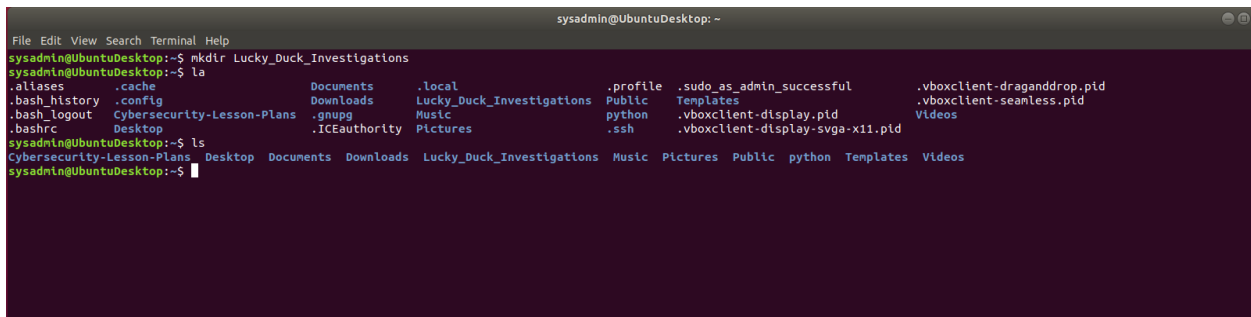


# A High Stakes Investigation

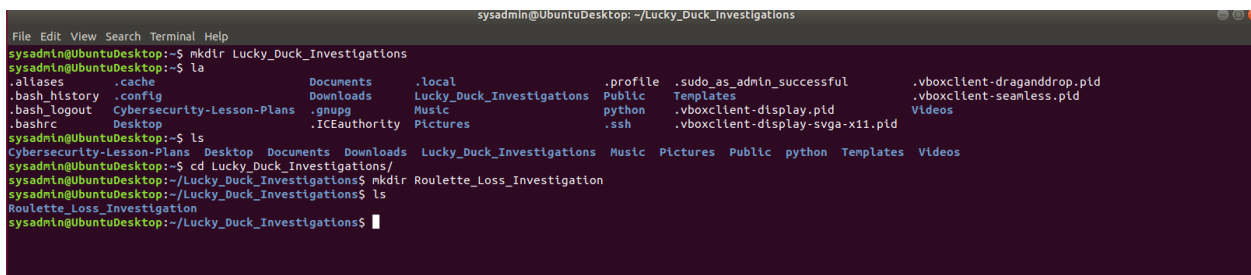
## Step 1: Investigation Preparation

1. We start by accessing our terminal on a Linux box. We enter the following command “mkdir Lucky\_Duck\_Investigations”. This will make a new directory titled Lucky\_Duck\_Investigation.



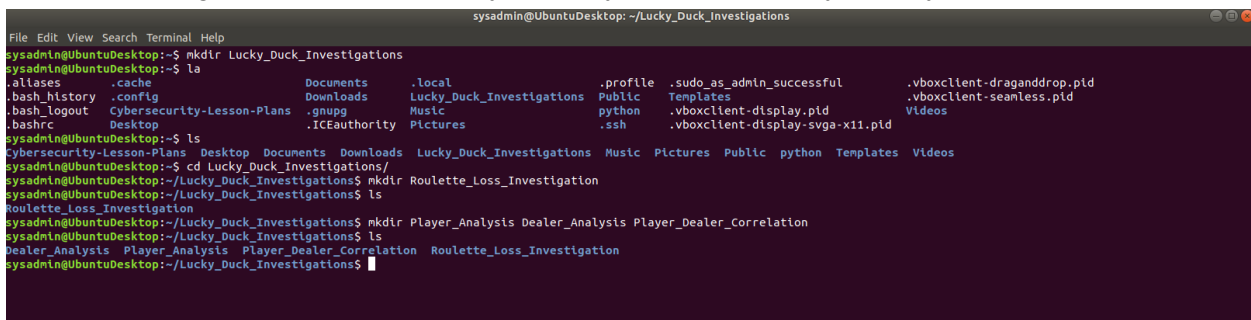
```
sysadmin@UbuntuDesktop: ~  
File Edit View Search Terminal Help  
sysadmin@UbuntuDesktop:~$ mkdir Lucky_Duck_Investigations  
sysadmin@UbuntuDesktop:~$ la  
.aliases      .cache      Documents   .local      .profile    .sudo_as_admin_successful  .vboxclient-draganddrop.pid  
.bash_history  .config     Downloads   Lucky_Duck_Investigations  Public      Templates   .vboxclient-seamless.pid  
.bash_logout  Cybersecurity-Lesson-Plans .gnupg      Music       python      .vboxclient-display.pid    Videos  
.bashrc       Desktop     .ICEauthority Pictures     .ssh        .vboxclient-display-svga-x11.pid  
Cybersecurity-Lesson-Plans Desktop Documents Downloads Lucky_Duck_Investigations Music Pictures Public python Templates Videos  
sysadmin@UbuntuDesktop:~$
```

