The University of Nebraska at Omaha



IT Innovation Cup

***Hackathon League***

Challenge 1 – Game & App Development

**UNO IT Innovation Cup Guidelines**

**University of Nebraska at Omaha**

**2023: “*Hackathon League*”**

**Overview**

The School of Interdisciplinary Informatics (Si2) at UNO is home to three programs: IT Innovation, Cyber Security, and Bioinformatics. In IN Innovation, we work to ensure students have a broad-base of knowledge to go out and create technology-based solutions to real-world problems.

Cybersecurity addresses problems in the fundamental understanding of the design, development, implementation, and life-cycle support of secure information systems. The need for secure information systems has become a paramount concern as the computer-enabled, Internet-connected, digital-based global society of the 21st century emerges.

Bioinformatics is an exciting and rapidly-growing field that uses techniques from the computer and information sciences to study biological information and structure. Specifically, it is the science of developing computer databases and algorithms to facilitate and expedite biological research, particularly in the area of genomics.

**Challenge**

Make a board game! Your game’s theme should focus on either cyber security or bioinformatics (or any crazy amalgamation of the two). Game tasks could include encrypting simple passwords or decoding genome sequences. Any references to cyber or bio-I should be roughly accurate but the game does not need to be “educational”.

The game should have an objective, clear instructions, and you should diagram the game-play. What is the path to victory, who are the opponents (other players or does the game work against you), what happens in each turn?

Since this is **IT** Innovation, your game needs to have a digital component in addition to any physical elements. Create an app to accompany the game that is part of game play. This could be as simple as a digital dice roll up to most game mechanics happening on the app with only a few physical pieces in use.

This is a prototype, use simple tools like MIT App Inventor or Code.org’s App Lab to quickly create a working app. You can create the physical parts from scratch, scavenge parts from existing board games, and find household objects to play the role of player/opponent pieces.

**Deliverables & Due Date**

All work is due by Midnight on December 9th. Materials should be e-mailed to [dvbabb@unomaha.edu](mailto:dvbabb@unomaha.edu)

* Links to your code or attached files for your app.
* Diagram/Flowchart of gameplay.
* Rules for how the game is played.
* Video explaining and demonstrating gameplay (roughly 5 minutes).

We will have an area demonstrating each game at the final event so please keep track of the items used in your game. You can also feel free to improve the game over the course of the year, but that will not impact your overall score.

**Resources**

* <https://game-icons.net/> - Free icons you may want in your game.
* <https://app.diagrams.net/> - Tool for creating flowcharts
* <https://boardgamegeek.com/boardgamecategory/1120/print-play> - Existing printable games that might help inspire ideas for elements you print.
* <https://www.dicebreaker.com/topics/print-and-play/best-games/best-print-and-play-board-games> - More printable games
* <https://boardgamegeek.com/browse/boardgamemechanic> - Overview of boardgame mechanics, terms, and phrases.
* <https://studio.code.org/> - Code.org App Lab for App Development
* <https://appinventor.mit.edu/> - MIT App Inventor for Android App Development

You may also be interested in the tech, samples, examples, or assistance available in the UNO’s Creative Production Lab - <https://www.unomaha.edu/criss-library/creative-production-lab/game-development.php>

**Judging Criteria & Rubric**

Each of the projects will be accompanied by a rubric that will be used by the judges. The goal of each hackathon event is to impart some technical skill that will be useful in the final event. The final will be worth twice that of any of the individual competitions.

Final score will be the top 3 scores from the four hackathons (max of 30 points) plus your final hackathon score (max of 20 points).

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| Criteria | Points |
| Video Demonstration of Game | \_\_\_\_\_/2 |
| Attached Code or Link to Material | \_\_\_\_\_/2 |
| Rules for Gameplay | \_\_\_\_\_/2 |
| Flowchart for the Progression of the Game | \_\_\_\_\_/2 |
| Theme & Overall Design | \_\_\_\_\_/2 |