REVERSE ENGINEERING CHALLENGE ENTRY

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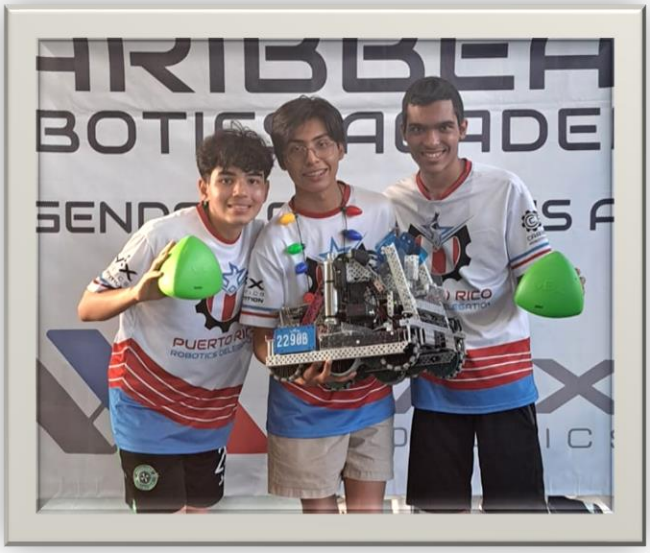
INTRODUCTION

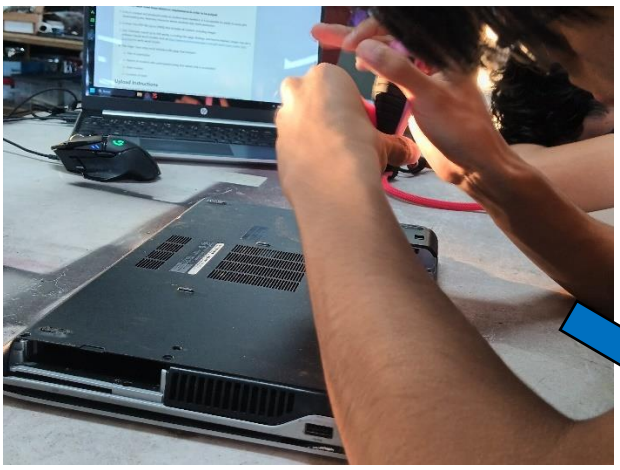
We, the Eagle's Descendants, are a clever, confident, and creative trio who's eager to learn anything. We're always around technology, so when we saw the Reverse Engineering Challenge, we took it as a chance to put our knowledge of the internal components of a computer to practice.



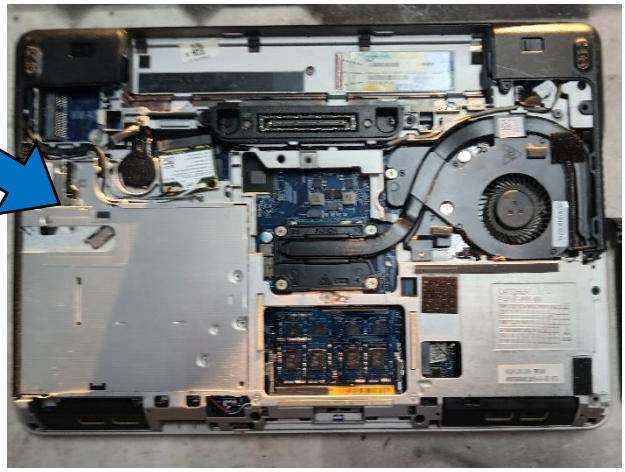
In our workshop, there's an old *Dell Latitude E6440* laptop that was used during the team's VEXIQ days. Our mentor said that the laptop didn't work and gave us the thumbs-up, so we got to work.

DECONSTRUCTION

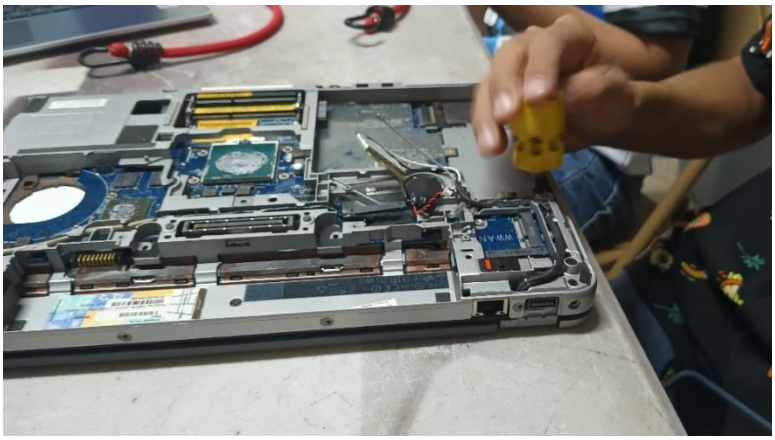
Before deconstructing, we took safety glasses, a screwdriver, some pliers, and a pair of gloves to prepare ourselves to deconstruct the computer. We discussed whether we needed anything else and began dismantling.