2. Within the Lucky\_Duck\_Investigations we create an additional directory labeled Roulette\_Loss\_Investigation. We enter the following command “mkdir Roulette\_Loss\_Investigation”.



```
sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations  
File Edit View Search Terminal Help  
sysadmin@UbuntuDesktop:~$ mkdir Lucky_Duck_Investigations  
sysadmin@UbuntuDesktop:~$ la  
.aliases      .cache      Documents   .local      .profile    .sudo_as_admin_successful  .vboxclient-draganddrop.pid  
.bash_history  .config     Downloads   Lucky_Duck_Investigations  Public      Templates   .vboxclient-seamless.pid  
.bash_logout  Cybersecurity-Lesson-Plans .gnupg      Music       python      .vboxclient-display.pid    Videos  
.bashrc       Desktop     .ICEauthority Pictures     .ssh        .vboxclient-display-svga-x11.pid  
Cybersecurity-Lesson-Plans Desktop Documents Downloads Lucky_Duck_Investigations Music Pictures Public python Templates Videos  
sysadmin@UbuntuDesktop:~$ cd Lucky_Duck_Investigations/  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mkdir Roulette_Loss_Investigation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ ls  
Roulette_Loss_Investigation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$
```

3. Within the Roulette\_Loss\_Investigations we create 3 additional directories using the following command “mkdir Player\_Analysis Dealer\_Analysis Player\_Dealer\_Correlation”.



```
sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations  
File Edit View Search Terminal Help  
sysadmin@UbuntuDesktop:~$ mkdir Lucky_Duck_Investigations  
sysadmin@UbuntuDesktop:~$ la  
.aliases      .cache      Documents   .local      .profile    .sudo_as_admin_successful  .vboxclient-draganddrop.pid  
.bash_history  .config     Downloads   Lucky_Duck_Investigations  Public      Templates   .vboxclient-seamless.pid  
.bash_logout  Cybersecurity-Lesson-Plans .gnupg      Music       python      .vboxclient-display.pid    Videos  
.bashrc       Desktop     .ICEauthority Pictures     .ssh        .vboxclient-display-svga-x11.pid  
Cybersecurity-Lesson-Plans Desktop Documents Downloads Lucky_Duck_Investigations Music Pictures Public python Templates Videos  
sysadmin@UbuntuDesktop:~$ cd Lucky_Duck_Investigations/  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mkdir Roulette_Loss_Investigation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ ls  
Roulette_Loss_Investigation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mkdir Player_Analysis Dealer_Analysis Player_Dealer_Correlation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ ls  
Dealer_Analysis Player_Analysis Player_Dealer_Correlation Roulette_Loss_Investigation  
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$
```

