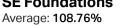
(/)

Curriculum

SE Foundations ^



0x03. Shell, init files, variables and expansions

DevOps Shell Bash

- By: Julien Barbier
- Weight: 1
- **■** Project over took place from Feb 14, 2023 6:00 AM to Feb 15, 2023 6:00 AM
- ☑ An auto review will be launched at the deadline

In a nutshell...

• Auto QA review: 70.0/70 mandatory & 20.0/20 optional

• Altogether: 200.0% Mandatory: 100.0% Optional: 100.0%

Calculation: 100.0% + (100.0% * 100.0%) == 200.0%

About Bash projects

Unless stated, all your projects will be auto-corrected with Ubuntu 20.04 LTS.

Concepts

For this project, we expect you to look at this concept:

• Struggling with the sandbox? Try this: Using Docker & WSL on your local host (/concepts/100039)

Resources

Read or watch:

- Expansions (/rltoken/oXnzBjLBA9t9dr7WuftdmQ)
- Shell Arithmetic (/rltoken/PLSUQnBcKKU5eEgRfRDlug)
- Variables (/rltoken/SvdGNZJjKsPghzZEhaWu4Q)
- Shell initialization files (/rltoken/tqud57kjsSYgDfeZDlwl3g)
- The alias Command (/rltoken/1Z3nYPjmidqQJXcWQ9Fkug)
- <u>Technical Writing (/rltoken/wYrZr3t3DeAE8PpYHYWGiw)</u>

man or help:

- printenv
- set
- export alias
- unalias
- source
- printf

Learning Objectives

At the end of this project, you are expected to be able to explain to anyone (/rltoken/d8LWxAXk9_gsvpPw3lCdwQ), without the help of Google:

General

• What happens when you type \$ ls -l *.txt



Help

Shell Initialization Files

- What are the /etc/profile file and the /etc/profile.d directory
- What is the ~/.bashrc file

Variables

- What is the difference between a local and a global variable
- What is a reserved variable
- How to create, update and delete shell variables
- What are the roles of the following reserved variables: HOME, PATH, PS1
- What are special parameters
- What is the special parameter \$??

Expansions

- What is expansion and how to use them
- What is the difference between single and double quotes and how to use them properly
- How to do command substitution with \$() and backticks

Shell Arithmetic

• How to perform arithmetic operations with the shell

The alias Command

- How to create an alias
- · How to list aliases
- How to temporarily disable an alias

Other help pages

• How to execute commands from a file in the current shell

Copyright - Plagiarism

- You are tasked to come up with solutions for the tasks below yourself to meet with the above learning objectives.
- You will not be able to meet the objectives of this or any following project by copying and pasting someone else's work.
- You are not allowed to publish any content of this project.
- Any form of plagiarism is strictly forbidden and will result in removal from the program.

Requirements

General

- Allowed editors: vi, vim, emacs
- All your scripts will be tested on Ubuntu 20.04 LTS
- All your scripts should be exactly two lines long (\$ wc -l file should print 2)
- All your files should end with a new line (<u>why? (http://unix.stackexchange.com/questions/18743/whats-the-point-in-adding-a-new-line-to-the-end-of-a-file/18789)</u>)
- The first line of all your files should be exactly #!/bin/bash
- A README.md file, at the root of the folder of the project, describing what each script is doing
- You are not allowed to use && , || or ;
- You are not allowed to use bc, sed or awk
- All your files must be executable

More Info

Readyour /etc/profile , /etc/inputrc and ~/.bashrc files.

Look at some files in the /etc/profile.d directory.

Note: You do not have to learn about awk , tar , bzip2 , date , scp , ulimit , umask , or shell scripting, yet.

Quiz questions

Great! You've completed the quiz successfully! Keep going! (Show quiz)

Q

Tasks

Repo:

☑ Done!

