

# Texas Instruments Online Challenge

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## **Introduction:**

Our team decided to choose the HP G60-630US, an HP laptop from 2010 for the TI Award submission. The laptop served as a good choice as it showed a daily application of useful technologies in our lives, as well as being able to show the technological development over the past 8 years. The knowledge about the components of this laptop applies to modern society, since many people use laptops daily, and many established industries are integrating computers and laptops into the workplace, which was important for us to show the practical applications of our research.

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## Getting Started:

We first researched the laptop to make sure we knew what components to look for during our disassembly.

**Figure 1.1: Laptop Specs on the manufacturing label to use for research.**



We started the disassembly by laying out our supplies and taking basic observations:

**Figure 1.2 and 1.3: The complete laptop before disassembly.**



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### Observations/ Data

Height	Width	Depth	Weight
1.7 in	14.9 in	9.9 in	6.61 lbs

### Disassembly Process:

After our observations were made, we carefully started the disassembly process:

**Figure 1.4: The first screws being removed from the plastic backing.**

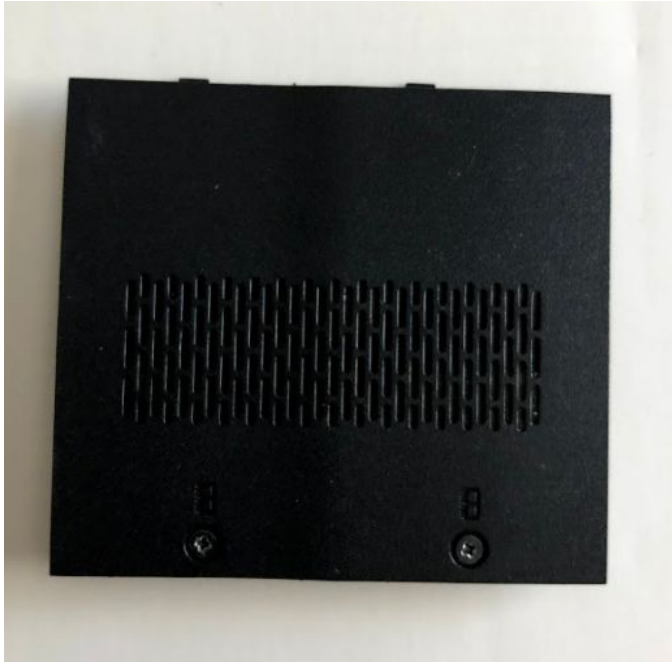


**Figure 1.5: Plastic casing removed to show RAM sticks.**



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**Figure 1.6: The plastic piece removed from the backing.**



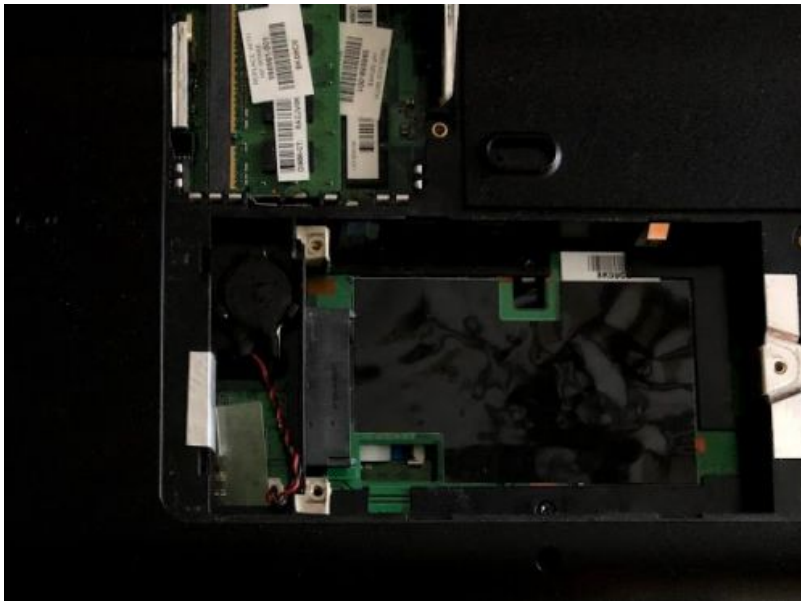
**Figure 1.7: The second casing piece removed from the backing.**