4. In this step we utilize the “touch” command to create Notes\_Player\_Analysis, Notes\_Dealer\_Analysis and Notes\_Player\_Dealer\_Correlation files.

```

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis
File Edit View Search Terminal Help
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Player_Dealer_Correlation$ cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ ls
dealer_Analysis  Player_Analysis  Player_Dealer_Correlation  Roulette_Loss_Investigation
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Analysis/ Player_Analysis/ Player_Dealer_Correlation/ > Roulette_Loss_Investigation/
bash: Roulette_Loss_Investigation/: Is a directory
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Analysis/ Player_Analysis/ Player_Dealer_Correlation/ >> Roulette_Loss_Investigation/
bash: Roulette_Loss_Investigation/: Is a directory
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Analysis/ Player_Analysis/ Player_Dealer_Correlation/ Roulette_Loss_Investigation/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ ls
Roulette_Loss_Investigation
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ cd Roulette_Loss_Investigation/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ ls
dealer_Analysis  Player_Analysis  Player_Dealer_Correlation
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ ls -l
total 12
drwxr-xr-x 2 sysadmin sysadmin 4096 Mar 23 19:08 Dealer_Analysis
drwxr-xr-x 2 sysadmin sysadmin 4096 Mar 23 19:10 Player_Analysis
drwxr-xr-x 2 sysadmin sysadmin 4096 Mar 23 19:11 Player_Dealer_Correlation
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ cd Dealer_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ls
notes_Dealer_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ cd ..
cd:.. command not found
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ cd Player_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ ls
notes_Player_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ cd Player_Dealer_Correlation/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$ ls
notes_Player_Dealer_Correlation
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$ cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ cd Dealer_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ls
notes_Dealer_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ █

```

## Step 2: Gathering Evidence

1. Within the directory titled Lucky\_Duck\_Investigations we enter the wget to get the data, directories needed for the investigation.

```

sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ wget "https://tinyurl.com/3-HW-setup-evidence" && chmod +x ./3-HW-setup-evidence && ./3-HW-setup-evidence
--2021-03-23 19:18:45-- https://tinyurl.com/3-HW-setup-evidence
Resolving tinyurl.com (tinyurl.com)... 172.67.1.225, 104.20.139.65, 104.20.138.65, ...
Connecting to tinyurl.com (tinyurl.com)[172.67.1.225]:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://gist.githubusercontent.com/eddlmus/e57fcb9510dd18225142cb23f236da24/raw/39f7f71b22ae7997e92d82e57aedd02bbb0dd481/Setup_Evidence_Files.sh [following]
--2021-03-23 19:18:47-- https://gist.githubusercontent.com/eddlmus/e57fcb9510dd18225142cb23f236da24/raw/39f7f71b22ae7997e92d82e57aedd02bbb0dd481/Setup_Evidence_Files.sh
Resolving gist.githubusercontent.com (gist.githubusercontent.com)... 185.199.110.133, 185.199.111.133, 185.199.108.133, ...
Connecting to gist.githubusercontent.com (gist.githubusercontent.com)[185.199.110.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 32625 (32K) [text/plain]
Saving to: '3-HW-setup-evidence'

3-HW-setup-evidence      100%[=====] 31.86K  ---KB/s   in 0.01s

2021-03-23 19:18:47 (3.26 MB/s) - '3-HW-setup-evidence' saved [32625/32625]
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ █

```

2. In this step we utilize the “mv 0310\_Dealer\_schedule 0312\_Dealer\_schedule 0315\_Dealer\_schedule ../Dealer\_Analysis” command to move the schedules. We then use “mv 0310\_win\_loss\_player\_data 0312\_win\_loss\_player\_data 0315\_win\_loss\_player\_data ../Player\_Analysis” to move the win loss data into the Player\_Analysis directory.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ls
0310_Dealer_schedule  0315_Dealer_schedule      Notes_Dealer_Analysis
0312_Dealer_schedule  Dealers_working_during_losses  roulette_dealer_finder_by_time.sh
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$

```

## Step 3: Correlating the Evidence (Player Analysis)

1. We navigate to the Player\_Analysis directory from our home directory using “cd Documents/Lucky\_Duck\_Investigations/Roulette\_Loss\_Investigation/Player\_Analysis”

```

sysadmin@UbuntuDesktop:~$ cd Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis/
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ ls
0310_win_loss_player_data  0312_win_loss_player_data  0315_win_loss_player_data  Notes_Player_Analysis  Roulette_Losses.txt

```

2. Using grep we can isolate all the losses from the files provided. We input the following command for each day “grep - 0310\_win\_loss\_player\_data” to output the information.

