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20 後來發現 ``diff -d -u`` 的參數，於是進行簡化，程式碼如下：

21
22 ![image](https://hackmd.io/_uploads/SkifQU7Tp.png)

23

24

25 **3 比較目錄**

26

27 想法：一樣嘗試過直接parse ``diff -d`` 的輸出（如下圖），後來覺得應該先篩好再比較，但礙於時間限制未能順利完成

28

29 ![image](https://hackmd.io/_uploads/B1aJNL766.png)

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32 **4 隱藏的檔案與 Symlink**

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34 想法：在篩選array時使用readlink來代替diff進行人工判斷

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36 **5 僅比較特定的檔案**

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38 想法：利用find指令-regex option篩選出特定檔案

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40 參考資料：

41 1. sed切檔案 <https://www.hy-star.com.tw/tech/linux/sed/sed.html>

42 2. check symlink <https://koenwoortman.com/bash-script-check-if-file-is-symlink/>

43 3. <https://stackoverflow.com/questions/10929453/read-a-file-line-by-line-assigning-the-value-to-a-variable>

44 4. Diff command in linux

Line 30, Columns 1 — 47 Lines



Spaces: 4

Breaks

SUBLIME



Length: 1270

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1 參數檢查

```
# Check if there are enough arguments and that the files exist
if [[ $# -ne 2 ]]; then
    usage
    exit 1
fi
# Check if -a and -n comes with -r option
if [[ "$recursive" = false ]] && ([[ "$compare_hidden" = true ]] || [[ "$regex_bool" = true ]] || [[ -n "$regex_exp" ]]); then
    usage #call usage function
    exit 1
fi
# Display information about compare.sh if -h is specified
if [[ "$output_info" = true ]]; then
    usage
    exit 1
fi
# Check symbolic link
if [[ "$treat_symlinks" = false ]] && ([[ -L $file_a ]] || [[ -L $file_b ]]); then
    usage
    exit 1
fi
# -n but no expression given
if [[ "$regex_bool" = true ]] && [[ -z "$regex_exp" ]]; then
    usage
    exit 1
fi
```

想法：如上圖，逐一檢視題目給的參數條件進行判斷式的處理；其中判斷檔案/目錄是否合法的部分寫在下面進行compare的區塊

```
if [[ "$recursive" = false ]] && [[ -f "$file_a" ]] && [[ -f "$file_b" ]]; then

if [[ "$recursive" = true ]] && [[ -d "$1" ]] && [[ -d "$2" ]]; then
```

2 比較檔案

想法：嘗試過直接parse diff -d 的輸出（如下圖），主要邏輯為使用awk等指令篩選出如"1c1", "3,5c4,5"之類的資訊進行運算：

```

for match in $matches; do
|   # calculate (a,b,c)
|   #echo "matches[0]: $match"

|   if [[ $match == *c* ]]; then
|   |   change_info1=$(echo $match | awk -F[c] '{print $1}') #a
|   |   change_info2=$(echo $match | awk -F[c] '{print $2}') #b

|   |   # calculate a (delete line)
|   |   a=$((a + $(calculate_change $change_info1)))

|   |   # calculate b (insert line)
|   |   b=$((b + $(calculate_change $change_info2)))

|   elif [[ $match == *d* ]]; then
|   |   del_info=$(echo $match | awk -F[d] '{print $1}') #a

|   |   # calculate a (delete line)
|   |   a=$((a + $(calculate_change $del_info)))

|   elif [[ $match == *a* ]]; then
|   |   add_info=$(echo $match | awk -F[a] '{print $1}') #b

|   |   # calculate b (insert line)
|   |   b=$((b + $(calculate_change $add_info)))
|   fi

|   local c=$((line_a - a))
|   local x=0

|   # calculate x
|   if [[ $a -gt $b ]]; then
|   |   x=$(( (100 * a) / (a + c) ))
|   else
|   |   x=$(( (100 * b) / (b + c) ))
|   fi
done

```

後來發現 `diff -d -u` 的參數，於是進行簡化，程式碼如下：

```
calculate_changes() {  
    local mes=(`diff -d -u $1 $2`)  
  
    local line_a=$(wc -l < "$1")  
    local mes=$2  
    local pattern=$3  
    local a=0; b=0; c=0;  
    #local b=0  
  
    local flag=0  
  
    for line in "${mes[@]"; do  
        if [[ "$line" == "@@" ]]; then  
            flag=$((flag + 1))  
        fi  
        if [[ $flag -ge 2 ]]; then  
            if [[ "$line" == -* ]]; then  
                a=$((a + 1))  
            elif [[ "$line" == +* ]]; then  
                b=$((b + 1))  
            fi  
        fi  
    done  
  
    c=$((line_a - a))  
    #echo "flag: $flag"  
    #echo "(a,b,c): $a $b $c"  
  
    # calculate x  
    if [[ $a -gt $b ]]; then  
        x=$(( (100 * a) / (a + c) ))  
    else
```

```
| x=$(( (100 * b) / (b + c) ))  
fi  
  
echo $(x)  
}
```

3 比較目錄

想

 Uploading file_46yi1gvxw

4 隱藏的檔案與 Symlink

想法：在篩選array時使用readlink來代替diff進行人工判斷

5 僅比較特定的檔案

想法：利用find指令-regex option篩選出特定檔案

參考資料：

1. sed切檔案 <https://www.hy-star.com.tw/tech/linux/sed/sed.html> (<https://www.hy-star.com.tw/tech/linux/sed/sed.html>).
2. check symlink <https://koenwoortman.com/bash-script-check-if-file-is-symlink/> (<https://koenwoortman.com/bash-script-check-if-file-is-symlink/>).
3. <https://stackoverflow.com/questions/10929453/read-a-file-line-by-line-assigning-the-value-to-a-variable> (<https://stackoverflow.com/questions/10929453/read-a-file-line-by-line-assigning-the-value-to-a-variable>).
4. Diff command in Linux
https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/alevel_unix_07_apr20_AKM.pdf
(https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/alevel_unix_07_apr20_AKM.pdf).
5. 資料型態轉型
<https://blog.csdn.net/abcnull/article/details/106385999>
(<https://blog.csdn.net/abcnull/article/details/106385999>).
6. Array操作<https://www.puritys.me/docs-blog/article-96-shell-script-Array.html>