



Wardriver

Password: tank

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Introduction

This project is not an ordinary computer case, and is certainly different than what you would find in retail. The name of this case mod is called "Wardriver", taken after the computer term used in cyber security. The people who participated in this project are students that attend A&M consolidated high school. They are currently enrolled in the career and technology courses, and they are Trent Spears, Ryan Romero, Alexander Hanks, and Micheal Ivy VII. This project consisted of a lot of planning, budgeting, and competition preparation. The Idea of Wardriving is to take an average toy tank that a toddler would play with, and turn it into a modern computer. This proved to be a very interesting project for the group, and inspired a lot of ideas about what can be done with it.

Meeting One: Brainstorming

Prepared by: Alexander Hanks

Meeting Date: 10/24/2015

Meeting Attendees

1. Trent Spears
2. Micheal Ivy
3. Alexander Hanks
4. Ryan Romero

Meeting Agenda

- Team Member Introduction
- BrainStorm Ideas for the Computer Case
- Assign Roles
- Figure Out Scheduling For Future Meetings
- Discuss What Supplies are needed
- Record a Budget
- Create a Presentation for School Approval

Summary:

In the first meeting the Group had a chance to introduce themselves to each other along with each member discussing where they would contribute. The group members then collected ideas on how to construct the custom computer case. This involved planning such as where to make cuts and place hardware components along with where to make improvements. After measurements were taken on the tank, the hardware layout was then established. The group then discussed what supplies they would need along with budgeting. Finally Ryan and Alexander prepared a presentation for the Coordinator in order to approve the project for the Casemod Competition for SkillsUSA.

Meeting Two: Construction

Prepared by: Alexander Hanks

Meeting Date: 11/07/2015

Meeting Attendees

1. Trent Spears
2. Micheal Ivy
3. Alexander Hanks
4. Ryan Romero

Meeting Agenda

- Cut the Computer Case
- Drill Holes for the Motherboard Standoffs
- Install the Motherboard
- Drill Holes For the Power Supply Screws
- Install the Power Supply
- Route the wires and Cable Manage
- Insert the RAM
- Install the Liquid Cooler's Radiator
- Insert the WIFI Card
- Install Appropriate Hardware Drivers

Summary:

The purpose of the second meeting was to install the computer hardware into the Tank Case. This involved cutting the case from the measurements taken in the meeting prior. There were some holes drilled into the computer case to ensure the components would be placed properly. Then the Computer Hardware was installed into the computer case. It's worth mentioning that the components were examined carefully to ensure the components were not touching the computer case. The internal cables were routed and organized inside the computer case. Finally the Hardware drivers were installed inorder to make sure the hardware is working properly.

Meeting Tree: Software

Prepared by: Alexander Hanks

Meeting Date: 01/23/2016

Meeting Attendees

1. Trent Spears
2. Micheal Ivy
3. Alexander Hanks
4. Ryan Romero

Meeting Agenda

- Format the Hard Drive
- Reinstall Ubuntu
- Install System Tools
- Test to see if everything is working
- Work on the Design Document
- Get the Status of The Projector

Summary:

The purpose of the third meeting was to install the operating system along with other softwares. The operating system was installed in the meeting prior, however there were some issues loading the operating system and this had to be reinstalled. This in consequence resulted in reinstalling the same drivers to ensure some of the hardware was functioning such as the WIFI card. Once the Operating system was installed, some systems tools were installed to monitor the CPU's temperature. Some other software was installed such as STEAM to demonstrate that the computer can run video games through its projector during the competition. Finally the team experienced a delay since the projector's shipping was pushed back. The next time the Team will meet will be to install the projector.

Meeting Four: Preparation

Prepared by: Alexander Hanks

Meeting Date: 01/31/2016

Meeting Attendees

1. Trent Spears
2. Micheal Ivy
3. Alexander Hanks
4. Ryan Romero

Meeting Agenda

- Tweak The Operating System
- Perform System Checks
- Install The Projector
- Plan Case Transportation

Summary:

The purpose of the fourth meeting was to make the final preparations for the competition. This involved customizing the operating system using various software options. There were also some last minute adjustments made on the computer case such as cable management, adjusting the radiator, cutting the holes out in the turret for the projector, and etc. Finally, there were also plans made on how to transport the computer case to the competition along with plans for backup components in case one of the computer parts broke down.

Supplies and Budget

<u>Material</u>	<u>Price</u>
ASRock H97M-ITX Motherboard	\$110
Pair of DDR3 Ram 8 gigabytes	\$50
Cooler Master liquid Cooler	\$54
Power Supply	\$72
Hard Drive	\$30
Projector	\$130
Cables	\$26
CPU Intel Pentium Haswell	\$55
Total Estimate	\$527
BUDGET	\$600