```

sysadmin@UbuntuDesktop:~$ cd Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis/
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ ls
0310_win_loss_player_data  0312_win_loss_player_data  0315_win_loss_player_data  Notes_Player_Analysis  Roulette_Losses.txt
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep - 0310_win_loss_player_data
05:00:00 AM      -$82,348      Amirah Schneider,Nola Portillo, Mylie Schmidt,Suhayb Maguire,Millicent Betts,Avi Graves
08:00:00 AM      -$97,383      Chanelle Tapia, Shelley Dodson , Valentino Smith, Mylie Schmidt
02:00:00 PM      -$82,348      Jaden Clarkson, Kaidan Sheridan, Mylie Schmidt
08:00:00 PM      -$65,348      Mylie Schmidt, Trixie Velasquez, Jerome Klein ,Rahma Buckley
11:00:00 PM      -$88,383      Mcfadden Wasim, Norman Cooper, Mylie Schmidt
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep - 0312_win_loss_player_data
05:00:00 AM      -$182,300     Montana Kirk, Alysia Goodman, Halina Little, Etienne Brady, Mylie Schmidt
08:00:00 AM      -$97,383      Rimsha Gardiner,Fern Cleveland, Mylie Schmidt,Kobe Higgins
02:00:00 PM      -$82,348      Mae Hail, Mylie Schmidt,Ayden Beil
08:00:00 PM      -$65,792      Tallulah Rawlings,Josie Dawe, Mylie Schmidt,Hakim Stott, Esther Callaghan, Claron Villanueva
11:00:00 PM      -$88,229      Vlad Hatfield,Kerys Frazier,Mya Butler, Mylie Schmidt,Lex Oakley,Elin Wornald
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep - 0315_win_loss_player_data
05:00:00 AM      -$82,844      Arjan Guzman,Sommer Mann, Mylie Schmidt
08:00:00 AM      -$97,001      Lilianna Devlin,Brendan Lester, Mylie Schmidt,Blade Robertson,Derrick Schroeder
02:00:00 PM      -$182,419     Mylie Schmidt, Corey Huffman
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$

```

- 3.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ more Roulette_Losses.txt
05:00:00 AM      -$82,348      Amirah Schneider,Nola Portillo, Mylie Schmidt,Suhayb Maguire,Millicent Betts,Avi Graves
08:00:00 AM      -$97,383      Chanelle Tapia, Shelley Dodson , Valentino Smith, Mylie Schmidt
02:00:00 PM      -$82,348      Jaden Clarkson, Kaidan Sheridan, Mylie Schmidt
08:00:00 PM      -$65,348      Mylie Schmidt, Trixie Velasquez, Jerome Klein ,Rahma Buckley
11:00:00 PM      -$88,383      Mcfadden Wasim, Norman Cooper, Mylie Schmidt
05:00:00 AM      -$182,300     Montana Kirk, Alysia Goodman, Halina Little, Etienne Brady, Mylie Schmidt
08:00:00 AM      -$97,383      Rimsha Gardiner,Fern Cleveland, Mylie Schmidt,Kobe Higgins
02:00:00 PM      -$82,348      Mae Hail, Mylie Schmidt,Ayden Beil
08:00:00 PM      -$65,792      Tallulah Rawlings,Josie Dawe, Mylie Schmidt,Hakim Stott, Esther Callaghan, Claron Villanueva
11:00:00 PM      -$88,229      Vlad Hatfield,Kerys Frazier,Mya Butler, Mylie Schmidt,Lex Oakley,Elin Wornald
05:00:00 AM      -$82,844      Arjan Guzman,Sommer Mann, Mylie Schmidt
08:00:00 AM      -$97,001      Lilianna Devlin,Brendan Lester, Mylie Schmidt,Blade Robertson,Derrick Schroeder
02:00:00 PM      -$182,419     Mylie Schmidt, Corey Huffman
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$

