\CTS-120-841-Lab Module 12

- In this lab you will create shell script, answer a few questions, and show me the results.
- Just like in real life you will build the final script in small pieces, doing 1 step at a time, adding functionality as you go.
- Each step is worth 2 points, except the last one; it is worth 6 points
- Include a screen print of **just the area of the screen with the desired result** (not the whole screen) in the table cell below the question, unless otherwise instructed.
    - *Reminder: Use the **Shift-Ctrl-Prtscr shortcut** & select just the area that you want.*
- I have done one of them for you so you know the format & results that I will be grading on.
- Save the lab as a PDF, naming it:
    - ***FirstName_Lastname-Module#-Lab.pdf***

Download the file awkfile.txt
Determine where each field is and what the delimiter is.

1. Create an awk statement that takes the awkfile.txt and prints out: • Product • Price • Payment method Show me the output
awk statement $ awk -F "," '$1 ~/Product[0-9]/ {print $1" "$2" "$3}' awkfile.txt
Output Product1 1200 Mastercard Product1 1400 Visa Product1 1200 Mastercard Product1 1700 Visa Product2 3600 Visa Product1 1200 Visa Product4 1200 Mastercard Product1 2200 Mastercard Product5 1200 Mastercard Product1 1800 Visa Product1 1200 Diners Product3 1200 Amex Product1 1000 Mastercard Product3 1200 Visa Product1 3500 Visa Product1 1300 Diners Product6 1200 Visa

```
Product1 1200 Diners
Product2 3600 Visa
```

2. Take the statement that you just created and add functions to just bring up lines that have Product 1

Show me the first line of output

awk statement

```
[student@localhost ~]$ awk -F "," '$1 ~/Product1/ {print $1" "$2" "$3}' awkfile.txt
```

First line of output

```
Product1 1200 Mastercard
Product1 1400 Visa
Product1 1200 Mastercard
Product1 1700 Visa
Product1 1200 Visa
Product1 2200 Mastercard
Product1 1800 Visa
Product1 1200 Diners
Product1 1000 Mastercard
Product1 3500 Visa
Product1 1300 Diners
Product1 1200 Diners
```

3. Take the statement that you just created and add functions **to format the output to line up the columns**

Show me the statement & just the first 2 or 3 lines of output.

awk statement

```
awk -F "," '$1 ~/Product1/ {print $1" "$2" "$3}' awkfile.txt |column -t
```

first 2 or 3 lines of output

```
Product1  1200  Mastercard
Product1  1400  Visa
Product1  1200  Mastercard
Product1  1700  Visa
Product1  1200  Visa
Product1  2200  Mastercard
Product1  1800  Visa
Product1  1200  Diners
Product1  1000  Mastercard
Product1  3500  Visa
Product1  1300  Diners
Product1  1200  Diners
```

4. Take the statement that you just created and add functions to **sort the output by price**

Show me the statement & the output.

awk statement

```
awk -F "," '$1 ~/Product1/ {print $1" "$2" "$3}' awkfile.txt |column -t|sort -k 1
```

Output

```
Product1  1000  Mastercard
Product1  1200  Diners
Product1  1200  Diners
Product1  1200  Mastercard
Product1  1200  Mastercard
Product1  1200  Visa
Product1  1300  Diners
Product1  1400  Visa
Product1  1700  Visa
Product1  1800  Visa
Product1  2200  Mastercard
Product1  3500  Visa
```

5. Take the statement that you just created and add functions to **sort the output by price with the highest price at the top**

Show me the statement & the output.

awk statement

```
awk -F "," '$1 ~/Product1/ {print $1" "$2" "$3}' awkfile.txt |column -t|sort -nr -k 1
```

Output

```
Product1  3500  Visa
Product1  2200  Mastercard
Product1  1800  Visa
Product1  1700  Visa
Product1  1400  Visa
Product1  1300  Diners
Product1  1200  Visa
Product1  1200  Mastercard
Product1  1200  Mastercard
Product1  1200  Diners
Product1  1200  Diners
Product1  1000  Mastercard
```

6. Take the statement that you just created and add functions to **format the output to say: *Name*** purchased ***Product*** for $***Price***, and paid by ***Payment_Type***

Show me the statement & the output.

awk statement

```
awk -F "," '$1 ~/Product1/ {print "Name: "$4", purchased: "$1", for: "$2",\t paid by: " $3}' awkfile.txt
|column -t|sort -nr -k 1
```

