Volatile Organic Compound Monitor

User Stories

Sentient

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# Introduction

The user stories are intended to provide developers with the perspective of the end user using the system the development team is creating. Each story encompasses a particular use of the system including the end user and intermediate users. User stories will give rise to functional and non-functional requirements.

**Sir Curious George Sets up a VOC**

Sir Curious George the Second is quite bothered by the ruffians that set up a cleaning agent plant not six blocks from his very own abode. He has decided to take matters into his own hands, show those brutes what’s what, and install a Volatile Organic Compound (VOC) monitoring unit in his neighborhood. After a length deliberation with the mayor, a dull fellow yet susceptible to bribery, Sir Curious George secures a permit to put up a VOC monitor. After contact an electrician, the VOC is raised and secured roughly 20 ft. up a nearby power line pole. The VOC monitor is booted up and begins recording the data necessary to haul away the ruffians.

**Curious George Retrieves VOC Data**

Curious George is sitting in a car preparing to start his day. He realizes it has been a week since he last updated the VOC monitoring website. Knowing this he wonders how to get week’s data. He knows he has to be close to the VOC monitor to retrieve the air quality data. He looks on the VOC monitoring website to get the location of the VOC and drives to the power line the VOC is attached to. Once safely parked he pulls out a thumb drive that is configured for the VOC monitor and plugs it into a lap top. Upon inserting the drive a window’s message pops up on the screen. The message has two options: ‘Download New Data? Download Previous Data? Last week’s data made it to the database so Curious George chooses to download the most recent data. The computer starts receiving data from the VOC monitor. After a little while another Windows message pops on the screen that reads ‘Download Complete’. With the job done Curious George heads to the local bakery.

**Curious George Visits the Internet**

George knew that his city had purchased VOC monitors and placed them around the town. One night George got curious about how his town was affected by the various nearby manufacturing plants and decided to look at the information himself. George contacted his city council to obtain the correct URL for the website that the VOC levels were displayed.

George visited the website and was floored by the beautiful, sleek design of the page. The front page had a picture of the VOC monitor and an explanation of how the system works. At the top of the page there were a few tabs that read ‘Graphs, Raw Data, and Nodes’. The ‘Graphs’ tab had a series of time-line graphs for each Volatile compound the monitors’ sensors. The ‘Raw Data’ had downloadable documents containing unprocessed VOC levels retrieved directly from the monitors. The nodes had a map locating all the VOC’s around the town.

George was moved by the powerful mission statement that was displayed at the bottom of each page. George knew the website was updated every time VOC levels were retrieved from the monitors. George was sure he would visit the site again soon.

**Curious George Learns to troubleshoot!**

George was in the process of collecting files from the VOC monitors. While en route, he found a system that was not able to connect to his computer. Concerned, he removed the system from its post, acquired a working VOC monitor, and began troubleshooting. He began by checking the power source; the LED was glowing, so that wasn’t the problem. He next checked the yellow power wires to ensure they were connected properly, which they were. Next, he checked the XBEE by attaching it to the working VOC. The wireless XBEE module was also in working order. Finally, he took the SD card from the VOC monitor and plugged it into his laptop, finding that all the files were overwritten with junk. He checked the manual and found the only way that could have happened was by the program being corrupted, so George plugged the VOC into his laptop, uploaded the program onto the system, and put it back together. At last, it was in working order again!

**Alert System**

Sally could not sleep one night, so she left the warmth of her iComfort memory foam mattress and Harry Potter comforter to watch the tele. A documentary was airing about the effects of oil refineries on nearby populous. Some of the effects were quite discomforting, especially because her grandkids had an oil refinery neighboring their town. In doing some research about that specific refinery, Sally found a website that monitored and tracked the output of specific harmful chemicals known to be emitted by oil refineries. She also noticed that the tracking was real time and that she could sign up to be on an emailing list or text list that would notify her if a chemical rose above safe levels. Sally immediately signed up for the entire list of monitors placed in zip codes near to her grandkids. She chose to be notified by text, and within moments she received a text with the specific monitor, the specific chemical, and some protection and symptom information. She looked at the map of monitors the website kept, and found that the monitor was right next to the oil refinery. She then looked at where her grandkids were and found that the monitor near their house showed safe levels of the chemicals.

**Troubleshooting**

Big “DT” Reynolds—the town Sheriff—just took over his post from his long time mentor who just retired. During the changeover, Sheriff Reynolds told him about the VOCMS the town purchased to keep the nearby Oil Refinery honest. Sheriff Reynolds visited the VOCMS website and noticed a messaged was displayed saying the VOCMS lost power. Sheriff Reynolds asked the old sheriff how long it had been like this, and he said he received an automated text just last week, but had been too busy. The old sheriff said he couldn’t remember just how to replace the battery—they last a good few years—so Sheriff Reynolds needed to check the troubleshooting section of software on the laptop used to pull the VOCMS data. In the troubleshooting section, Sheriff Reynolds was able to see detailed diagrams—which is good because he isn’t good with hardware—and step by step instructions of how to replace the battery.