

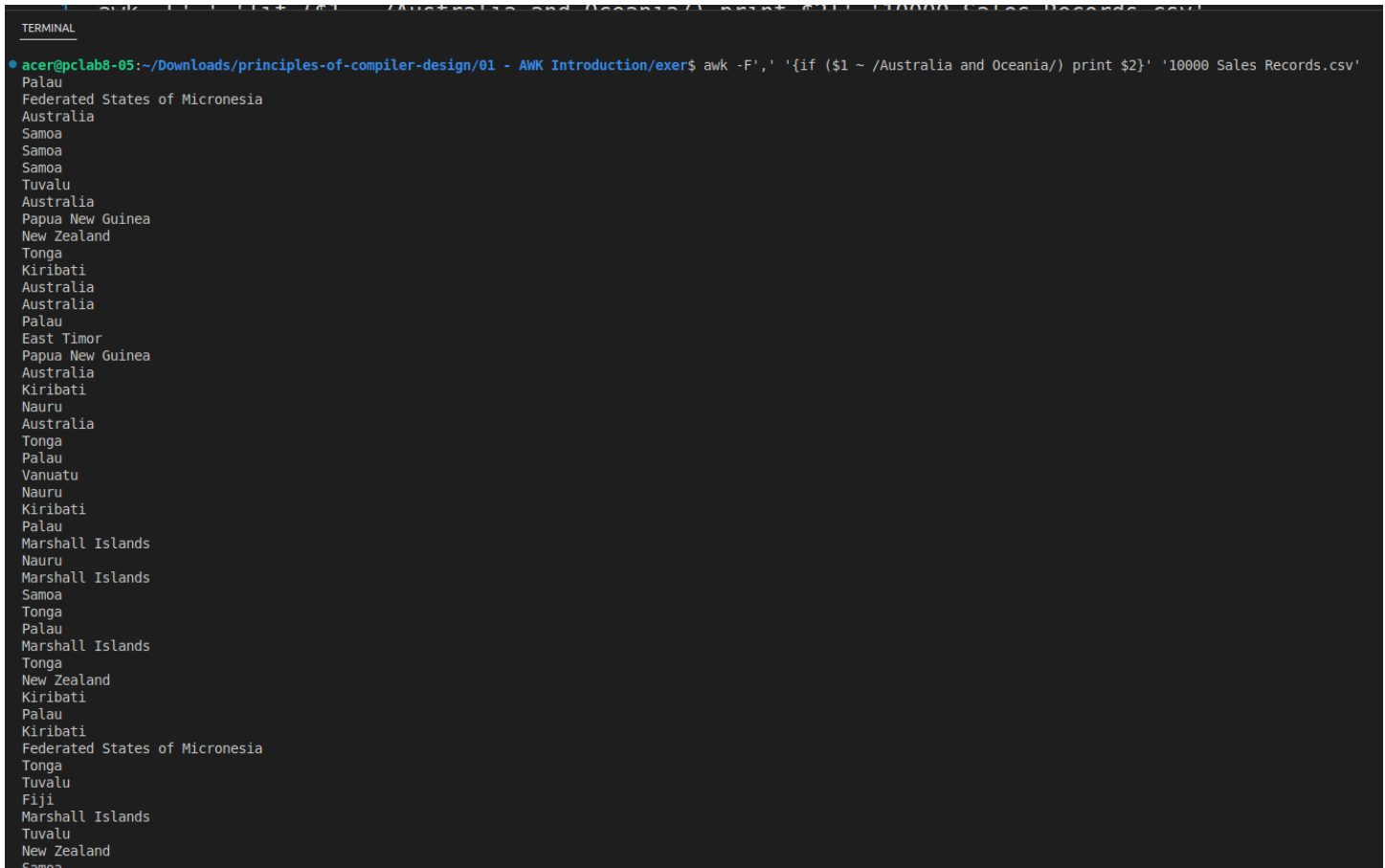
## Exercise 1: awk

### Instructions:

The following questions could be answered by parsing the record attached. Answer by showing the command and the results (You may use screenshots as answers)

1) Print all the countries in the Australia and Oceania region

`awk -F',' '{if ($1 ~ /Australia and Oceania/) print $2}' '10000 Sales Records.csv'`



```
TERMINAL
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($1 ~ /Australia and Oceania/) print $2}' '10000 Sales Records.csv'
Palau
Federated States of Micronesia
Australia
Samoa
Samoa
Samoa
Tuvalu
Australia
Papua New Guinea
New Zealand
Tonga
Kiribati
Australia
Australia
Palau
East Timor
Papua New Guinea
Australia
Kiribati
Nauru
Australia
Tonga
Palau
Vanuatu
Nauru
Kiribati
Palau
Marshall Islands
Nauru
Marshall Islands
Samoa
Tonga
Palau
Palau
Marshall Islands
Tonga
New Zealand
Kiribati
Palau
Kiribati
Federated States of Micronesia
Tonga
Tuvalu
Fiji
Marshall Islands
Tuvalu
New Zealand
Samoa
```

