DisconNet
Educating the Public
Kyle Tillotson, Johnny Edgett, Yunqing Yang, Sylvia Gong, Jesse Lee, Alfonso Lopez, Ryan McMahan

Abstract
DisconNet is a video game designed to teach cybersecurity concepts in an entertaining and engaging fashion. We designed DisconNet as a tower defense style game where a player constructs virtual defenses to protect a network from malicious threats. The player must use tools such as firewalls and packet scanners to effectively and efficiently defend the network. The result is a prototype game that shows the promise of using video games to educate the population on this important concept.

Architecture
Level 1
Firewall
Cost: $100
Upgrade: $50
3 min
The player is shown packet activity and is instructed to place a firewall to block a specific port.

Level 2
Packet Scanner
Cost: $50
Upgrade: $50
5 min
Scans any packet that lands on it and reveals the source IP address and port number of the packet.

Level 3
Intrusion Detection System
Cost: $200
Upgrade: $100
5 min
IDSs are used to repair compromised access networks and servers. They scan from the closest network infrastructure.

Level 4
Phishing Training
Cost: $50
5 min
Phishing awareness training is given to the users of a particular access network. The chance of bad packets spawning will be reduced.

Level 5
Virtual Local Access Network
Cost: $200
5 min
Players can create their own segment, eight tiles long, and move up to two pieces on network infrastructure onto it.

Impact
We focused on making our project a game that can be used to help people learn about the cybersecurity infrastructure that occurs behind the scenes everyday. This helps to both educate the average user and help inspire people to pursue a career in cybersecurity. We designed this game to work on the mobile platforms Android and iOS to expand the impact.

Metric
Both Android and iOS have built-in rating systems which allow for quick and easy feedback to be gained. Combining this rating system with an optional questionnaire offered at the end of the training levels allows for the most information to be gained.

Results
The game provides a framework which can later be expanded with additional levels, game units, packet logic, and so forth. It was designed using the Unity3D program which allows for it to be easily expanded.

Engine and Language
- Unity3D
- C# with MonoDevelop Library

Core Design
- Core game with packet layer and units which interact with the player
- Training levels to help people understand how the units interact

Modularity
- Design allows for new levels to be created easily
- New units can be added that interact with packet layer framework
- New and challenging levels can be added for replayability

Summary
During the semester, our team worked together to develop a framework on which an education cybersecurity game can be built.

While we ran into some difficulties in programming we were able to create a design and framework that can be used to help teach cybersecurity principles to those who play

We also learned how to create and develop a complex, visually focused program using a new set of tools.