

1. Написать скрипт на BASH, который делает следующее: создать 50 папок в текущей папке, в каждой созданной папке создать 100 подпапок, и в каждой из этих подпапок создать 200 пустых файлов. Если уже сделали или начали (это долго), то оставить 50-100-200. Если еще не начали, то 10-11-12.

```
#!/bin/bash

for ((i = 1; i <= 10; i++))
do
    mkdir "dir$i"
    cd "dir$i"
    for ((j = 1; j <= 11; j++))
    do
        mkdir "poddir$j"
        cd "poddir$j"
        for ((k = 1; k <= 12; k++))
        do
            touch "file$k"
        done
        cd ..
    done
    cd ..
done
```

```
alex@Redmi:~$ ls -l
total 20
-rw-r--r-- 1 alex alex 224 Oct 11 17:13 delete_script
-rw-r--r-- 1 alex alex 634 Oct 11 16:55 dir_script
-rw-r--r-- 1 alex alex 230 Oct 11 17:18 dir_script0
-rw-r--r-- 1 alex alex 156 Oct 10 19:42 process_script
-rw-r--r-- 1 alex alex 207 Oct 10 16:54 transliter.txt
alex@Redmi:~$ bash dir_script0
alex@Redmi:~$ ls -l
total 60
-rw-r--r-- 1 alex alex 224 Oct 11 17:13 delete_script
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir1
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir10
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir2
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir3
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir4
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir5
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir6
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir7
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir8
drwxr-xr-x 13 alex alex 4096 Oct 11 17:19 dir9
-rw-r--r-- 1 alex alex 634 Oct 11 16:55 dir_script
-rw-r--r-- 1 alex alex 230 Oct 11 17:18 dir_script0
-rw-r--r-- 1 alex alex 156 Oct 10 19:42 process_script
-rw-r--r-- 1 alex alex 207 Oct 10 16:54 transliter.txt
```

```

alex@Redmi:~$ cd dir4
alex@Redmi:~/dir4$ ls -l
total 44
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir1
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir10
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir11
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir2
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir3
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir4
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir5
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir6
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir7
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir8
drwxr-xr-x 2 alex alex 4096 Oct 11 17:19 poddir9
alex@Redmi:~/dir4$ cd poddir8
alex@Redmi:~/dir4/poddir8$ ls -l
total 0
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file1
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file10
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file11
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file12
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file2
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file3
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file4
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file5
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file6
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file7
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file8
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file9

```

2. Модернизировать скрипт, добавив в него возможность пользователю выбирать место расположения папок, их количество, шаблон имени. Количество вводить нужно и папок, и подпапок, и файлов.

```

#!/bin/bash

read -p "Enter location: " location
read -p "Enter number of directs: " num_dir
read -p "Enter number of poddirects: " num_poddir
read -p "Enter number of files: " num_file
read -p "Enter name template for directs: " dir_temp
read -p "Enter name template for poddirects: " poddir_temp
read -p "Enter name template for files: " file_temp

cd $location

for ((i = 1; i <= $num_dir; i++))
do
    mkdir "$dir_temp$i"
    cd "$dir_temp$i"
    for ((j = 1; j <= $num_poddir; j++))
    do
        mkdir "$poddir_temp$j"
        cd "$poddir_temp$j"
        for ((k = 1; k <= $num_file; k++))
        do
            touch "$file_temp$k"
        done
        cd ..
    done
    cd ..
done