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**Figure 1.8: The second casing's open cavity, exposing internal components.**



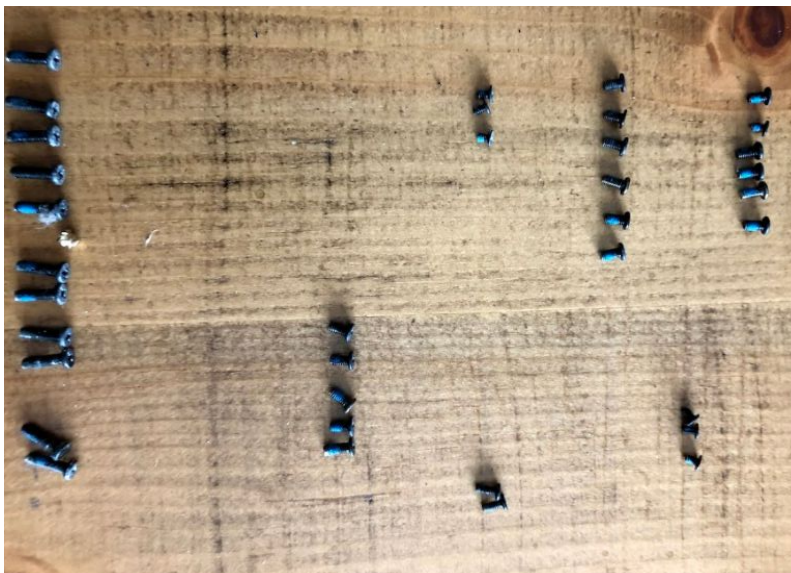
**Figure 1.9: Opening up the last cavity on the laptop casing.**



**Figure 1.10: Hard drive removed, with screws holding it in place.**



**Figure 1.10: All external screws removed by the plastic backing.**



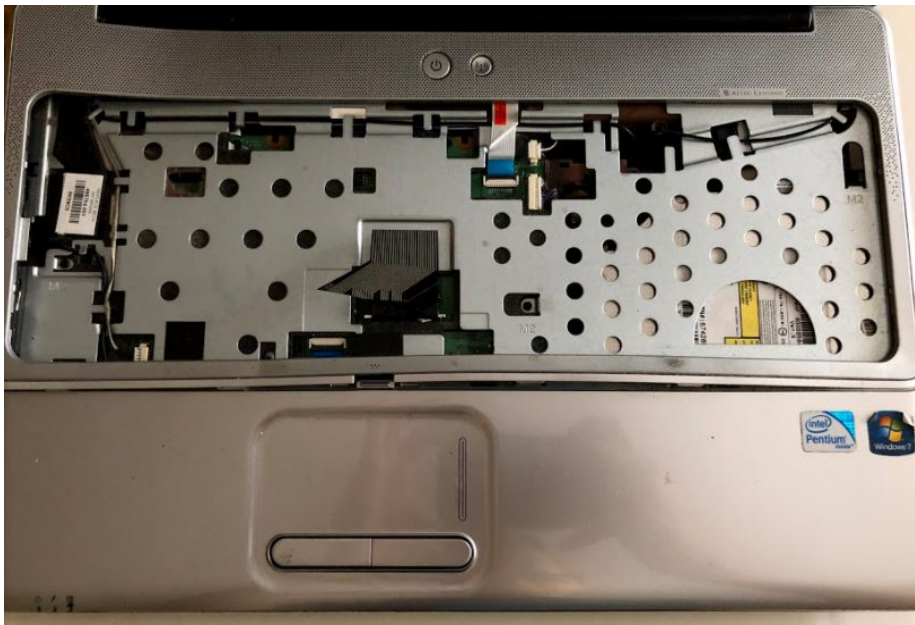
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After we had finished taking apart the outside of the laptop, we soon began the process of opening it up, and gathering interior components to research.