GitHub repository: alx-system_engineering-devops

>_ Get a sandbox

• Directory: 0x03-shell_variables_expansions

Check your code

• File: 0-alias

Help

1. Hello you mandatory

Score: 100.0% (Checks completed: 100.0%)

Create a script that prints hello user, where user is the current Linux user.

julien@ubuntu:/tmp/0x03\$ id uid=1000(julien) gid=1000(julien) groups=1000(julien), 4(adm), 24(cdrom), 27(sudo), 30(dip), 46(plugdev), 113(lpadmin), 128(sambashare)julien@ubuntu:/tmp/0x03\$./1-hello_you hello julien julien@ubuntu:/tmp/0x03\$

QA Review

Repo:

- GitHub repository: alx-system_engineering-devops
- Directory: 0x03-shell_variables_expansions
- File: 1-hello_you

✓ Done! Help Check your code >_ Get a sandbox **QA** Review

2. The path to success is to take massive, determined action

mandatory

Score: 100.0% (Checks completed: 100.0%)

Add /action to the PATH. /action should be the last directory the shell looks into when looking for a program.

julien@ubuntu:/tmp/0x03\$ echo \$PATH

/home/julien/bin:/home/julien/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/bin:/usr/games:/usr/local /games:/snap/bin

julien@ubuntu:/tmp/0x03\$ source ./2-path

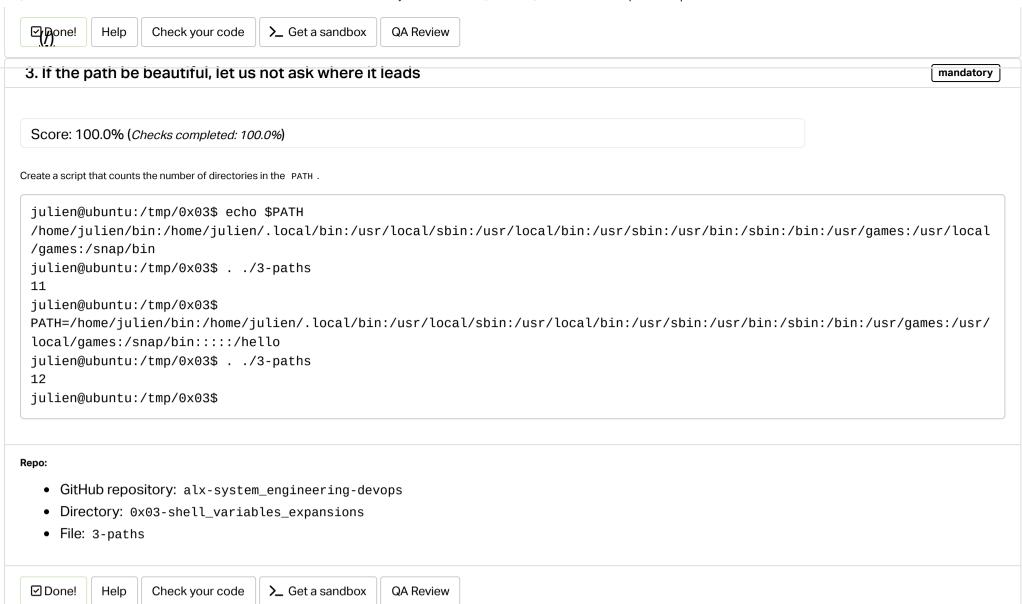
julien@ubuntu:/tmp/0x03\$ echo \$PATH

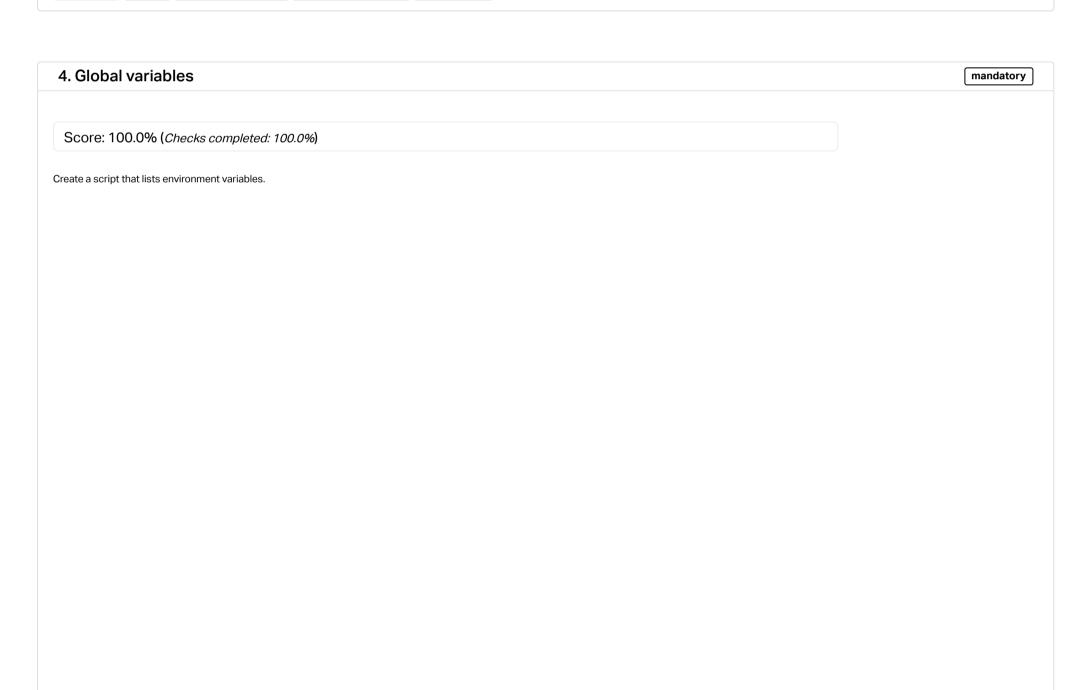
/home/julien/bin:/home/julien/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/usr/games:/usr/local/sbin:/usr/sbin:/usr/sbin:/usr/sbin:/usr/games:/usr/local/sbin:/usr/sbin:/usr/sbin:/usr/sbin:/usr/sbin:/usr/games:/usr/local/sbin:/usr

/games:/snap/bin:/action julien@ubuntu:/tmp/0x03\$