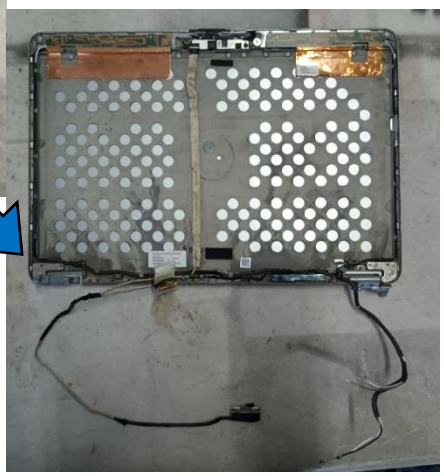
We first removed parts from the outside, then made our way to the laptop's inside.

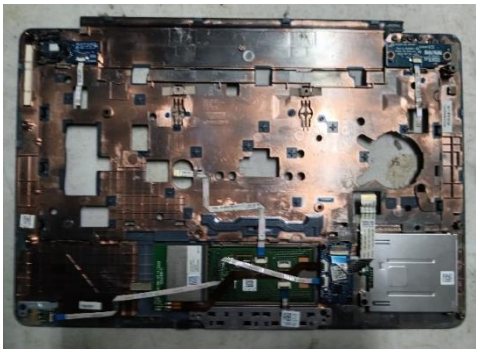


Once we reached the inside, we removed components one by one, then separated its lid and base.




DELL
LATITUDE E6440





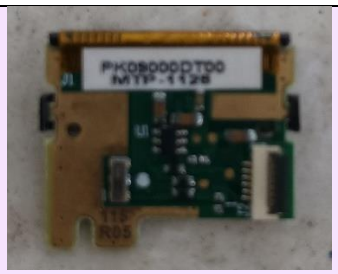
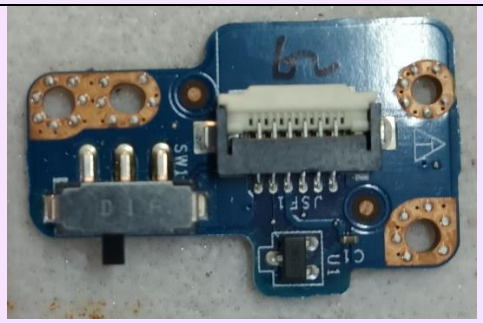
FINDINGS

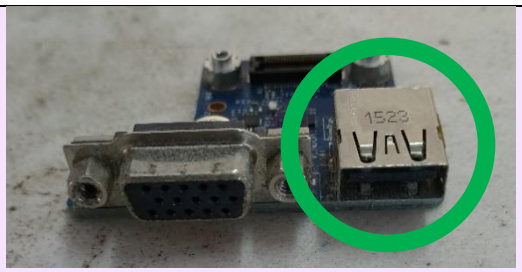
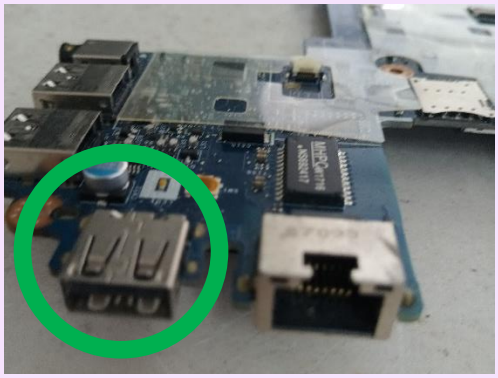
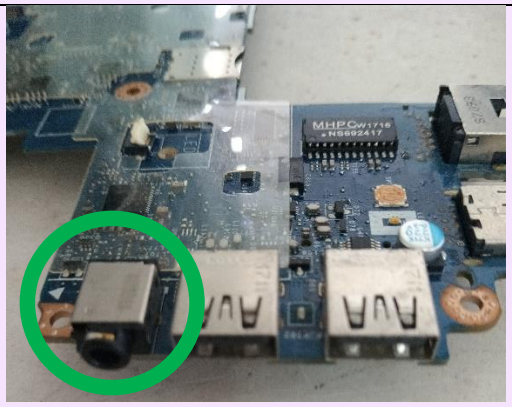
Component	Function	Images
Rechargeable Battery	Provides the computer with power without needing a power adapter.	
Hard Disk Drive	Permanently stores data; has a 500-Gigabyte memory.	 

