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CPSC 3220
PR1 – Due: 9/16/20

1. Find two image file formats and 4 source code formats within “linux_meta.zip” and “thundercracker_meta.zip”

   -Using the linux command “grep “jpeg” < linux.du” I was able to find the presence of the .jpeg image format within “linux_meta.zip”. The results of the command showed
   76 ./drivers/media/platform/mtk-jpeg
   168 ./drivers/media/platform/s5p-jpeg

   -Using the linux command “grep “gif” < linux.ls” I was able to find the presence of the .gif image format within “linux_meta.zip”. The results of the command showed
   - rw- rw- r-- 1 brygg brygg 16335 Sep 1 01:24 logo.gif

   After using the command line argument “grep “main” < linux.find” I was able to find all 4 different source code formats with one search. My results showed me
   ./tools/bpf/bpftool/main.c
   ./tools/bpf/bpftool/main.h
   ./Documentation/devicetree/bindings/power/domain-idle-state.yaml
   ./Documentation/devicetree/bindings/power/rockchip/power_domain.txt
   These four results show the presence of the source code formats .c, .h, .yaml, and .txt within the zip file “linux_meta”

When searching for cumulative file types during my image format search, my answer had me stumble upon the directory “./drivers/media/platform” which contained close to 40 different files. I am assuming that each of the files in this directory are different formats of media that the linux system is able to understand. This directory includes formats such as jpeg, omap, and rockchip which I recognize, whereas majority of this directory is unknown to me. Upon further inspection, each “platform” found in this directory has at least two corresponding source code files located in “linux.find” with the same directory format of “./drivers/media/platform”. As for the source code formats, the “./tools/ directory contained close to 15 different tools that seemed to be for testing purposes or simply useful operating tools. The source code files found in “./Documentation” were part of a larger group of cumulative source files that seem to be used as bindings and process handling documentation.

1. How many forms of documentation are there in this directory?
   “grep “./Documentation” < linux.find” shows that there are hundreds of documentation files pertaining to each system aspect. There are specific folders for gpu as well as each userspace.
2. What are the tools in this directory used for?
   “grep ./tools” < linux.find” gives a result of hundreds of files as well, most having a further extension of either “testing” or “include”. This result allows me to assume that the tools are primarily used for testing operating purposes or providing other files with necessary header files.

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Extra Credit: In theory, one of the only ways I know/could find to access the creation date of files is to use the command "stat -c '%w' filename". This method did not work on my virtual machine. I am assuming this is because my filesystem did not provide that information and because the linux kernel does not provide a way to access this. I am very interested in how to find this information, however.

Doing the same process in the "thundercracker_meta" zip file allowed me to use the command

"grep "png" < thundercracker.find" and find hundreds of image files formatted as .png

"grep "jpg" < thundercracker.find" also found a few image files formatted as .jpg

Using the command "grep "main" < thundercracker.find" yield results for 4 source code types.

./docs/doxygen/src/mainpage.md

./swiss/src/main.cpp

./firmware/cube/rftest/main.c

./deps/src/gtest-1.6.0/msvc/gtest_main.vcproj

Shows source code types .md, .cpp, .c, and .vcproj.

2. Choice: temperature, air quality, etc. sensors in shirt worn by an in-field employee

Strengths: The potential for an in-field federal employee to have the temperature, air quality, and other major surrounding variables constantly monitored would prove to be a huge positive for safety in the work environment as well as personal body safety. Assuming that this employee works in a possibly dangerous environment, having some sort of monitoring aspect that could alert them to changes in the surroundings may prove to save lives or at least prevent small disasters. Alongside this, these sensors could be worn as a form of data collection that can prove useful to anyone collecting the statistics.

Weaknesses: A sensor or monitor of this kind may turn out to be bulky and unbearable in the field. An employee may always find it impeding or obnoxious to wear in-shirt. Along with this, the variables from the human body may interfere and throw off some readings.

Opportunities: These sensors could provide information on workplace environments for these federal employees and give eye-opening details as to the temperatures and air quality that these people are working in. If necessary, it could help map out specific areas that need attention or potentially promising areas that pique the interest of anyone viewing the data.

Threats: As stated before, the human body may interact with the sensors in a way that would throw the readings off. Body heat as well as bodily fluids such as sweat could give false readings unless programmed to accommodate this. Another simple, yet possible threat is the fact that some bearers of the device may position it improperly or not gain the necessary training and information on what the device does and proceed to use it improperly. If the device is wireless there is always a risk of the information being gathered from the sensor to be hijacked by anyone with the knowledge to do so.