```

4. We can preview the file Roulette\_Losses by entering “more Roulette\_Losses.txt” in the command line. Here we can “grep -i “mylie schmidt” Roulette\_Losses.txt” to uncover that Mylie Schmidt was one of the players there during every loss. We can go further and pipe “wc -l” to see how many times the player was playing.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep -i mylie_schmidt Roulette_Losses.txt
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep -i "mylie schmidt" Roulette_Losses.txt
05:00:00 AM -$82,348 Amirah Schneider,Nola Portillo, Mylie Schmidt,Suhayb Maguire,Millicent Betts,Avi Graves
08:00:00 AM -$97,383 Chanelle Tapia, Shelley Dodson, Valentino Smith, Mylie Schmidt
02:00:00 PM -$82,348 Jaden Clarkson, Kaldan Sheridan, Mylie Schmidt
08:00:00 PM -$65,348 Mylie Schmidt, Trixie Velasquez, Jerome Klein, Rahma Buckley
11:00:00 PM -$88,383 Mcfadden Masin, Norman Cooper, Mylie Schmidt
05:00:00 AM -$182,380 Montana Kirk, Alysia Goodnan, Halina Little, Etienne Brady, Mylie Schmidt
08:00:00 AM -$97,383 Rinshe Gardner,Fern Cleveland, Mylie Schmidt,Kobe Higgins
02:00:00 PM -$82,348 Mae Hall, Mylie Schmidt,Ayden Bell
08:00:00 PM -$65,792 Tallulah Rawlings,Josie Dawe, Mylie Schmidt,Hakim Stott, Esther Callaghan, Ciaron Villanueva
11:00:00 PM -$88,229 Vlad Hatfield,Kerys Frazier,Mya Butler, Mylie Schmidt,Lex Oakley,Elin Wornald
05:00:00 AM -$82,844 Arjan Guzman,Sommer Mann, Mylie Schmidt
08:00:00 AM -$97,001 Lilianna Devlin,Brendan Lester, Mylie Schmidt,Blade Robertson,Derrick Schroeder
02:00:00 PM -$182,419 Mylie Schmidt, Corey Huffman
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$ grep -i "mylie schmidt" Roulette_Losses.txt | wc -l
13
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Analysis$

```

## Step 3: Correlating the Evidence (Dealer Analysis)

1. Navigate to the Dealer\_Analysis directory.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ls
0310_Dealer_schedule 0312_Dealer_schedule 0315_Dealer_schedule Dealers_working_during_losses Notes Dealer_Analysis roulette_dealer_finder_by_time.sh
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$