```

```
alex@Redmi:~$ bash dir_script
Enter location: dir2/poddir6
Enter number of directs: 5
Enter number of poddirects: 4
Enter number of files: 3
Enter name template for directs: this
Enter name template for poddirects: is
Enter name template for files: win
alex@Redmi:~$ cd dir2/poddir6
alex@Redmi:~/dir2/poddir6$ ls -l
total 20
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file1
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file10
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file11
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file12
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file2
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file3
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file4
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file5
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file6
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file7
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file8
-rw-r--r-- 1 alex alex 0 Oct 11 17:19 file9
drwxr-xr-x 6 alex alex 4096 Oct 12 11:44 this1
drwxr-xr-x 6 alex alex 4096 Oct 12 11:44 this2
drwxr-xr-x 6 alex alex 4096 Oct 12 11:44 this3
drwxr-xr-x 6 alex alex 4096 Oct 12 11:44 this4
drwxr-xr-x 6 alex alex 4096 Oct 12 11:44 this5
```

```
alex@Redmi:~/dir2/poddir6$ cd this1
alex@Redmi:~/dir2/poddir6/this1$ ls -l
total 16
drwxr-xr-x 2 alex alex 4096 Oct 12 11:44 is1
drwxr-xr-x 2 alex alex 4096 Oct 12 11:44 is2
drwxr-xr-x 2 alex alex 4096 Oct 12 11:44 is3
drwxr-xr-x 2 alex alex 4096 Oct 12 11:44 is4
alex@Redmi:~/dir2/poddir6/this1$ cd is4
alex@Redmi:~/dir2/poddir6/this1/is4$ ls -l
total 0
-rw-r--r-- 1 alex alex 0 Oct 12 11:44 win1
-rw-r--r-- 1 alex alex 0 Oct 12 11:44 win2
-rw-r--r-- 1 alex alex 0 Oct 12 11:44 win3
```

3. Написать скрипт, который контролирует выполнение какого-либо процесса и в случае прерывания этого процесса возобновляет его работу. Скрипт должен запросить периодичность проверки и имя процесса.

```
alex@alex-VirtualBox:~$ bash proc_script.sh
Enter name of process: ls
Enter period of request: 2
Enter 'ctrl + C' for end the script.
Process is dead. Restarting...
1 Music Videos alice.sh count.sh eltexalice logs.txt result.txt tar_dir test.txt
Desktop Pictures addtext.sh at count.txt grep pid.sh snap tarscript to
Documents Public alarm auth_script log_script proc_script.sh state temp.txt
Downloads Templates alarm.wav authorization.txt data logs.sh processes.txt stdout test.sh
Process is dead. Restarting...
1 Music Videos alice.sh count.sh eltexalice logs.txt result.txt tar_dir test.txt
Desktop Pictures addtext.sh at count.txt grep pid.sh snap tarscript to
Documents Public alarm auth_script log_script proc_script.sh state temp.txt
Downloads Templates alarm.wav authorization.txt data logs.sh processes.txt stdout test.sh
Process is dead. Restarting...
1 Music Videos alice.sh count.sh eltexalice logs.txt result.txt tar_dir test.txt
```

```
#!/bin/bash

read -p "Enter name of process: " name
read -p "Enter period of request: " time
echo "Enter 'ctrl + C' for end the script."

while :
do
    ps aux | grep $name | grep -v grep > processes.txt
    state=$(awk '{print $8}' processes.txt | tail -1 | cut -b 1)

    if [[ $state -ne "X" ]]
    then
        echo "Process is alive."
    else
        echo "Process is dead. Restarting..."
        $name
    fi

    sleep $time
done
```

