

# Reverse Engineering Challenge

*Acer Laptop*



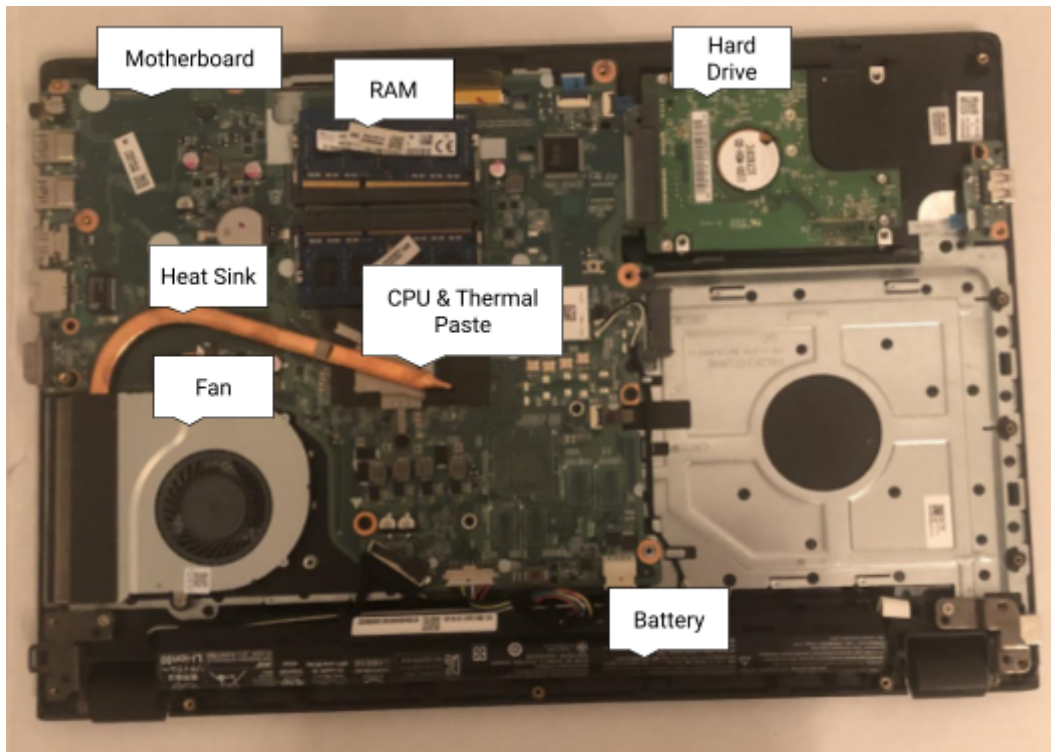
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## INTRODUCTION

I selected an acer laptop as I realized that although this technology is integrated into my daily life, I was unaware of how it operated. I hope that learning about the inner workings of the device will introduce me to the world of engineering and technology which our world today revolves around. Moreover, by learning about more complex devices, I hope to develop my familiarity with technology into more complex uses of technology outside of VEX robotics.

I was able to deconstruct the device by unscrewing the base which uncovered the motherboard. Other components include the screen and keyboard, however, the system was more reliant on the overall control system.



Component	Description	Image
<b>Motherboard</b>	<p>The main circuit board in the computer. It transmits power to components of the computer's hardware, connecting them and allowing them to communicate with one another.</p>	
<b>CPU (Central Processing Unit):</b>	<p>Known as the 'brain' of the computer system, it obtains instructions from the RAM and distributes them for other hardware to execute. The CPU can process multiple instructions at once due to having multiple cores.</p> <p>Thermal paste is the gray substance on the CPU and is used to transfer heat efficiently to the heat sink.</p>	

## Heat Sink

It is crucial to prevent overheating during the system's operation. The heat sink in this computer transfers energy from the CPU out through fins and works in conjunction with a fan that blows the hot air.



## Battery

The battery in a laptop is rechargeable and allows the computer system to run without being directly connected to an outlet.



## RAM (Random Access Memory)

The RAM in the computer system acts as short-term/temporary storage. Because of this, memory held on the RAM is easily accessible and the computer system can complete tasks using the data instantly.



## Hard Disk Drive

Its importance lies in it being non-volatile, which is how a computer stores operating systems and documents permanently.



## Lessons Learnt

Through this experience, I discovered the fundamentals of how a computer system operates including the functions of various components and the part they play in the overall workings of the computer. I learned that it had similar aspects to VEX robotics as the entire system is assembled using smaller parts working together with each of their unique functions. I even found similarities in components such as a VEX brain is like the CPU of the computer. This experience has made me eager to dive into more complex devices.

## REFERENCES

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