Repo:

- GitHub repository: alx-system_engineering-devops
- Directory: 0x03-shell_variables_expansions
- File: 2-path





Q

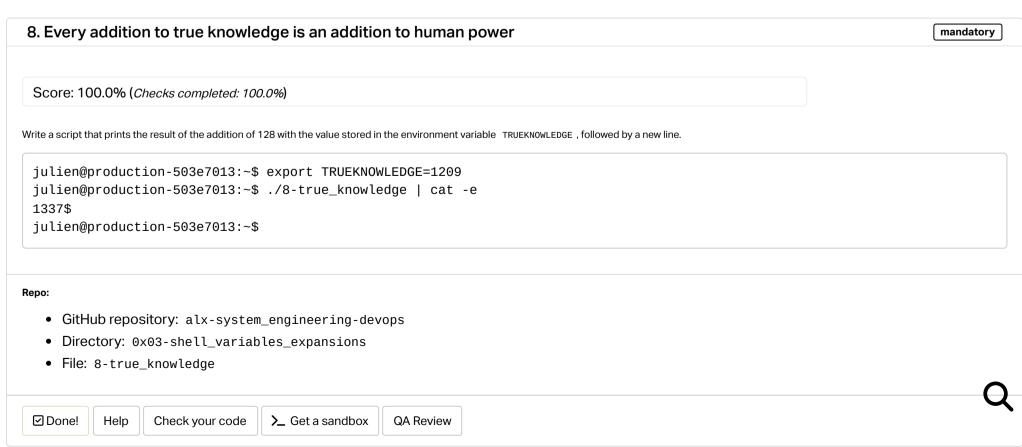
```
Project: 0x03. Shell, init files, variables and expansions | Nairobi Intranet
 julien@ubuntu:/tmp/0x03$ source ./4-global_variables
 c(A)gcc
 CDPATH=.:~:/usr/local:/usr:/
 CFLAGS=-02 -fomit-frame-pointer
 COLORTERM=gnome-terminal
 CXXFLAGS=-02 -fomit-frame-pointer
 DISPLAY=:0
 DOMAIN=hq.garrels.be
 e=
 TOR=vi
 FCEDIT=vi
 FIGNORE=.o:~
 G_BROKEN_FILENAMES=1
 GDK_USE_XFT=1
 GDMSESSION=Default
 GNOME_DESKTOP_SESSION_ID=Default
 GTK_RC_FILES=/etc/gtk/gtkrc:/nethome/franky/.gtkrc-1.2-gnome2
 GWMCOLOR=darkgreen
 GWMTERM=xterm
 HISTFILESIZE=5000
 history_control=ignoredups
 HISTSIZE=2000
 HOME=/nethome/franky
 HOSTNAME=octarine.hq.garrels.be
 INPUTRC=/etc/inputrc
 IRCNAME=franky
 JAVA_HOME=/usr/java/j2sdk1.4.0
 LANG=en_US
 LDFLAGS=-s
 LD_LIBRARY_PATH=/usr/lib/mozilla:/usr/lib/mozilla/plugins
 LESSCHARSET=latin1
 LESS=-edfMQ
 LESSOPEN=|/usr/bin/lesspipe.sh %s
 LEX=flex
 LOCAL_MACHINE=octarine
 LOGNAME=franky
 [\ldots]
 julien@ubuntu:/tmp/0x03$
Repo:
   • GitHub repository: alx-system_engineering-devops
   • Directory: 0x03-shell_variables_expansions
   • File: 4-global_variables
 ☑ Done!
          Help
                  Check your code
                                 >_ Get a sandbox
                                                  QA Review
5. Local variables
                                                                                                                             mandatory
```