4. Написать скрипт разбора логов, скрипт запрашивает имя процесса и ищет для него логи, вводит их на экран за указанный промежуток времени.

```
#!/bin/bash

read -p "Enter name of process: " proc

begin=$1
end=$2

journalctl --since $begin --until $end | grep $proc
```

```
alex@alex-VirtualBox:~$ bash logs.sh 10:00 10:25
Enter name of process: gnome-shell
окт 14 10:01:06 alex-VirtualBox gnome-shell[1497]: Window manager warning: last_user_time (2741855) is g
41821). This most likely represents a buggy client sending inaccurate timestamps in messages such as _N
ound...
окт 14 10:01:06 alex-VirtualBox gnome-shell[1497]: Window manager warning: W2 appears to be one of the c
2741855. Working around...
окт 14 10:01:06 alex-VirtualBox gnome-shell[1497]: Window manager warning: last_user_time (2741949) is g
41917). This most likely represents a buggy client sending inaccurate timestamps in messages such as _N
ound...
окт 14 10:01:06 alex-VirtualBox gnome-shell[1497]: Window manager warning: W2 appears to be one of the c
2741949. Working around...
окт 14 10:01:08 alex-VirtualBox gnome-shell[1497]: Window manager warning: last_user_time (2744244) is g
44206). This most likely represents a buggy client sending inaccurate timestamps in messages such as _N
ound...
окт 14 10:01:08 alex-VirtualBox gnome-shell[1497]: Window manager warning: W2 appears to be one of the c
2744244. Working around...
окт 14 10:01:08 alex-VirtualBox gnome-shell[1497]: Window manager warning: last_user_time (2744277) is g
44244). This most likely represents a buggy client sending inaccurate timestamps in messages such as _N
ound...
окт 14 10:01:08 alex-VirtualBox gnome-shell[1497]: Window manager warning: W2 appears to be one of the c
2744277. Working around...
окт 14 10:01:16 alex-VirtualBox gnome-shell[1497]: Window manager warning: last_user_time (2752221) is g
```



```
alex@alex-VirtualBox:~$ bash logs.sh 9:00 10:00
Enter name of process: cron
OCT 14 09:15:43 alex-VirtualBox systemd[1]: Started Trigger anacron every hour.
OCT 14 09:15:43 alex-VirtualBox systemd[1]: Condition check resulted in Run anacron jobs being skipped.
OCT 14 09:15:43 alex-VirtualBox cron[602]: (CRON) INFO (pidfile fd = 3)
OCT 14 09:15:43 alex-VirtualBox cron[602]: (CRON) INFO (Running @reboot jobs)
OCT 14 09:16:30 alex-VirtualBox cron[2120]: (CRON) DEATH (can't open or create /var/run/crond.pid: Permission denied)
OCT 14 09:17:03 alex-VirtualBox CRON[2134]: pam_unix(cron:session): session opened for user root(uid=0) by (uid=0)
OCT 14 09:17:03 alex-VirtualBox CRON[2135]: (root) CMD ( cd / && run-parts --report /etc/cron.hourly)
OCT 14 09:17:03 alex-VirtualBox CRON[2134]: pam_unix(cron:session): session closed for user root
OCT 14 09:17:55 alex-VirtualBox cron[2196]: (CRON) DEATH (can't open or create /var/run/crond.pid: Permission denied)
OCT 14 09:18:12 alex-VirtualBox sudo[2198]: alex : TTY=pts/0 ; PWD=/home/alex ; USER=root ; COMMAND=/usr/sbin/cron alarm
.sh authorization.txt auth_script Desktop Documents Downloads eltexalice grep log_script Music Pictures pid.sh processes.txt
lic snap state tarscript Templates test.txt Videos proc_script
OCT 14 09:18:12 alex-VirtualBox cron[2200]: (CRON) DEATH (can't lock /var/run/crond.pid, otherpid may be 602: Resource tempo
le)
OCT 14 09:18:44 alex-VirtualBox systemd[1]: Condition check resulted in Run anacron jobs being skipped.
OCT 14 09:20:25 alex-VirtualBox crontab[2229]: (alex) BEGIN EDIT (alex)
OCT 14 09:21:04 alex-VirtualBox crontab[2229]: (alex) REPLACE (alex)
OCT 14 09:21:04 alex-VirtualBox crontab[2229]: (alex) END EDIT (alex)
OCT 14 09:21:14 alex-VirtualBox crontab[2262]: (alex) BEGIN EDIT (alex)
```