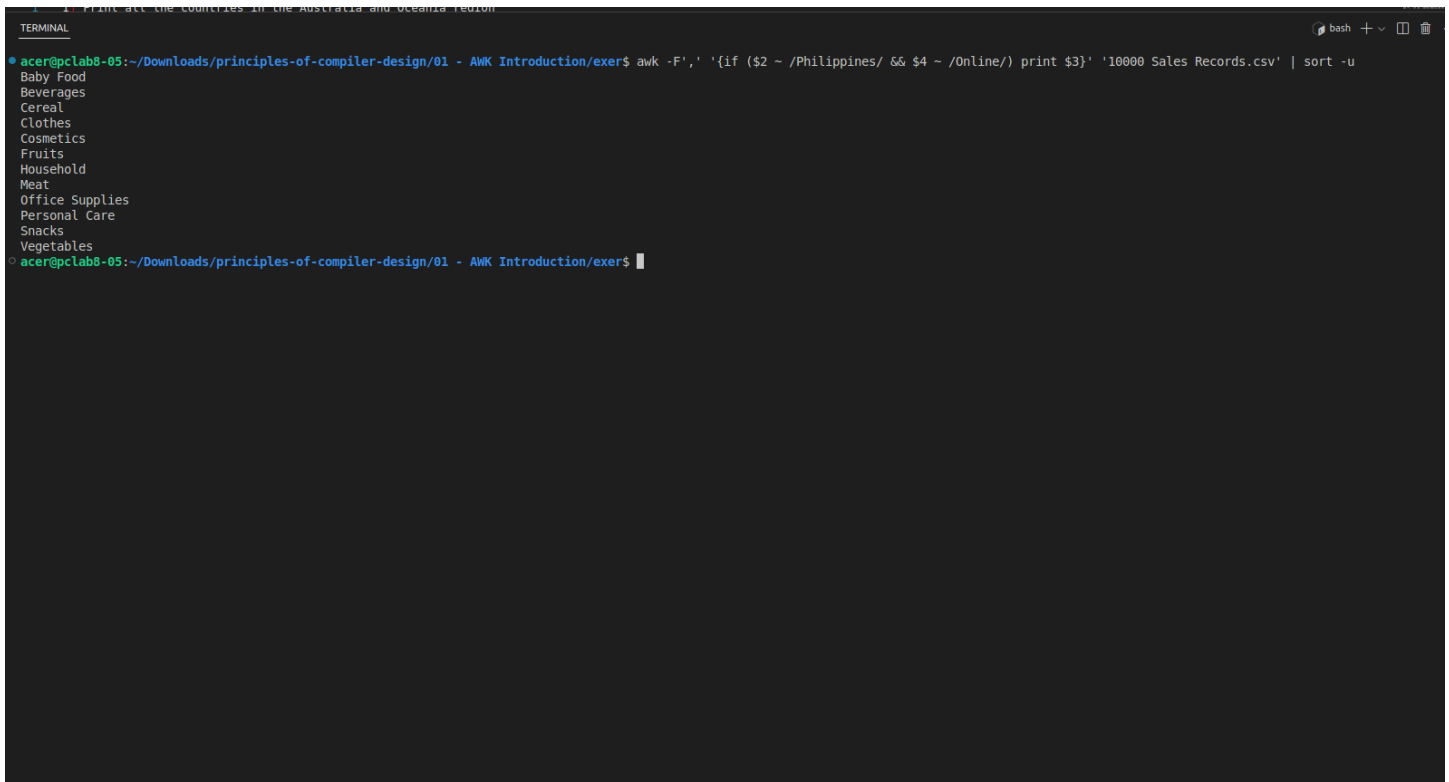
2) Print all the countries in the Central America and the Caribbean region that starts with H

`awk -F',' '{if ($1 ~ /Central America and the Caribbean/ && $2 ~ /^H/) print $2}' '10000 Sales Records.csv'`

```
TERMINAL
• acer@pc1ab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($1 ~ /Central America and the Caribbean/ && $2 ~ /^H/) print $2}' '10000 Sales Records.csv'
Haiti
Haiti
Honduras
Haiti
Haiti
Honduras
Honduras
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Haiti
Honduras
Honduras
Honduras
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```

3) What are the items sold online to the Philippines?

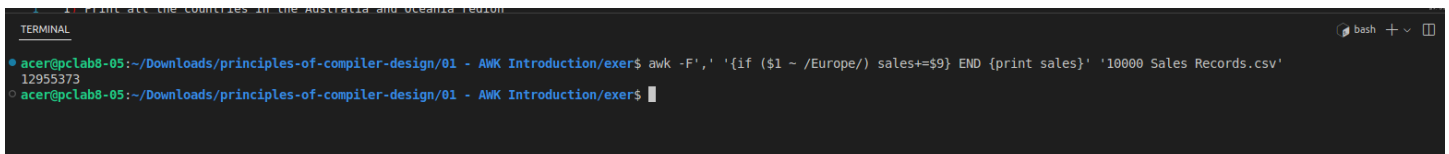
```
awk -F',' '{if ($2 ~ /Philippines/ && $4 ~ /Online/) print $3}' '10000 Sales Records.csv' | sort -u
```



