A High Stakes Investigation

Scenario You have just been hired by Lucky Duck Casino as a security analyst. Lucky Duck has lost a significant amount of money on the roulette tables over the last month. The largest losses occurred on March 10, 12, and 15. Your manager believes there is a player working with a Lucky Duck dealer to steal money at the roulette tables. The casino has a large database with data on wins and losses, player analysis, and dealer schedules. You are tasked with navigating, modifying, and analyzing these data files to gather evidence on the rogue player and dealer. You will prepare several evidence files to assist the prosecution. You must work quickly as Lucky Duck can't afford any more losses. Lucky Duck Casino has provided you with the following files if required:

Roulette Player Data: Week of March 10 Employee Dealer Schedule: Week of March

Instructions Use your command-line skills to uncover the identities of the rogue casino player and dealer colluding to scam Lucky Duck out of thousands of dollars.

Investigation Preparation

I created directory by using mkdir command Begin by making a single directory titled Lucky_Duck_Investigations. where i created few more directories to start my investigation.

In this directory, create a directory for this specific investigation titled Roulette_Loss_Investigation. In Roulette_Loss_Investigation, create the following directories: Player_Analysis to investigate the casino player. Dealer_Analysis to investigate the dealers. Player_Dealer_Correlation to summarize your findings of the collusion. Create empty files called Notes_ under each subdirectory to store investigation notes. For example: Notes_Player_Analysis

Gathering Evidence

Your next task is to move evidence from the specific days that Lucky Duck experienced heavy losses at the roulette tables Lucky_Duck_Investigations: Contains the investigation directories and notes files I created. Roulette_Player_WinLoss_0310: Contains the data for player wins and losses. The Dealer_Schedules_0310 and Roulette_Player_WinLoss_0310 directories contain the dealer schedules and win/loss player data from the roulette tables during the week of March 10. Since the losses occurred on March 10, 12, and 15, move the schedules for those days into the directory Dealer_Analysis. Move the files for those days into the directory Player_Analysis.