**Figure 1.11: The removed keyboard.**



**Figure 1.12: The leftover keyboard cavity.**



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**Figure 1.13: Removing the top plastic plate, including power buttons.**



**Figure 1.14: Interior laptop view without the top plates present.**





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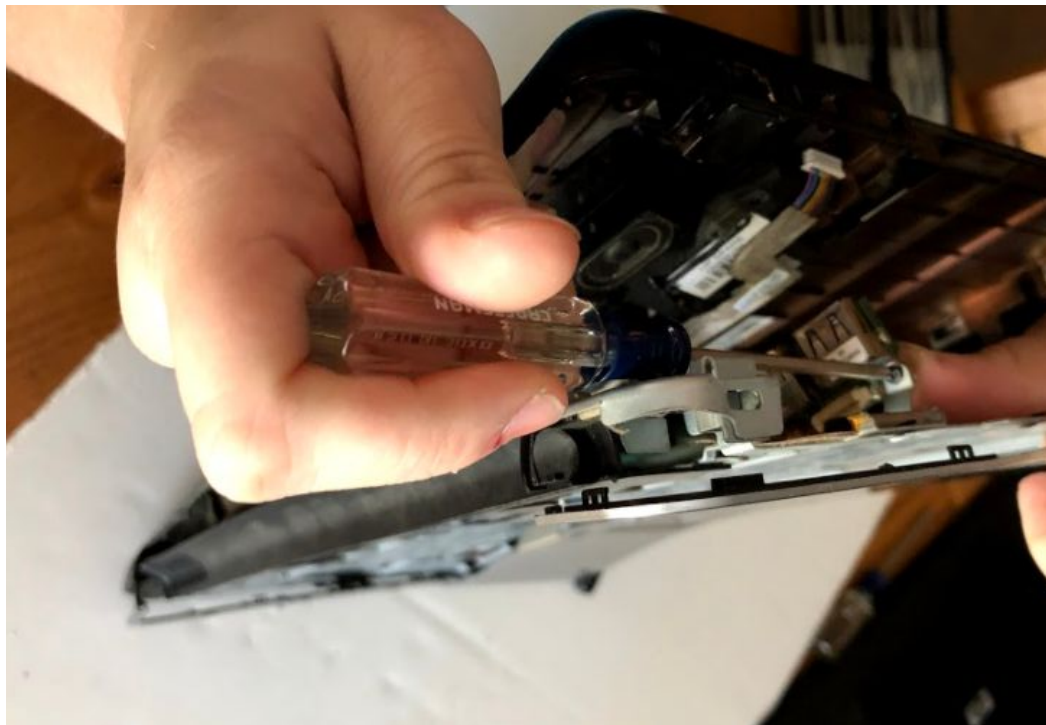
Once we had finished taking off the interior external plates, we moved into the inside of the computer.

**Figure 1.15: Pulling apart the bottom and top plates to expose the internal workings of the computer.**



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**Figure 1.16: Unscrewing multiple plates to separate the parts of the computer.**



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Finally, we had separated the plates, and were ready to start labeling the components.

**Found Components:**

	Model / Type	Additional Specs
Motherboard	HP PAVILION G60-600	Main Port Center
CPU	Intel Pentium T4400	Dual Core
Battery	Lithium Ion	6-cell
Hard Drive	HDD	5400 rpm
RAM	DDR2 SDRAM	3G
Graphics Card	Intel HD Graphics	Visual/Audio Integration

The components we found and chose to highlight were the ones that best represented the functionality of the computer.

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**Figure 1.17: The motherboard**



The motherboard holds together the most important parts of a computer, serving as a connecting station for all the ports.

**Figure 1.18: The CPU**



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The CPU, or Central Processing Unit, is the brain of the computer. It processes all the information for the computer, and uses it to make decisions for the user.

**Figure 1.19: The battery**



The battery powers the computer, and serves as a chargeable power bank.

**Figure 1.20: The hard drive**



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The hard drive is one of the most important parts of the computer, serving as part of the memory. The more memory on the hard drive, the more can be stored on the computer.

### Figure 1.21: RAM



RAM, or Random Access Memory serves as the memory for parts of the computer that need to be reached by the CPU quickly, such as the operating system for the computer. The computer we chose has 3G of RAM.

### Graphics Card

The graphics card is the part of a computer that controls and provides pictures (graphics) to the display on the computer screen, and was found in connection to the motherboard.

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## What did we learn?

Although our laptop did not contain any TI components, it still offered a large learning opportunity for the team. Our team learned about the different components of the computer, as well as how they worked together in unison in order to accomplish a task for the user. This was particularly interesting for us, as it not only showed a clear indicator of how technology works together in an industry, but also as individual units, much like the team itself. We will use this knowledge to continue to spread STEM through our club.

**Figure 1.22: The final shots, entirely disassembled.**