Score: 100.0% (Checks completed: 100.0%) Create a script that lists all local variables and environment variables, and functions. julien@ubuntu:/tmp/0x03\$. ./5-local_variables BASH=/bin/bash BASHOPTS=checkwinsize:cmdhist:complete_fullquote:expand_aliases:extglob:extquote:force_fignore:histappend:interactive_comme nts:progcomp:promptvars:sourcepath BASH_ALIASES=() BASH_ARGC=() BASH_ARGV=() BASH_CMDS=() BASH_COMPLETION_COMPAT_DIR=/etc/bash_completion.d BASH_LINENO=() BASH_REMATCH=() BASH_SOURCE=() BASH_VERSINFO=([0]="4" [1]="3" [2]="46" [3]="1" [4]="release" [5]="x86_64-pc-linux-gnu") BASH_VERSION='4.3.46(1)-release' CLUTTER_IM_MODULE=xim COLUMNS=133 COMPIZ_CONFIG_PROFILE=ubuntu COMP_WORDBREAKS=\$' \t\n"\'><=; |&(:'</pre> DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-Fg27Lr20bq DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path DESKTOP_SESSION=ubuntu [...]

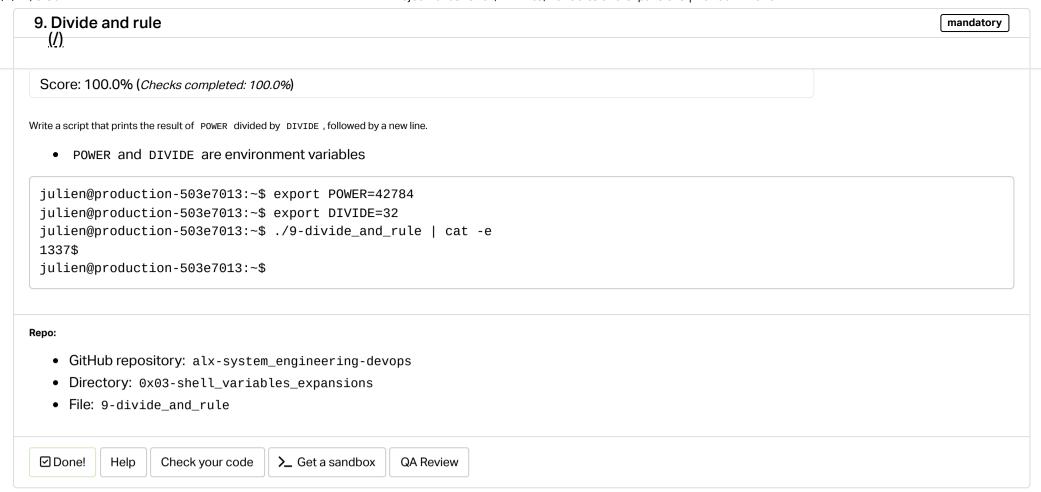
https://intranet.alxswe.com/projects/209 5/11