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sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/De... 😑 📵 🧯
File Edit View Search Terminal Help
310/0315 win_loss_player_data_Roulette_Loss_Investigation/Player_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ cd Roulette_Loss_Investigati
on/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$
cd Player_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$ ls
0310_win_loss_player_data 0315_win_loss_player_data 0312_win_loss_player_data Notes_Player_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$ cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$
cd ..
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Schedules_0310/031
O Dealer schedule Roulette Loss Investigation/Dealer Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Schedules_0310/031
2_Dealer_schedule Roulette_Loss_Investigation/Dealer_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ mv Dealer_Schedules_0310/031
5_Dealer_schedule Roulette_Loss_Investigation/Dealer_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations$ cd Roulette_Loss_Investigati
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$
cd Dealer_Analysis/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/D
ealer_Analysis$ ls
0310_Dealer_schedule 0315_Dealer_schedule
0312_Dealer_schedule Notes_Dealer_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/D
ealer_Analysis$
```

Correlating the Evidence

Your next task is to correlate the large losses from the roulette tables with the dealer schedule. This will help you determine which dealer and player are colluding to steal money from Lucky Duck. Note: Winnings for Lucky Duck Casino are indicated with a positive number and losses are indicated with a negative number. Complete the player analysis. Navigate to the Player_Analysis directory. Use grep to isolate all of the losses that occurred on March 10, 12, and 15. Place those results in a file called Roulette_Losses. Preview the file Roulette_Losses and analyze the data.

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sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Pla... 🛑 🗈 🧟
File Edit View Search Terminal Help
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$ grep -i - *
                     data:05:00:00 AM
                                                         Amirah Schneider, Nola Po
                                         -$82,348
rtillo, Mylie Schmidt,Suhayb Maguire,Millicent Betts,Avi Graves
                        ta:08:00:00 AM
                                         -$97,383
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Dodson , Valentino Smith, Mylie Schmidt
                       ata:02:00:00 PM
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heridan, Mylie Schmidt
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lasquez, Jerome Klein ,Rahma Buckley
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                                         -$182,300
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dman, Halima Little, Etienne Brady, Mylie Schmidt
                     data:08:00:00 AM
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veland, Mylie Schmidt,Kobe Higgins
                                                         Mae Hail, Mylie Schmidt
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              player data:08:00:00 PM
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Dawe, Mylie Schmidt,Hakim Stott, Esther Callaghan, Ciaron Villanueva
                layer data:11:00:00 PM
                                                         Vlad Hatfield, Kerys Fraz
                                         $88,229
ier,Mya Butler, Mylie Schmidt,Lex Oakley,Elin Wormald
                layer_data:05:00:00 AM
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                                                         Lilianna Devlin, Brendan
Lester, Mylie Schmidt,Blade Robertson,Derrick Schroeder
    _win_loss_player_data:02:00:00 PM
                                         -$182,419
                                                          Mylie Schmidt, Corey Hu
ffman
grep: Notes_Player_Analysis: Is a directory
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$
```

```
sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Pla... 🦱 🔘 🧧
 File Edit View Search Terminal Help
mkdir: cannot create directory 'Roulette_Losses': File exists
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$ ls
0310_win_loss_player_data 0315_win_loss_player_data Roulette_Losses
0312_win_loss_player_data Notes_Player_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$ cat Roulette_Losses
0310_win_loss_player_data:05:00:00 AM -$82,348 Amirah
rtillo, Mylie Schmidt,Suhayb Maguire,Millicent Betts,Avi Graves
                                                                   Amirah Schneider, Nola Po
0310_win_loss_player_data:08:00:00 AM
                                                                   Chanelle Tapia, Shelley
                                                 -$97,383
Dodson , Valentino Smith, Mylie Schmidt
0310_win_loss_player_data:02:00:00 PM
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                                                                    Jaden Clarkson, Kaidan S
heridan, Mylie Schmidt
0310_win_loss_player_data:08:00:00 PM
lasquez, Jerome Klein ,Rahma Buckley
0310_win_loss_player_data:11:00:00 PM
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ooper, Mylie Schmidt
0312_win_loss_player_data:05:00:00 AM
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dman, Halima Little, Etienne Brady, Mylie Schmidt
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veland, Mylie Schmidt,Kobe Higgins
                                                 -$97,383
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                                                                   Mae Hail, Mylie Schmidt
0312_win_loss_player_data:02:00:00 PM
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,Ayden Beil
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0312_win_loss_player_data:08:00:00 PM
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Vlad Hatfield, Kerys Fraz
ier,Mya Butler, Mylie Schmidt,Lex Oakley,Elin Wormald
0315_win_loss_player_data:05:00:00 AM
, Mylie Schmidt
                                                 -$82,844
                                                                   Arjan Guzman, Sommer Mann
0315_win_loss_player_data:08:00:00 AM -$97,001
Lester, Mylie Schmidt,Blade Robertson,Derrick Schroeder
                                                                   Lilianna Devlin, Brendan
0315_win_loss_player_data:02:00:00 PM -$182,419
                                                                     Mylie Schmidt, Corey Hu
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/P
layer_Analysis$
```

Record in the Notes Player Analysis file:

The times the losses occurred on each day. If there is a certain player that was playing during each of those times. The total count of times this player was playing.

```
gation/Player_Analysis$ clear
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investi
gation/Player_Analysis$ grep 'Mylie Schmidt' Roulette_Losses
0310_win_loss_player_data:05:00:00 AM
                                         -$82,348
                                                         Amirah Schneider
.Nola Portillo.
                              ,Suhayb Maguire,Millicent
                                                        Betts, Avi Graves
0310 win loss player data:08:00:00 AM
                                         -$97,383
                                                         Chanelle Tapia,
Shelley Dodson , Valentino Smith,
0310_win_loss_player_data:02:00:00 PM
                                         -$82,348
                                                         Jaden Clarkson,
Kaidan Sheridan,
                                                         Mylie Schmidt, T
0310_win_loss_player_data:08:00:00 PM
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rixie Velasquez, Jerome Klein ,Rahma Buckley
                                         -$88,383
                                                         Mcfadden Wasim,
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Norman Cooper,
0312_win_loss_player_data:05:00:00 AM
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                                         -$182,300
ysia Goodman, Halima Little, Etienne Brady,
                                                         Rimsha Gardiner,
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                                         -$97,383
                              ,Kobe Higgins
Fern Cleveland,
0312_win_loss_player_data:02:00:00 PM
                                                         Mae Hail, Mylie
                                         -$82,348
        ,Ayden Beil
0312_win_loss_player_data:08:00:00 PM
                                         -$65,792
                                                         Tallulah Rawling
s,Josie Dawe, Mylie Schmidt,Hakim Stott, Esther Callaghan, Ciaron Villan
ueva
                                                         Vlad Hatfield, Ke
0312_win_loss_player_data:11:00:00 PM
                                         -$88,229
rys Frazier, Mya Butler, Mylie Schmidt, Lex Oakley, Elin Wormald
```