Original Picture

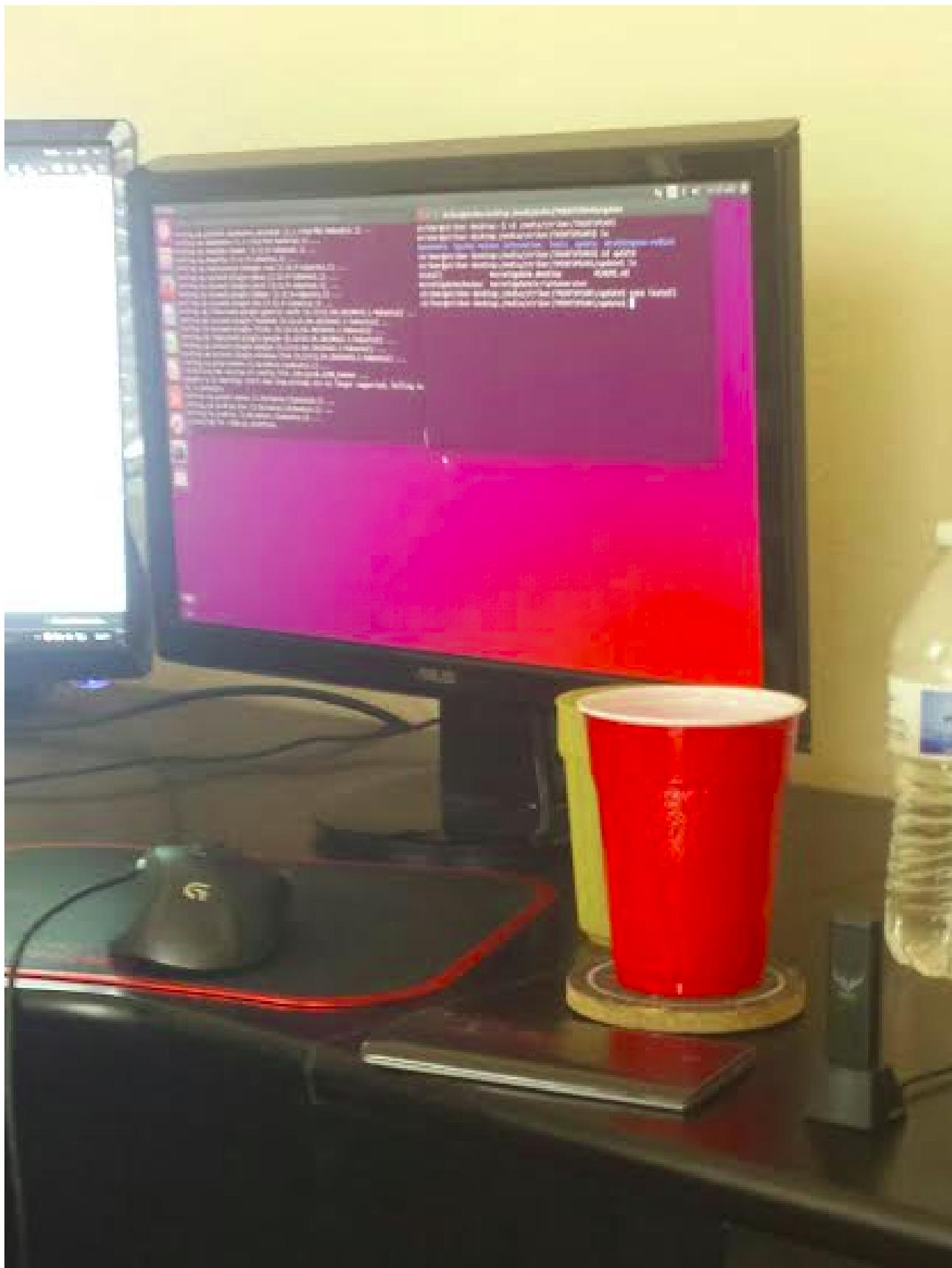


Process Summary

The planning process was rather short and easy. The idea was already in place and the shape of the casemod worked well with the form factor of the components. The construction process was much longer as the size of the casemod made it difficult for more than one person to work on it at a time. The construction process primarily consists of drilling screw holes into the casemod in order to secure the main components, such as the motherboard, liquid cooling radiator, and power supply backend. The process of installing the Operating System, Ubuntu Desktop 15.10, was rather long and tedious due to the hardware speed restrictions, primarily because of the hard drive speed, but following installation, configuration and customization was an easy and enjoyable process. The group had in mind themes of war, industrialization, and globalization and technology's effects on those events.







Testing Overview

When we were fixing up Wardriver, there was some issues when it came to testing the computer. We had an old version of ubuntu, and was unable to get a Wi-Fi adapter working, so we replaced the operating system. Other Issues when it came to testing was tweaking, especially when it took forever to install certain programs, especially when the packets were missing. We ran some tests which involved Overclocking and installed a program to see if the liquid cooling was working on the CPU. Overall, Wardriver was well a functioning vehicle that did not have a lot of problems.

Conclusion

Wardriver was an interesting experience, especially with the ideas we thought about afterwards. The project was well thought out and planned during the time we had, which ended very well. We did not exceed our budget then what we had planned, and Wardriver came out to open ideas for what we could do with it in the future. We plan on using the computer's HDMI projector to display old war movies. Some other ideas that were thought out was to use the leftover money to make Wardriver a mobile vehicle.