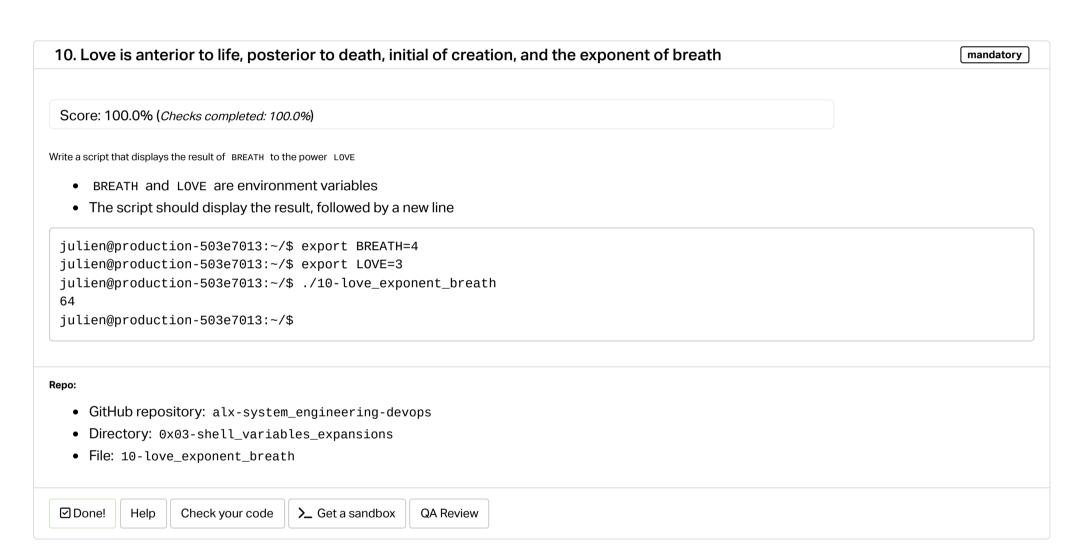
julien@ubuntu:/tmp/0x03\$

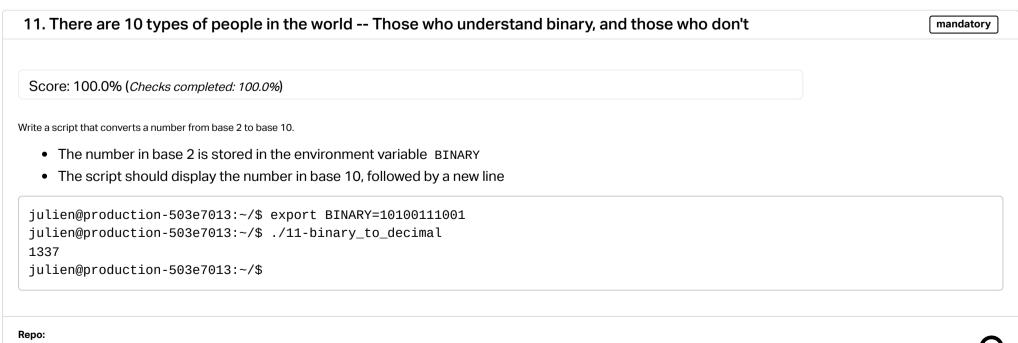
3/1/24, 5:30 PM Project: 0x03. Shell, init files, variables and expansions | Nairobi Intranet Rep (1) • GitHub repository: alx-system_engineering-devops • Directory: 0x03-shell_variables_expansions • File: 5-local_variables **QA** Review ☑ Done! Help Check your code >_ Get a sandbox 6. Local variable mandatory Score: 100.0% (Checks completed: 100.0%) Create a script that creates a new local variable. Name: BEST • Value: School Repo: GitHub repository: alx-system_engineering-devops • Directory: 0x03-shell_variables_expansions • File: 6-create_local_variable ☑ Done! Help Check your code >_ Get a sandbox **QA** Review 7. Global variable mandatory Score: 100.0% (Checks completed: 100.0%) Create a script that creates a new global variable. Name: BEST • Value: School Repo: • GitHub repository: alx-system_engineering-devops • Directory: 0x03-shell_variables_expansions • File: 7-create_global_variable ☑ Done! >_ Get a sandbox **QA** Review Help Check your code 8. Every addition to true knowledge is an addition to human power mandatory Score: 100.0% (Checks completed: 100.0%) Write a script that prints the result of the addition of 128 with the value stored in the environment variable TRUEKNOWLEDGE, followed by a new line.