Complete the dealer analysis

Navigate to the Dealer_Analysis directory

This file contains the dealer schedules for the various Lucky Duck casino games: Blackjack, Roulette, and Texas Hold 'Em. Using your findings from the player analysis, create a separate script to look at each day and time that you determined losses occurred. Use awk, pipes, and grep to isolate out the following four fields:

Time a.m./p.m. First name of roulette dealer Last name of roulette dealer

```
GNU nano 2.9.3
                                                                                                                                                                                            find by time.sh
cat 0310 Dealer_schedule
cat 0312 Dealer_schedule
                                                                                                                                                                                      Dealers working during losses
                                                                                                                                                                                        Dealers_working_during_losses
Dealers_working_during_losses
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                                                                                                                                                                                          Dealers_working_during_losses
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                                                                                                                                                                                         Dealers_working_during_losses
Dealers_working_during_losses
                                                                                  {print
                                                                                                                                                                                        Dealers_working_during_losses
Dealers_working_during_losses
                                                        awk
                                                                                                                                         дгер
                                                                                                                                                     '02:00:00 PM'
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                                                                                {print $1,
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 at 0315_Dealer_schedule
at 0315_Dealer_schedule
at 0315_Dealer_schedule
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Dealers_working_during_losses
                                                         awk
                                                                                   (print
                                                                                                                                         дгер
                                                                                                                                                                                         Dealers working during losses
```

For example, if a loss occurred on March 10 at 2 p.m., you would write one script to find the roulette dealer who was working at that specific day and time. Run all of the scripts and append those results to a file called Dealers_working_during_losses.

```
sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis 🗈 🗈
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
ler_Analysis$ clear
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
ler_Analysis$ ls
0310 Dealer schedule 0312 Dealer schedule 0315 Dealer schedule find_by_time.sh
Notes_Dealer_schedule
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
ler_Analysis$ ./find_by_time.sh
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
ler_Analysis$ ls
0310_Dealer_schedule 0312_Dealer_schedule 0315_Dealer_schedule Dealers_working_
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
ler_Analysis$ cat 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 PM Billy Jones
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_ssssssyssssssss
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dea
nalysis$ =
```

Preview your file Dealers_working_during_losses and analyze the data. The primary dealer working at the times where losses occurred.

How many times the dealer worked when major losses occurred. Complete the player/employee correlation.

```
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investi
gation/Player_Analysis$ cat Notes_Player_Analysis
0310_win_loss_player_data:05:00:00 AM
                                            -$82,348
                                                             Mylie Schmidt
0310_win_loss_player_data:08:00:00 AM
0310_win_loss_player_data:02:00:00 PM
0310_win_loss_player_data:08:00:00 PM
                                            -$97,383
                                                              Mylie Schmidt
                                            -$82,348
                                                             Mylie Schmidt
                                                             Mylie Schmidt
                                            -$65,348
0310_win_loss_player_data:11:00:00 PM
                                                             Mylie Schmidt
                                            -$88,383
0312_win_loss_player_data:05:00:00 AM
                                            -$182,300
                                                             Mylie Schmidt
0312_win_loss_player_data:08:00:00 AM
                                                             Mylie Schmidt
                                            -$97,383
0312_win_loss_player_data:02:00:00 PM
                                                             Mylie Schmidt
                                            -$82,348
0312_win_loss_player_data:08:00:00 PM
                                                             Mylie Schmidt
                                            -$65,792
0312_win_loss_player_data:11:00:00 PM
                                            -$88,229
                                                             Mylie Schmidt
0315_win_loss_player_data:05:00:00 AM
                                                             Mylie Schmidt
                                            -$82,844
                                                             Mylie Schmidt
0315_win_loss_player_data:08:00:00 AM
                                            -$97,001
0315_win_loss_player_data:02:00:00 PM
                                                             Mylie Schmidt
                                            -$182,419
 13 65 870 Notes_Player_Analysis
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investi
gation/Player_Analysis$ grep 'Mylie Schmidt' Roulette Losses | wc -l
13
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investi
gation/Player_Analysis$
```