5. Модернизировать скрипт, убрав из него интерфейс пользователя. Все конфигурирование должно осуществляться через конфигурационный файл. Конфигурационный файл должен иметь удобочитаемый для пользователя формат.

```
alex@alex-VirtualBox:~$ cat logs.txt
Name of the process - cron
Begin of time - 9:44:45
End of time - 10:00:00

alex@alex-VirtualBox:~$
```

```
#!/bin/bash

cut -d '-' -f 2 logs.txt > temp.txt
proc=$(sed -n '1p' temp.txt)
begin=$(sed -n '2p' temp.txt)
end=$(sed -n '3p' temp.txt)

journalctl --since $begin --until $end | grep $proc
```

```
alex@alex-VirtualBox:~$ bash logs.sh
OCT 14 09:45:01 alex-VirtualBox CRON[2664]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:45:01 alex-VirtualBox CRON[2663]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:45:01 alex-VirtualBox CRON[2664]: pam_unix(cron:session): session closed for user alex
OCT 14 09:45:01 alex-VirtualBox CRON[2663]: pam_unix(cron:session): session closed for user alex
OCT 14 09:46:01 alex-VirtualBox CRON[2682]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:46:01 alex-VirtualBox CRON[2683]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:46:01 alex-VirtualBox CRON[2682]: pam_unix(cron:session): session closed for user alex
OCT 14 09:46:01 alex-VirtualBox CRON[2683]: pam_unix(cron:session): session closed for user alex
OCT 14 09:46:20 alex-VirtualBox crontab[2658]: (alex) REPLACE (alex)
OCT 14 09:46:20 alex-VirtualBox crontab[2658]: (alex) END EDIT (alex)
OCT 14 09:47:01 alex-VirtualBox cron[602]: (alex) RELOAD (crontabs/alex)
OCT 14 09:47:01 alex-VirtualBox CRON[2703]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:47:01 alex-VirtualBox CRON[2701]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:47:01 alex-VirtualBox CRON[2701]: pam_unix(cron:session): session closed for user alex
OCT 14 09:47:01 alex-VirtualBox CRON[2703]: pam_unix(cron:session): session closed for user alex
OCT 14 09:47:01 alex-VirtualBox CRON[2702]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:47:01 alex-VirtualBox CRON[2702]: pam_unix(cron:session): session closed for user alex
OCT 14 09:48:01 alex-VirtualBox CRON[2725]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:48:01 alex-VirtualBox CRON[2724]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:48:01 alex-VirtualBox CRON[2723]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:48:01 alex-VirtualBox CRON[2725]: pam_unix(cron:session): session closed for user alex
OCT 14 09:48:01 alex-VirtualBox CRON[2723]: pam_unix(cron:session): session closed for user alex
OCT 14 09:48:01 alex-VirtualBox CRON[2724]: pam_unix(cron:session): session closed for user alex
OCT 14 09:49:02 alex-VirtualBox CRON[2775]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:49:02 alex-VirtualBox CRON[2775]: pam_unix(cron:session): session closed for user alex
OCT 14 09:49:02 alex-VirtualBox CRON[2777]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:49:02 alex-VirtualBox CRON[2776]: pam_unix(cron:session): session opened for user alex(uid=1000) by (uid=0)
OCT 14 09:49:02 alex-VirtualBox CRON[2777]: pam_unix(cron:session): session closed for user alex
OCT 14 09:49:02 alex-VirtualBox CRON[2776]: pam_unix(cron:session): session closed for user alex
```

6. Написать скрипт для резервного копирования указанной информации в указанное место, с указанием периодичности, либо времени запуска. Используется программа tar. Скрипт должен иметь читаемый интерфейс.

```
#!/bin/bash
```

```
read -p "Enter the location for backup: " location
```

```
read -p "Enter the file for backup: " file
```

```
read -p "Enter time of backup: " time
```

```
echo "tar -cvf "${location}/${file}.tar" $file" | at $time
```

```
~  
~
```

```
alex@alex-VirtualBox:~$ bash tarscript
```

```
Enter the location for backup: Desktop
```

```
Enter the file for backup: logs.txt
```

```
Enter time of backup: 12:33
```

```
warning: commands will be executed using /bin/sh
```

```
job 15 at Sat Oct 14 12:33:00 2023
```

```
alex@alex-VirtualBox:~$ at -l
```

```
15          Sat Oct 14 12:33:00 2023 a alex
```

```
alex@alex-VirtualBox:~$ cd Desktop/
```

```
alex@alex-VirtualBox:~/Desktop$ ls -l
```

```
total 12
```

```
-rw-rw-r-- 1 alex alex 10240 okt 14 12:33 logs.txt.tar
```

```
alex@alex-VirtualBox:~/Desktop$
```