

Linux 实验 2

(每个程序内部注释学号、运行前在界面打印学号证明)

(1) Obtain the system time, and check whether it is in the morning, afternoon, or evening

a. 题目要求程序

```
#!/bin/bash
hour = `date +%H`
case $hour in
0[1-9] | 1[01] )
echo "Good morining !!"
;;
1[234567] )
echo "Good afternoon !!"
;;
* )
echo "Good evening !! "
;;
Esac
```

b. 文件 2_1.sh 内容

```
1 #B22040702
2
3 #!/bin/bash
4 hour=`date +%H`
5 case $hour in
6 0[1-9] | 1[01] )
7 echo "Good morining !!"
8 ;;
9 1[234567] )
10 echo "Good afternoon !!"
11 ;;
12 * )
13 echo "Good evening !! "
14 ;;
15 esac
```

c. 实验结果

```
zoey@zoey:~/experiment2$ echo b22040702
b22040702
zoey@zoey:~/experiment2$ ./2_1.sh
Good morining !!
zoey@zoey:~/experiment2$
```

(2) Input two number, check which one is greater, and output the result

a. 题目要求程序

```
#!/bin/sh
echo "Enter the first integer:"
read first
echo "Enter the second integer:"
read second
if [ "$first" -gt "$second" ]
then
echo "$first is greater than $second"
elif [ "$first" -lt "$second" ]
then
echo "$FIRST is less than $second"
else
echo "$FIRST is equal to $second"
fi
```

b. 文件 2_2.sh 内容

```
1 #B22040702张欣雨
2
3 #!/bin/sh
4 echo "Enter the first integer:"
5 read first
6 echo "Enter the second integer:"
7 read second
8 if [ "$first" -gt "$second" ]
9 then
10 echo "$first is greater than $second"
11 elif [ "$first" -lt "$second" ]
12 then
13 echo "$first is less than $second"
14 else
15 echo "$first is equal to $second"
16 fi
```

c. 实验结果

```
zoey@zoey:~/experiment2$ echo b22040702
b22040702
zoey@zoey:~/experiment2$ ./2_2.sh
Enter the first integer:
2
Enter the second integer:
3
2 is less than 3
zoey@zoey:~/experiment2$
```

(3) Find the minimal value in a given list

a. 题目要求程序

```
#!/bin/bash
smallest=10000

for i in 8 2 18 0 -3 87
do
if test $i -lt $smallest
then
    smallest=$i
fi
done
echo $smallest
```

b. 文件 2_3.sh 内容

```
1 #B22040702张欣雨
2
3 #!/bin/bash
4 smallest=10000
5 for i in 8 2 18 0 -3 87
6 do
7 if test $i -lt $smallest
8 then
9     smallest=$i
10 fi
11 done
12 echo $smallest
```

c. 实验结果

```
zoey@zoey:~/experiment2$ echo b22040702
b22040702
zoey@zoey:~/experiment2$ chmod u+x 2_3.sh
zoey@zoey:~/experiment2$ ./2_3.sh
-3
zoey@zoey:~/experiment2$
```

(4) Calculate the number of executive file in the current directory

a.题目要求程序

```
#!/bin/bash
count=0
for i in *
do
if test -x $i
then
count=`expr $count + 1`
fi
done
echo Total of $count files executable
```

b.文件 2_4.sh 内容

```
1 #B22040702张欣雨
2
3 #!/bin/bash
4 count=0
5 for i in *
6 do
7 if test -x $i
8 then
9 count=`expr $count + 1`
10 fi
11 done
12 echo Total of $count files executable
```

c.实验结果

```
zoey@zoey:~/experiment2$ echo b22040702
b22040702
zoey@zoey:~/experiment2$ chmod u+x 2_4.sh
zoey@zoey:~/experiment2$ ./2_4.sh
Total of 4 files executable
zoey@zoey:~/experiment2$
```

(5) Check whether a given number is a prime, you have to write a function, and call the function

a. 题目要求程序

```
prime( )
{
    flag=1
    j=2
    while [ $j -le `expr $1 / 2` ]
    do
        if [ `expr $1 % $j` -eq 0 ]
        then
            flag=0
            break
        fi
        j=`expr $j + 1`
    done
    if [ $flag -eq 1 ]
    then
        return 1
    else
        return 0
    fi
}
prime $1

if [ $? -eq 1 ]
then
    echo "$1 is a prime!"
else
    echo "$1 is not a prime!"
fi
```

b. 文件 2_5.sh 内容

```
1 #B22040702张欣雨
2
3 prime( )
4 {
5     flag=1
6     j=2
7     while [ $j -le `expr $1 / 2` ]
8     do
9         if [ `expr $1 % $j` -eq 0 ]
10        then
11            flag=0
12            break
13        fi
14        j=`expr $j + 1`
15    done
16    if [ $flag -eq 1 ]
17    then
18        return 1
19    else
20        return 0
21    fi
22 }
23 prime $1
24 if [ $? -eq 1 ]
25 then
26     echo "$1 is a prime!"
27 else
28     echo "$1 is not a prime!"
29 fi
```

c. 实验结果

```
zoey@zoey:~/experiment2$ echo b22040702
b22040702
zoey@zoey:~/experiment2$ ./2_5.sh 13
13 is a prime!
zoey@zoey:~/experiment2$
```