

Labs - Practice Course

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Calculate disk usage

Role-playing dice

Sticks Game

Sticks Game

The Cash Register



Calculate disk usage



Introduction

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- ▶ The target folder (first argument).

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- ▶ If the target folder exist and is a directory.
- ▶ If the result of your search contain at least a file.
- ▶ That the specified extension is in a valid list that you defined.



Tips

- ▶ Make a first version without any argument, with a null depth of research or a full depth, and a specific extension with a start of research from your current folder.
(ex : All files with txt extension from the current folder in any child folder)



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- ▶ A third script version with the extension of the searched file
- ▶ A fourth script argument with the depth of your research



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- ▶ The bash command `du` (for Disk Usage) which return the occupied disk space for a file.



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- ▶ The bash command `du` (for Disk Usage) which return the occupied disk space for a file.
- ▶ The bash command `find` to search and print a list of files according to their extension (one filter from many possible). For this command, beware of file's name with spaces (`IFS=$'\n'`)
- ▶ And of course, the math expressions to calculate the total amount of disk space with an addition.



Example of execution

The display must necessarily look like this example:

```
username@hostname:$ ./calcul_disk_usage.sh $HOME txt 2
/home/catanese/phpmyadmin.txt size = 4
/home/catanese/.minetest/debug.txt size = 456
/home/catanese/Vidéos/torrent.txt size = 4
/home/catanese/prive/ssh_one_and_one.txt size = 4
/home/catanese/install/torrent.txt size = 4
/home/catanese/bin/README_yGenerate_QCM.txt size = 4
/home/catanese/bin/monfichier.txt size = 4
Number of files found 7, size : 480 octets
```

```
username@hostname:$ ./calcul_disk_usage.sh $HOME txt invalid
Search depth must be an integer
Command syntax ./calcul_disk_usage.sh TARGET_DIRECTORY EXTENSION DEPTH
```

```
username@hostname:$ ./calcul_disk_usage.sh invalid txt 2
The name of the directory entered does not exist
Command syntax ./calcul_disk_usage.sh TARGET_DIRECTORY EXTENSION DEPTH
```



```
username@hostname:$ ./calcul_disk_usage.sh $HOME invalid 2  
Extension name is not in the list  
Command syntax ./calcul_disk_usage.sh TARGET_DIRECTORY EXTENSION DEPTH
```

```
username@hostname:$ ./calcul_disk_usage.sh $HOME/workspace java 2  
Number of files found 0, size : 0 octets
```



```
username@hostname:$ ./calcul_disk_usage.sh $HOME/workspace java 4
/home/catanese/workspace/VISUEL/src/geodesie/CRepereMadone.java size = 4
/home/catanese/workspace/VISUEL/src/geodesie/CPoint3D.java size = 20
/home/catanese/workspace/VISUEL/src/enregistrement/CEnregistrementVGOXThread.java
size = 4
/home/catanese/workspace/VISUEL/src/enregistrement/CEnregistrementKPCEThread.java
size = 4...

/home/catanese/workspace/VISUEL/src/ihm/FenRejeu.java size = 20
/home/catanese/workspace/VISUEL/src/ihm/FenPrepa.java size = 16
/home/catanese/workspace/VISUEL/src/ihm/FenObj.java size = 116
/home/catanese/workspace/VISUEL/src/ihm/FullScreenToggleAction.java size = 4
/home/catanese/workspace/Test_Auto_IHM_Java/src/simple_ihm/Main_IHM.java size = 8
Number of files found 58, size : 1336 octets
```



Role-playing dice



Introduction



The goal of this exercise is to create a script that will display X dice with a random number between 1 and 6 in the terminal.



Display

The dice have to be like that :

```
  .- - - - .  
 /      *   / |  
/ - - - - /  |  
|          |*|  
|      *   | /  
|          | /  
| - - - - |
```



The display must necessarily look like this example :

```
isen@isen $ ./my-dice
```

```
how many dice : 3
```

```
  .-----.  
 /   1   /\  
/-----/\ |  
|         |1|  
|   1   | /\  
|         |/  
'-----'
```

```
  .-----.  
 /    6   /\  
/-----/\ |  
|         |6|  
|    6   | /\  
|         |/  
'-----'
```

```
  .-----.  
 /    4   /\  
/-----/\ |  
|         |4|  
|    4   | /\  
|         |/  
'-----'
```

Requirement

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- ▶ The script name is : `my-dice` and upload on Moodle.



