

Bucketlist exercises

- Upload your solution to [Einstein](#) before the deadline.

Exercise 1 : Word calculator (Deadline Sunday 13 March 23:59)

- Jimmy has invented a new kind of calculator that works with words rather than numbers.
- Input is read from `stdin` and consists of up to 1000 commands, one per line.
- Each command is a *definition*, a *calculation* or a *clear*.
- All tokens within a command are separated by single spaces.
- A definition has the format `def x y` where `x` is a variable name and `y` is an integer in the range `[-1000, 1000]`.
- Existing definitions are replaced by new ones i.e. if `x` has been defined previously, defining `x` again erases its old definition.
- Variable names consist of 1-30 lowercase characters.
- No two variables are ever defined to have the same value at the same time.
- The `clear` command erases all existing variable definitions.
- A calculation command starts with the word `calc`, and is followed by one or more variable names separated by addition or subtraction operators.
- The end of a calculation command is an equals sign.
- Write a program called `wordcalc_122.py` that implements Jimmy's calculator.
- The program should produce no output for definitions, but for calculations it should output the value of the calculation.
- Where there is no word for the result, or some word in a calculation has not been defined, then the output should be `unknown`. (The word `unknown` is never used as a variable name.)
- Your solution may only import content from the `sys` module.
- Your solution may not use the `eval()` function.
- For example:

```
$ cat wordcalc_stdin_00_122.txt
def foo 3
calc foo + bar =
def bar 7
def programming 10
calc foo + bar =
def is 4
def fun 8
```

```
calc programming - is + fun =  
def fun 1  
calc programming - is + fun =  
clear
```

```
$ python3 wordcalc_122.py < wordcalc_stdin_00_122.txt  
foo + bar = unknown  
foo + bar = programming  
programming - is + fun = unknown  
programming - is + fun = bar
```

Frequently asked questions

- **Q.** How are bucketlist exercises marked?
- **A.** See [here](#).