```
1. Print all the countries in the Australia and Oceania region
TERMINAL
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$ awk -F',' '{if ($2 ~ /Philippines/ && $4 ~ /Online/) print $3}' '10000 Sales Records.csv' | sort -u
Baby Food
Beverages
Cereal
Clothes
Cosmetics
Fruits
Household
Meat
Office Supplies
Personal Care
Snacks
Vegetables
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$
```

4) How many transactions/sales does Europe have?

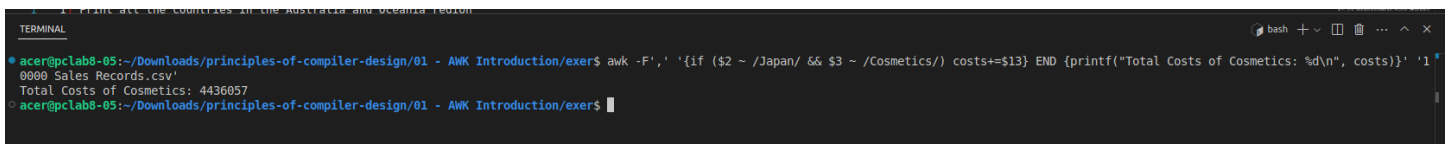
```
awk -F',' '{if ($1 ~ /Europe/) sales+=$9} END {print sales}' '10000 Sales Records.csv'
```



```
1. Print all the countries in the Australia and Oceania region
TERMINAL
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$ awk -F',' '{if ($1 ~ /Europe/) sales+=$9} END {print sales}' '10000 Sales Records.csv'
12955373
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$
```

5) What is the total cost incurred by Japan on cosmetics?

```
awk -F',' '{if ($2 ~ /Japan/ && $3 ~ /Cosmetics/) costs+=$13} END {printf("Total Costs of Cosmetics: %d\n", costs)}' '10000 Sales Records.csv'
```



```
1. Print all the countries in the Australia and Oceania region
TERMINAL
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$ awk -F',' '{if ($2 ~ /Japan/ && $3 ~ /Cosmetics/) costs+=$13} END {printf("Total Costs of Cosmetics: %d\n", costs)}' '10000 Sales Records.csv'
Total Costs of Cosmetics: 4436057
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exers$
```

6) How many units of fruits and vegetables were sold to Canada?

```
awk -F',' '{if ($2 ~ /Canada/ && ($3 ~ /Fruits|Vegetables/)) units+=$9} END {printf("Total Units: %d\n", units)}' '10000 Sales Records.csv'
```

```
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($2 ~ /Canada/ && ($3 ~ /Fruits|Vegetables/)) units+=$9} END {printf("Total Units: %d\n", units)}' '10000 Sales Records.csv'
Total Units: 37833
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$
```

7) What are the countries who bought more than 9900 units of meat?

```
awk -F',' '{if ($3 ~ /Meat/ && $9 > 9900) print $2}' '10000 Sales Records.csv'
```

```
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($3 ~ /Meat/ && $9 > 9900) print $2}' '10000 Sales Records.csv'
Bosnia and Herzegovina
Qatar
Burkina Faso
Spain
Norway
Italy
Turkey
Sudan
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$
```

8) What is the total profit made from China from snacks?

```
awk -F',' '{if ($2 ~ /China/ && $3 ~ /Snacks/) profit+=$14} END {printf("Total Profit: %.2f\n", profit)}' '10000 Sales Records.csv'
```

```
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($2 ~ /China/ && $3 ~ /Snacks/) profit+=$14} END {printf("Total Profit: %.2f\n", profit)}' '10000 Sales Records.csv'
Total Profit: 544838.34
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$
```

9) Starting from the oldest, list the dates when clothes are ordered for South Africa? (Note: use sort options)

```
awk -F',' '{if ($2 ~ /South Africa/ && $3 ~ /Clothes/) print $6}' '10000 Sales Records.csv' | sort -t "/" -k3n -k1n
```

```
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' '{if ($2 ~ /South Africa/ && $3 ~ /Clothes/) print $6}' '10000 Sales Records.csv' | sort -t "/" -k3n -k1n
8/20/2010
12/3/2011
12/5/2013
1/15/2014
7/7/2014
9/7/2014
10/4/2014
10/5/2014
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$
```

10) Print the country, item, and total profit of the transaction with the largest total profit

```
awk -F',' 'BEGIN {x=0} {if ($14 > 0+x) x=$14; country=$2; item=$3;} END {print "Country: " country ", Item: " item ", Profit: " x}' '10000 Sales Records.csv'
```

```
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$ awk -F',' 'BEGIN {x=0} {if ($14 > 0+x) x=$14; country=$2; item=$3;} END {print "Country: " country ", Item: " item ", Profit: " x}' '10000 Sales Records.csv'
Country: Mongolia, Item: Snacks, Profit: 999926.37
acer@pclab8-05:~/Downloads/principles-of-compiler-design/01 - AWK Introduction/exer$
```

Record source: <http://eforexcel.com/wp/downloads-18-sample-csv-files-data-sets-for-testing-sales/>