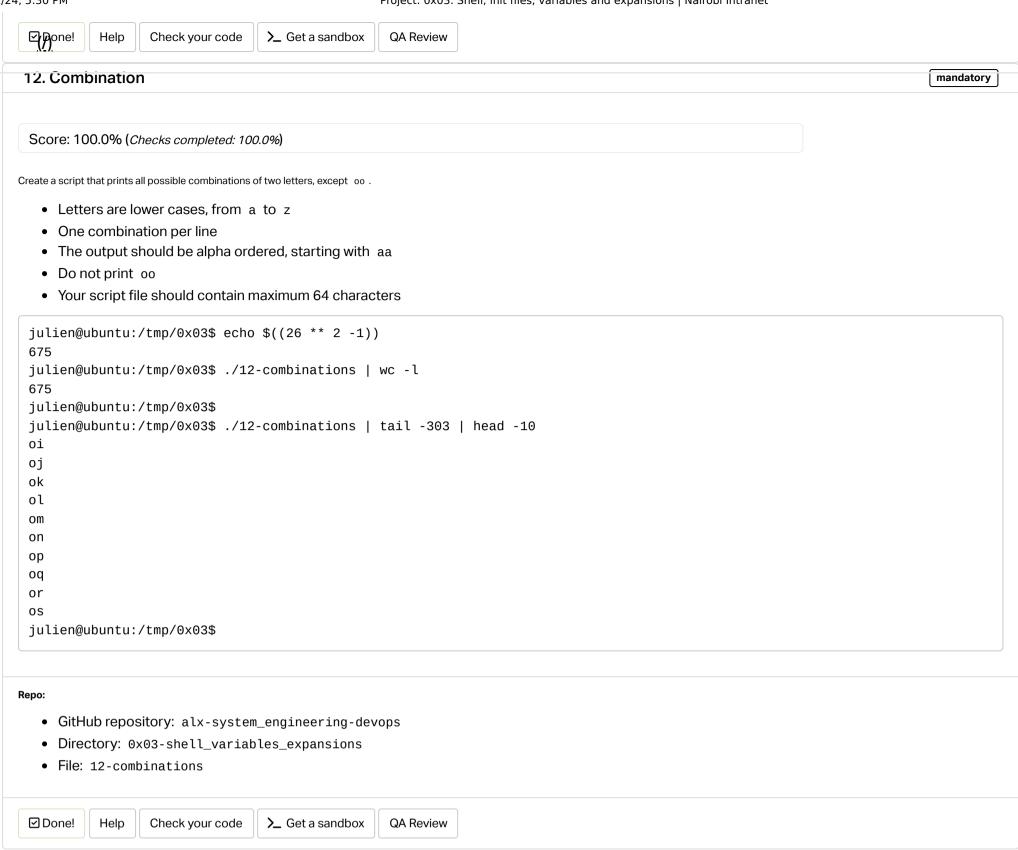
https://intranet.alxswe.com/projects/209 6/11