In the notes file of the Player_Dealer_Correlation directory, add a summary of your findings noting the player and dealer you believe are colluding to scam Lucky Duck. Make sure to document your specific reasons for this finding.

Step 4: Scripting Your Tasks

You manager is impressed with the work you have done so far on the investigation. They tasked you with building a shell script that can easily analyze future employee schedules. They will use this to determine which employee was working at a specific time in the case of future losses. Complete the following tasks:

Remain in the Dealer_Analysis directory. Develop a shell script called roulette_dealer_finder_by_time.sh

```
File Edit View Search Terminal Help

GNU nano 2.9.3 roulette_dealer_finder_by_time.sh

#!/bin/bash
cat $1_Dealer_schedule | awk -F " " '{print $1, $2, $5, $6}' | grep "$2"
```

that can analyze the employee schedule to easily find the roulette dealer at a specific time. Hint: You will be using a script similar to the one you created for the dealer analysis step, but you will not output the results into a file.

Design the shell script to accept the following two arguments: One for the date (four digits) One for the time Note: The argument should be able to accept a.m. or p.m. Test your script on the schedules to confirm it outputs the correct dealer at the time specified.

Bonus

In case there is future fraud on the other Lucky Duck games, create a shell script called roulette_dealer_finder_by_time_and_game.sh that has the three following arguments: Specific time Specific date Casino game being played

```
Sysaumin@uoumcuuesk.cop:~|Lucky_Duck_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investigations/Houlette_Loss_investig
```

```
Sysadmin@UbuntuDesktop: "/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$ ./roulette_dealer_finder_by_time_and_game.sh 0310 '05:00:00 AM'

Black Jack dealer: Katey Bean | Roulette dealer: Billy Jones | Texas Hold EM dealer: Evalyn Howell were all working during the 05:00:00 AM shift.

sysadmin@UbuntuDesktop: "/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Dealer_Analysis$
```

Submission Guidelines

Move the following to the Player_Dealer_Correlation directory:

All note files Evidence files: Roulette_Losses Dealers_working_during_losses Shell script(s) Compress the Player Dealer Correlation folder to a zip file and submit it.

```
Dealer_Analysis Player_Analysis Player_Dealer_Correlation Player_Dealer_Correlation.zip
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ cd Player_Dealer_Correlation/
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$ ls
Dealers_working_during_Osses find_by_time.sh Notes_Dealer_schedule Notes_Player_Analysis Player_Dealer_Correlation_Notes Roulette_Losss
sysadmin@UbuntuDesktop:~/Lucky_Duck_Investigations/Roulette_Loss_Investigation/Player_Dealer_Correlation$
```

```
sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation

File Edit View Search Terminal Help

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ ls

Dealer_Analysis Player_Analysis Player_Dealer_Correlation

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ zip Player_Dealer_
Correlation.zip Player_Dealer_Correlation/
   adding: Player_Dealer_Correlation/ (stored 0%)

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ ls

Dealer_Analysis Player_Analysis Player_Dealer_Correlation Player_Dealer_Correlation.zip

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$ ls

Dealer_Analysis Player_Analysis Player_Dealer_Correlation Player_Dealer_Correlation.zip

sysadmin@UbuntuDesktop: ~/Lucky_Duck_Investigations/Roulette_Loss_Investigation$
```