Output **(Sean's entry isn't formatted the same as the others, the code is ok) Output lined up perfectly on my screen**

```
Name:  Stacy,    purchased:  Product1,   for:      1200,  paid   by:   Diners
Name:  Sean      ,         purchased:  Product1,  for:   1000,  paid  by:       Mastercard
Name:  Richard,   purchased:  Product1,   for:      3500,  paid   by:   Visa
Name:  Leanne,    purchased:  Product1,   for:      1300,  paid   by:   Diners
Name:  LAURENCE,  purchased:  Product1,   for:      1200,  paid   by:   Visa
Name:  Gouya,     purchased:  Product1,   for:      1700,  paid   by:   Visa
Name:  Federica,  purchased:  Product1,   for:      1200,  paid   by:   Mastercard
Name:  Carolina,  purchased:  Product1,   for:      1200,  paid   by:   Mastercard
Name:  Betina,    purchased:  Product1,   for:      1400,  paid   by:   Visa
Name:  Barbara,   purchased:  Product1,   for:      1200,  paid   by:   Diners
Name:  Aidan,     purchased:  Product1,   for:      1800,  paid   by:   Visa
Name:  Adam,      purchased:  Product1,   for:      2200,  paid   by:   Mastercard
```

Ok let's get ready to put these statements into a script

7. Create an awk statement to print the header
   There is a header in the awkfile.txt, just print out the
   - Name
   - Product
   - Price
   - Payment Type

   fields and format them as needed. You may have to tweak them once you output the data as well.

Show me the statement & the output.

awk statement

```
awk -F "," 'NR ==1 {print $4, $1, $2, $3}' awkfile.txt |column -t
```

Create a Script, give it permissions and run

```
#!/bin/bash
awk -F "," 'NR ==1 {print $4,"    " $1, "    ", $2,"    " $3}' awkfile.txt |column -t | sort -k 1
awk -F "," '$1 ~/Product[0-9]/ {print $4, "  ", $1, "  ", $2, "  ", $3}' awkfile.txt|column -t |sort -k 1
chmod 755 demo.sh
./demo.sh
```

Output

```
Name  Product  Price  Payment_Type
Adam     Product1   2200     Mastercard
Aidan    Product1   1800     Visa
Barbara  Product1   1200     Diners
```

```
Betina    Product1   1400     Visa
Carolina  Product1   1200     Mastercard
Federica  Product1   1200     Mastercard
Fleur     Product4   1200     Mastercard
Georgia   Product3   1200     Visa
Gerd      W          Product2  3600      Visa
Gouya     Product1   1700     Visa
Heidi     Product3   1200     Amex
Janet     Product6   1200     Visa
LAURENCE  Product1   1200     Visa
Leanne    Product1   1300     Diners
Renee     Elisabeth  Product5  1200      Mastercard
Richard   Product1   3500     Visa
Sabine    Product2   3600     Visa
Sean      Product1   1000     Mastercard
Stacy     Product1   1200     Diners
```

8. 6 Pts - Take the statement from question 5. Modify it so that we only match buyers that are not from the United States.
   Combine that with and with the statement in #7 to create a script that will output the header, and the text, Like this

```
Name      Product      Price      Payment_Type    Country
Carolina  Product1     $1200      Mastercard      United Kingdom
```

****Notice the $ next to the Price****
The exact spacing is not important, just make it readable

Try to line them up the best you can using the |column –t, “   “(spaces) or the ‘\t’

Show me the statement & the output.

awk statement

```
#!/bin/bash
awk -F "," 'NR ==1 {print $4,"    " $1, " ", $2,"    ", $3 "    ", $7}' awkfile.txt |column -t | sort -k 1
awk -F "," '$1 ~/Product[0-9]/ {print $4, "  ", $1, "$",$2, "  ", $3, "  "$7}' awkfile.txt|column -t |sort -k 1
```

Output

```
Name  Product  Price  Payment_Type  Country
Adam      Product1  $       2200  Mastercard  United      States
Aidan     Product1  $       1800  Visa        France
Barbara   Product1  $       1200  Diners      India
Betina    Product1  $       1400  Visa        United      States
Carolina  Product1  $       1200  Mastercard  United      Kingdom
Federica  Product1  $       1200  Mastercard  United      States
Fleur     Product4  $       1200  Mastercard  United      States
Georgia   Product3  $       1200  Visa        United      States
Gerd      W         Product2  $    3600       Visa        United   States
```

```
Gouya    Product1  $       1700  Visa       Australia
Heidi    Product3  $       1200  Amex       Netherlands
Janet    Product6  $       1200  Visa       Canada
LAURENCE  Product1  $       1200  Visa       United      States
Leanne   Product1  $       1300  Diners     Ireland
Renee    Elisabeth  Product5  $    1200       Mastercard  Israel
Richard  Product1  $       3500  Visa       United      States
Sabine   Product2  $       3600  Visa       United      Kingdom
Sean     Product1  $       1000  Mastercard  United      States
Stacy    Product1  $       1200  Diners     United      States
[student@localhost ~]$
```