will be utilized by the team to determine when automated phone calls will be initiated to the target phone number. The automated phone calls will then prompt the user for data entry, and the resulting data should be entered into a database. The students will also utilize the data from the database to display interactive charts on a GUI.</p>	<p>Effortless Presence</p> <p>damen@effortlesspresence.com zach@effortlesspresence.com;</p>	<p>Team 4 Pigs</p> <p>Mondays</p>
<p>Linux Namespace Performance</p> <p>Linux namespaces are the basis of container orchestration tools such as Docker. Students will characterize the behavior and performance of a Linux namespace implementation, specifically the Inter-Process-Communication (IPC) namespace. This will involve researching Linux IPC primitives, both the System V and Posix implementations, as well the Linux namespace capability. The team will gain valuable insights into configuring virtual machines, IPC primitives and Linux internals.</p>	<p>ASRC Federal</p> <p>MBerenato@asrcfederal.com</p>	<p>Team 2 Foxes</p> <p>Mondays</p>
<p>Software Team Secure Coding Education</p> <p>Weaknesses in code may lead to exploitable vulnerabilities in software. Secure Coding Standards aim to avoid the introduction of defects. Creating an educational platform to help educate developers on how to prevent and how to recognize several common weaknesses would lead to more secure software and systems. This platform should use an extensible framework to present code examples with a weakness aligned to the Common Weakness Enumeration (CWE). The developers then locate the fault and implement a fix to the code. This process allows developers to see real-world results of secure coding practices to help them better internalize them and use them moving forward. The platform and framework would enable educators to develop curriculums on particular weaknesses.</p>	<p>Lockheed Martin</p> <p>jonathan.munilla@lmco.com andrew.s.resch@lmco.com</p>	<p>Team 5 Giraffes</p> <p>Wednesdays</p>
<p>Static Analysis Tool</p> <p>The earlier a cyber threat is discovered, the easier it is to mitigate and decrease the potential impact. If a cyber event is discovered retroactively, there must be sufficient information for investigators to determine cause and chain of events.</p> <p>A software tool could manage, analyze, and store pieces of code to provide a layered defense capability. The input to the software tool could be code or files of code. The tool would then scan the code for any errors or potential attack vectors (memory leaks, potential SQL injections), hash the file and then store it in a database. If a new version of the code is inputted, the tool completes the same scan, outputs scan results and code changes, and stores the change information. An extension of this tool could be the ability to manually enter potential attack vectors or any other cyber SME analysis.</p>	<p>Lockheed Martin</p> <p>jonathan.munilla@lmco.com andrew.s.resch@lmco.com</p>	<p>Team 3 Kangaroos</p> <p>Wednesdays</p>
<p>Lab Workflow</p> <p>Bristol Myers Squibb (BMS) is one of the largest pharmaceutical companies with a world renown reputation. The BMS rely on LIMS open source software to manage the everyday lab workflow. The software has some desired features missing while other features are excessive. It has simple UI that may need updating. The software is well documented and it enables full cycle of analysis of the workflow. The software is implemented in Python. The project will require the students to develop additional features for existing open source software as requested by the BMS scientists.</p>	<p>Bristol Myers Squibb</p> <p>serhiy.hnatyshyn@bms.com hnatyshin@rowan.edu</p>	<p>Team 1 Lions</p> <p>Fridays</p>