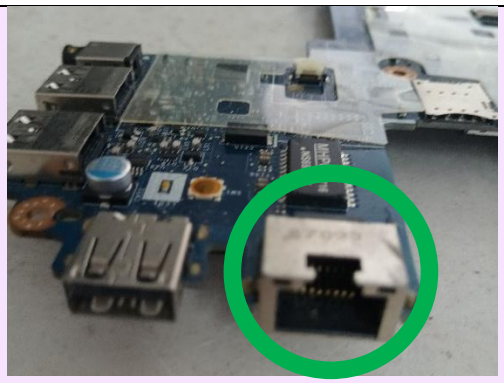
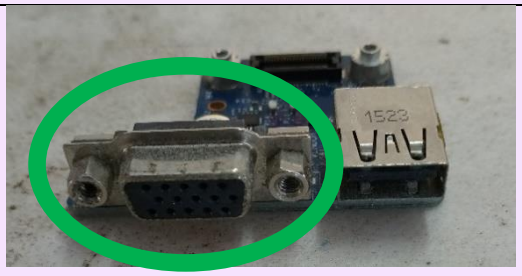
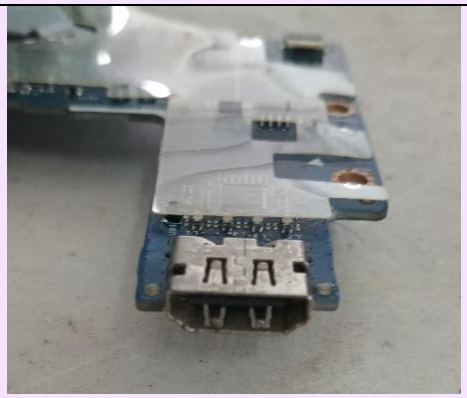
Optical Disk Drive	Allows the use of CDs, DVDs, or Blu-Ray discs to watch a movie or listen to music.	
Cooling Fan	Prevents the computer from overheating.	 
Wi-Fi Module	Allows the computer to connect to Wi-Fi networks.	

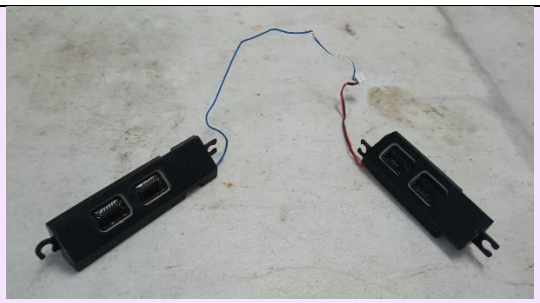
Keyboard	Used to input text, numbers, and symbols.	 
CMOS Battery	Powers up the software that allows the computer to turn on.	
Power Jack	Allows the charger to connect to and charge the laptop.	

Motherboard	Links together the necessary components for the computer to process received information.	 
Random-Access Memories (Two memories, 4GB each)	Process and store data when the computer is turned on.	
Central Processing Unit	Receives and executes the user's instructions for the other components to follow.	

Fingerprint Reader Module	Scans the user's fingerprint for security purposes.	
Smart Card Reader	Reads the data from Smart Cards.	
Keyboard Control Board	Informs the computer when a keyboard's key is pressed.	
Wi-Fi Sniffer Board	Captures and analyzes a Wi-Fi network's data, like its name, signal strength, etcetera.	

USB Ports	Allow the connection of USBs.	  
Headphone Jack	Allows the use of headphones.	

Network Connector	Allows the entry of network devices, such as routers.	
VGA Port	Allows the connection between the computer and video output devices.	
HDMI Port	Allows the entrance of HDMI cables.	
Express Card Slot (Cage and Circuit Board)	Read Express Cards to improve the computer's data transferring speed.	 

Speakers	Convert electrical audio signals to sounds.	
LED Indicator Board	Illuminates to show the status of certain functions.	
Magnet	Helps keep the laptop's lid closed.	

CONCLUSION

In the end, after plenty of deconstructing, what did we learn? Well, we learned not only how to deconstruct a laptop, but also that computers are much more complex than we initially thought. Our teamwork and cohesion also improved significantly.

I'm confident that what we learned in Computer class and from each other paid off.