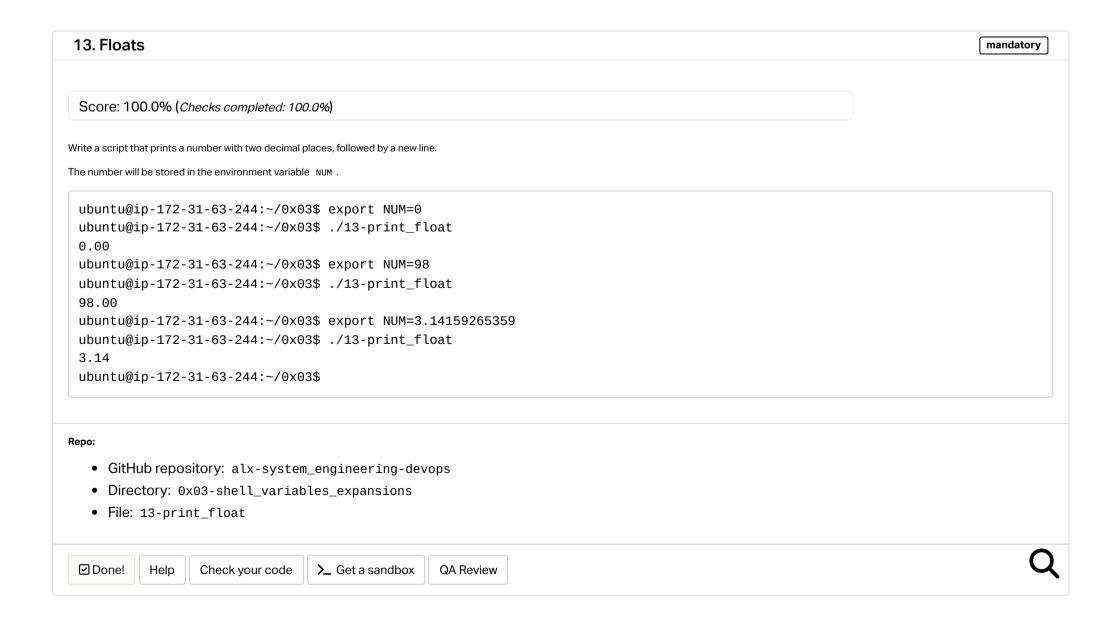






- GitHub repository: alx-system_engineering-devops
- Directory: 0x03-shell_variables_expansions
- File: 11-binary_to_decimal





https://intranet.alxswe.com/projects/209

☑ Done! Help Check your code >_ Get a sandbox **QA** Review

16. The eggs of the brood need to be an odd number

#advanced

Score: 100.0% (Checks completed: 100.0%)

Write a script that prints every other line from the input, starting with the first line.

```
ubuntu@ip-172-31-63-244:/$ \ls -1
 b(/)
 boot
 dev
 etc
 home
 initrd.img
 lib
 lib32
 lib64
 libx32
 lost+found
 media
 mnt
 opt
 proc
 root
 run
 sbin
 srv
 sys
 t
 #t#
 t~
 tmp
 usr
 var
 vmlinuz
 whoareyou
 ubuntu@ip-172-31-63-244:/$ \ls -1 | ./102-odd
 bin
 dev
 home
 lib
 lib64
 lost+found
 mnt
 proc
 run
 srv
 t
 t~
 usr
 vmlinuz
 ubuntu@ip-172-31-63-244:/$
Repo:
```

- GitHub repository: alx-system_engineering-devops
- Directory: 0x03-shell_variables_expansions
- File: 102-odd

☑ Done! Check your code **QA** Review Help >_ Get a sandbox

17. I'm an instant star. Just add water and stir.

#advanced

Score: 100.0% (Checks completed: 100.0%)

Write a shell script that adds the two numbers stored in the environment variables WATER and STIR and prints the result.

- WATER is in base water
- STIR is in base stir.
- The result should be in base bestchol

```
julien@production-503e7013:~$ export WATER="ewwatratewa"
julien@production-503e7013:~$ export STIR="ti.itirtrtr"
julien@production-503e7013:~$ ./103-water_and_stir
shtbeolhc
julien@production-503e7013:~$
```

Repo:

- GitHub repository: alx-system_engineering-devops
- Directory: 0x03-shell_variables_expansions
- File: 103-water_and_stir

Help Check your code >_ Get a sandbox QA Review

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Q