```

2. We preview each day by using the “more 0310\_Dealer\_Schedule” command and proceed with each schedule just changing the day.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ more 0310_Dealer_schedule
Hour AM/PM BlackJack_Dealer_FNAME LAST Roulette_Dealer_FNAME LAST Texas_Hold_EM_dealer_FNAME LAST
12:00:00 AM Izabela Parrish Marlene Mcpherson Madina Britton
01:00:00 AM Billy Jones Saina Mcdermott Summer-Louise Hammond
02:00:00 AM Summer-Louise Hammond Abigale Rich John-James Hayward
03:00:00 AM John-James Hayward Evalyn Howell Chyna Mercado
04:00:00 AM Chyna Mercado Cleveland Hanna Katey Bean
05:00:00 AM Katey Bean Billy Jones Evalyn Howell
06:00:00 AM Evalyn Howell Saina Mcdermott Cleveland Hanna
07:00:00 AM Cleveland Hanna Abigale Rich Billy Jones
08:00:00 AM Rahina Figueroa Billy Jones Madina Britton
09:00:00 AM Marlene Mcpherson Cleveland Hanna Summer-Louise Hammond
10:00:00 AM Izabela Parrish Madina Britton John-James Hayward
11:00:00 AM Madina Britton Summer-Louise Hammond Chyna Mercado
12:00:00 PM Summer-Louise Hammond John-James Hayward Katey Bean
01:00:00 PM John-James Hayward Chyna Mercado Evalyn Howell
02:00:00 PM Chyna Mercado Billy Jones Cleveland Hanna
03:00:00 PM Katey Bean Evalyn Howell Rahina Figueroa
04:00:00 PM Evalyn Howell Cleveland Hanna Billy Jones
05:00:00 PM Billy Jones Rahina Figueroa Summer-Louise Hammond
06:00:00 PM Rahina Figueroa John-James Hayward John-James Hayward
07:00:00 PM Marlene Mcpherson Chyna Mercado Chyna Mercado
08:00:00 PM Saina Mcdermott Billy Jones Katey Bean
09:00:00 PM Abigale Rich Evalyn Howell Billy Jones
10:00:00 PM Evalyn Howell Katey Bean Cleveland Hanna
11:00:00 PM Cleveland Hanna Billy Jones Rahina Figueroa
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$

```

3. To view the files on any given with the four fields requested we use the following command for each day: “awk ‘{print \$1, \$2, \$5, \$6}’ 0310\_Dealer\_schedule”.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ awk '{print $1, $2, $5, $6}' 0310_Dealer_schedule
Hour AM/PM Roulette_Dealer_FNAME LAST
12:00:00 AM Marlene Mcpherson
01:00:00 AM Saina Mcdermott
02:00:00 AM Abigale Rich
03:00:00 AM Evalyn Howell
04:00:00 AM Cleveland Hanna
05:00:00 AM Billy Jones
06:00:00 AM Saina Mcdermott
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
09:00:00 AM Cleveland Hanna
10:00:00 AM Madina Britton
11:00:00 AM Summer-Louise Hammond
12:00:00 PM John-James Hayward
01:00:00 PM Chyna Mercado
02:00:00 PM Billy Jones
03:00:00 PM Evalyn Howell
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahina Figueroa
06:00:00 PM John-James Hayward
07:00:00 PM Chyna Mercado
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
10:00:00 PM Katey Bean
11:00:00 PM Billy Jones
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ █

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ awk '{print $1, $2, $5, $6}' 0312_Dealer_schedule
Hour AM/PM Roulette_Dealer_FNAME LAST
12:00:00 AM Marlene Mcpherson
01:00:00 AM Saina Mcdermott
02:00:00 AM Abigale Rich
03:00:00 AM Evalyn Howell
04:00:00 AM Cleveland Hanna
05:00:00 AM Billy Jones
06:00:00 AM Saina Mcdermott
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
09:00:00 AM Cleveland Hanna
10:00:00 AM Madina Britton
11:00:00 AM Summer-Louise Hammond
12:00:00 PM John-James Hayward
01:00:00 PM Chyna Mercado
02:00:00 PM Billy Jones
03:00:00 PM Evalyn Howell
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahina Figueroa
06:00:00 PM John-James Hayward
07:00:00 PM Chyna Mercado
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
10:00:00 PM Katey Bean
11:00:00 PM Billy Jones
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ █

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ awk '{print $1, $2, $5, $6}' 0315_Dealer_schedule
Hour AM/PM Roulette_Dealer_FNAME LAST
12:00:00 AM Marlene Mcpherson
01:00:00 AM Saina Mcdermott
02:00:00 AM Abigale Rich
03:00:00 AM Evalyn Howell
04:00:00 AM Cleveland Hanna
05:00:00 AM Billy Jones
06:00:00 AM Saina Mcdermott
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
09:00:00 AM Cleveland Hanna
10:00:00 AM Madina Britton
11:00:00 AM Summer-Louise Hammond
12:00:00 PM John-James Hayward
01:00:00 PM Chyna Mercado
02:00:00 PM Billy Jones
03:00:00 PM Evalyn Howell
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahina Figueroa
06:00:00 PM John-James Hayward
07:00:00 PM Chyna Mercado
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
10:00:00 PM Katey Bean
11:00:00 PM Billy Jones
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ █

