



Introduction to Bash video lecture

07 - \$PATH and file permissions



The PATH environment variable

- The shell sets up some *environment variables* when it starts
- A very important variable for you to know about is \$PATH
- It contains a list of directories to search for commands
- That allows you to just write the name of a command like `ls` in order to run it, and not the full path to it `/bin/ls`
- Commands and scripts that are not in one of the directories in the PATH variable, can't be run without a path (how could Bash know where the command is?)
- Even if you are in the same directory as the script, you need to use `./script_name`

The PATH environment variable

```
rikard@newdelli:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
:/usr/games:/usr/local/games:/snap/bin:/home/rikard/bin/
```

```
rikard@newdelli:~$ which date
/bin/date
```

```
rikard@newdelli:~$ which bash
/bin/bash
```

```
rikard@newdelli:~$ which which
/usr/bin/which
```

```
rikard@newdelli:~$
```

File permissions

```
rikard@newdelli:~/bash-intro/text-files$ ls -l tehran_time.sh  
-rw-rw-r-- 1 rikard rikard 72 jul 29 15:39 tehran_time.sh
```

```
rikard@newdelli:~/bash-intro/text-files$ chmod u+x  
tehran_time.sh
```

```
rikard@newdelli:~/bash-intro/text-files$ ls -l tehran_time.sh  
-rwxrw-r-- 1 rikard rikard 72 jul 29 15:39 tehran_time.sh
```

```
rikard@newdelli:~/bash-intro/text-files$
```

File permissions

```
-rwxrw-r-- 1 rikard rikard 72 jul 29 15:39 tehran_time.sh
|||||||||`- others have no execute perm
|||||||||`-- others have no write perm
|||||||||`--- others have read perm
|||||||`---- group members have no exectute perm
|||||||`----- group members have write perm
|||||`----- group members have read perm
|||`----- user (owner) has execute perm
||`----- user (owner) has write perm
|`----- user (owner) has read perm
`----- this is a normal file (d means directory)
```