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- ▶ The script can be executed without option with user interaction (like the example of "Display").



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`./my-dice -n 3`).



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- ▶ The script name is : `my-dice` and upload on Moodle.
- ▶ The script can be executed without option with user interaction (like the example of "Display").
- ▶ The script can be executed with the option '-n' followed by a number (ex:
`./my-dice -n 3`).
- ▶ The minimum number of dice must be 1 and the maximum must be 6. You need to check it and return the contextual help if it's not good.



Advise

- ▶ You can use sed to replace something in the dice.



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- ▶ You can create a variable which will sotck the return of the shuf command for each die.



Advise

- ▶ You can use sed to replace something in the dice.
- ▶ You can create a variable which will sotck the return of the shuf command for each die.
- ▶ Pay attention to the spaces of the ascii art in relation to the variable.



Sticks Game



Introduction

The goal of this exercise is to create the Sticks Game.

This game is a duel between computer and human player.

There are N sticks. Each gamer has to take 1, 2 or 3 sticks. If the gamer take the last stick, he loses.



Requirements

- ▶ The numbers of sticks is given in **argument**.



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- ▶ The name of script must be : `sticks_game.sh`



Sample with human player is winner

```
isen@isen $ ./sticks_game.sh 10
Start Sticks Game with 10 sticks
| | | | | | | | | |
| | | | | | | | | |
How many sticks do you take ? 3
| | | | | | |
| | | | | | |
Computer takes 2
| | | | |
| | | | |
How many sticks do you take ? 1
| | | |
| | | |
Computer takes 2
| |
| |
How many sticks do you take ? 1
|
|
You win
```



Sample with computer is winner

```
isen@isen $ ./sticks_game.sh 10
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| | | | | | | | | |
| | | | | | | | | |
How many sticks do you take ? 3
| | | | | | |
| | | | | | |
Computer takes 1
| | | | | |
| | | | | |
How many sticks do you take ? 3
| | |
| | |
Computer takes 2
|
|
How many sticks do you take ? 1
You lose
```



Sample with checks

```
isen@isen $ ./sticks_game.sh notNumber
The sitck number is not a number
isen@isen $ echo $?
1
isen@isen $ ./sticks_game.sh 9
The sitck number is not between 20 and 30
isen@isen $ echo $?
2
isen@isen $ ./sticks_game.sh 31
The sitck number is not between 20 and 30
isen@isen $ ./sticks_game.sh 10
Start Sticks Game with 10 sticks
| | | | | | | | | |
| | | | | | | | | |
How many sticks do you take ? notNumber
It is not a number
How many sticks do you take ? 5
You have take sitck between 1 and 3
How many sticks do you take ?
```



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Computer takes 2
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How many sticks do you take ? 1
|
|
You win
```



Sample with computer is winner

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Start Sticks Game with 10 sticks
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How many sticks do you take ? notNumber
It is not a number
How many sticks do you take ? 5
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The Cash Register



The Cash Register

The purpose of the exercise is to create a cash register for a store.



Main requirements

- ▶ The tree must be:



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- ▶ The tree must be:
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.sh` : your script



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- ▶ The tree must be:
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.sh` : your script
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d` : your folder where all sales will be stored.



Main requirements

- ▶ The tree must be:
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.sh` : your script
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d` : your folder where all sales will be stored.
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d/YYYYMMDD.csv` : One day sales (example : 20221013.csv)



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 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d/YYYYMMDD.csv` : One day sales (example : 20221013.csv)
- ▶ One day sales are stored in CSV format like this:
HH-MM;customer name;amount;payment method (example : 13-28;LEFEBVRE;28;CARD)



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- ▶ The tree must be:
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.sh` : your script
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d` : your folder where all sales will be stored.
 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d/YYYYMMDD.csv` : One day sales (example : 20221013.csv)
- ▶ One day sales are stored in CSV format like this:
HH-MM;customer name;amount;payment method (example : 13-28;LEFEBVRE;28;CARD)
- ▶ Amounts are always whole numbers (integer)



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 - ▶ `/home/isen/EXAM/CashRegister/CashRegister.d/YYYYMMDD.csv` : One day sales (example : 20221013.csv)
- ▶ One day sales are stored in CSV format like this:
HH-MM;customer name;amount;payment method (example : 13-28;LEFEBVRE;28;CARD)
- ▶ Amounts are always whole numbers (integer)
- ▶ The means of payment are only: CASH, CARD or BANK_CHECK



Step 1 : the launch menu

When you run your script, it should display the following menu:



```
isen@lefebvre_1_client ~/EXAM/CashRegister $ ./CashRegister.sh
```

Select your action

add a sale: ADD

close day: CLOSE

quit: QUIT

nokeyword

Please **select** ADD|CLOSE|QUIT

Select your action

add a sale: ADD

close day: CLOSE

quit: QUIT

ADD

add sale

Select your action

add a sale: ADD

close day: CLOSE

quit: QUIT

CLOSE

close

Select your action

add a sale: ADD

close day: CLOSE

quit: QUIT

QUIT

Good Bye

You must use : - a case/esac - a loop: while - the read command - 1 function per keyword, i.e. 4 functions - 1 function to display the menu



Step 2 : add a sale

You must complete your ADD function to save a sale in the file (be careful at the very first execution, it may be necessary to create some folders, file).

If ever the file of the day exists, it must be completed.

You must check when entering whether: - customer name is not empty - the amount is indeed an int - the payment method is correct

You must of course respect the example below



```
isen@lefebvre_1_client ~/EXAM/CashRegister $ ./CashRegister.sh
```

```
Select your action
```

```
    add a sale: ADD
```

```
    close day: CLOSE
```

```
    quit: QUIT
```

```
ADD
```

```
Customer:
```

```
Customer: Loic
```

```
Amount: pas un chiffre
```

```
Amount: 12
```

```
Means of payment (CARD|CASH|BANK_CHECK): ERROR
```

```
Means of payment (CARD|CASH|BANK_CHECK): CARD
```

```
Select your action
```

```
    add a sale: ADD
```

```
    close day: CLOSE
```

```
    quit: QUIT
```

```
ADD
```

```
Customer: Guillaume
```

```
Amount: 12
```

```
Means of payment (CARD|CASH|BANK_CHECK): CASH
```

```
Select your action
```

```
    add a sale: ADD
```

```
    close day: CLOSE
```

```
    quit: QUIT
```

```
QUIT
```

Step 3 : the closing of the day

You must complete your CLOSE function to display : - show total by payment method
- display the total of the day



```
isen@lefebvre_1_client ~/EXAM/CashRegister $ cat CashRegister.d/20221013.csv
```

```
20-16;Loic;12;CARD
```

```
20-16;Loic;12;CARD
```

```
20-16;Loic;12;CARD
```

```
20-16;Loic;12;CARD
```

```
20-16;Loic;12;CARD
```

```
20-16;Loic;12;CARD
```

```
20-16;Guillaume;12;CASH
```

```
20-16;Guillaume;12;CASH
```

```
20-16;Guillaume;12;CASH
```

```
20-16;Guillaume;12;CASH
```

```
20-16;Guillaume;12;CASH
```

```
isen@lefebvre_1_client ~/EXAM/CashRegister $ ./CashRegister.sh
```

```
Select your action
```

```
    add a sale: ADD
```

```
    close day: CLOSE
```

```
    quit: QUIT
```

```
CLOSE
```

```
TOTAL CASH : 60
```

```
TOTAL CARD : 72
```

```
TOTAL BANK_CHECK : 0
```

```
TOTAL : 132
```

```
Select your action
```

```
    add a sale: ADD
```

```
    close day: CLOSE
```