

2952E – Reverse Engineering

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Kitchen Scale

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Hello, we are team **Robo Squad** and our team number is **2952E**. Our team of three wanted to participate in this Reverse Engineering Challenge. The device we decided to pick to reverse engineer was a Kitchen Scale. Why a kitchen scale you may ask. Well you see, a kitchen scale is very interesting. Haven't you ever wondered what material any scale is made out of to hold so much weight? What is inside a scale to make it work? Well, today I am going to disassemble a kitchen scale and answer all those questions. While I do it, I will record every step I take on this document. The first step is to inspect the kitchen scale so we know where to disassemble it. After I finished inspecting, I found three (3) things,

(1) A battery area on the back of the kitchen scale,



(2) A piece that displays how much weight is on the scale on the front of it



(3) I found out that you have to start disassembling the kitchen scale by first taking off the plate, the part you put an object on.

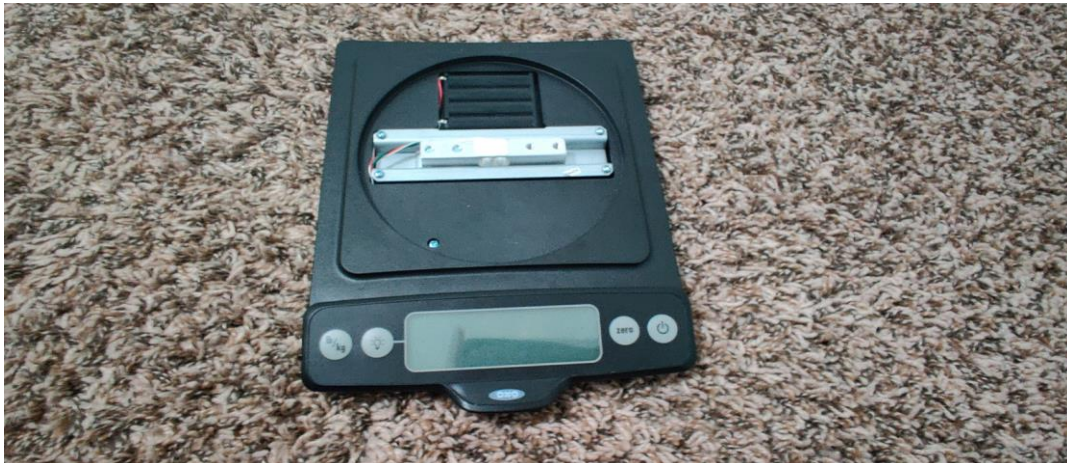


I also figured out that the weight plate is made out of material called sturdy steel. Next, I am going to start disassembling the kitchen scale. The first step in disassembling the kitchen scale is to take off the plate. I figured that out by inspecting the kitchen scale.



After I took off the plate, I saw a metal ring which was a piece to help the weight plate do its job, determine how much weight something is.

Next, I unscrewed the metal ring with a screwdriver





Then, I saw a piece to hold wires in place and help the kitchen scale to find the exact weight of an object. It was a metal piece with a shape of a rectangular prism surrounded by a small metal platter. After I took off the piece that held the wires and helped to find exact weight with a screwdriver





It was just the plastic part of the kitchen scale so I figured that was the last piece. Now that we found out all the pieces and its uses, I am going to explain how the kitchen scale works. The kitchen scale finds exact weight by measuring how much force exists between the object you're weighing and planet Earth. To power the kitchen scale, the power source comes from the batteries.

The wires are connected to the batteries which go through the piece which holds wires then connects to the piece that displays how much weight is on the scale.

The battery placing area is on the back of the scale. I found this out by inspecting the scale.



But when you remove all the pieces you can see the wires connected to it in the front.

In conclusion, now we know what is inside a kitchen scale and how it works. There are the three pieces, the scale part, the plate, the metal ring that helps the scale part do its job, see how much weight something is, and finally a piece that keeps the wire in place and helps determine exact weight.