```

4. We append this data into an additional file Dealers\_working\_during\_losses.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ more Dealers_working_during_losses
01:00:00 AM Saina Mcdermott
05:00:00 AM Billy Jones
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahima Figueroa
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
11:00:00 PM Billy Jones
01:00:00 AM Saina Mcdermott
05:00:00 AM Billy Jones
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahima Figueroa
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
11:00:00 PM Billy Jones
01:00:00 AM Saina Mcdermott
05:00:00 AM Billy Jones
07:00:00 AM Abigale Rich
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
04:00:00 PM Cleveland Hanna
05:00:00 PM Rahima Figueroa
08:00:00 PM Billy Jones
09:00:00 PM Evalyn Howell
11:00:00 PM Billy Jones

```

- From this list one name jumps out more frequent then others. So we then grep for that individual by using “grep -i “billy jones””. Then we can pipe with the “wc -l” command to see the number of time the dealer worked when losses were recorded.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ grep -i "billy jones" Dealers_working_during_losses
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones

```

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ grep -i "billy jones" Dealers_working_during_losses | wc -l
15
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$

```

- After conducting research of the data presented from both the player and dealer analysis, I have concluded that there seems to be a correlation between player Mylie Schmidt and dealer Billy Jones. From the player analysis report, I was able to isolate all losses that occurred on the 10th, 12th and 15th of March. Looking at just the losses we can see a common player during each instance, Mylie Schmidt. I then correlated the data with the dealer analysis report to see which dealer was present at the times the losses were recorded. During every loss we see Billy Jones being present at the table. Data shows that the correlation between both player and dealer can potentially be tied to colluding Lucky Duck.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$ more Notes_Player_Dealer_Correlation
After conducting research of the data presented from both the player and dealer analysis, I have concluded that there seems to be a correlation between player Mylie Schmidt and dealer Billy Jones. From the player analysis report, I was able to isolate all losses that occurred on the 10th, 12th and 15th of March. Looking at just the losses we can see a common player during each instance, Mylie Schmidt. I then correlated that data with the dealer analysis report to see which dealer was present at the times the losses were recorded. During every loss we see Billy Jones being present at the table. Data shows that the correlation between both the player and dealer can potentially be tied to colluding Lucky Duck.
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$

```

## Step 4: Scripting Your Tasks

1. To create a shell script to output specific data we start by inputting “nano roulette\_dealer\_finder\_by\_time.sh”. Within nano we can write a command to execute. In this case we are looking for two arguments which are date and time. To do so we input the following command “awk ‘{print \$1, \$2, “\t” \$5, \$6}’ \$1”\_Dealer\_schedule” | grep “\$2 \$3”

```

#!/bin/bash

awk '{print $1, $2 "\t" $5, $6}' $1"_Dealer_schedule" | grep "$2 $3"

```

We can then test the shell script to make sure it outputs the right data.

```

sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ grep -i billy Dealers_working_during_losses
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones
05:00:00 AM Billy Jones
08:00:00 AM Billy Jones
02:00:00 PM Billy Jones
08:00:00 PM Billy Jones
11:00:00 PM Billy Jones
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ls
0310_Dealer_schedule 0312_Dealer_schedule 0315_Dealer_schedule Dealers_working_during_losses Notes Dealer_Analysis roulette_dealer_finder_by_time.sh
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ sh roulette_dealer_finder_by_time.sh 0310 08:00:00 PM
08:00:00 PM Billy Jones
sysadmin@UbuntuDesktop:~/Documents/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$

```