Tic-Tac-Toe

Prime Factors

- Write a file divisors.py which contains:
  - a function prime_divisors(n) that returns a prints all prime divisors of n.
  - main function that gets a natural number as an argument and prints all the prime factors of that number.

Prime Factors Test

- Add a doctest to prime_divisors functions which checks both that the functions works on some inputs and raises an exception when n <= 0.

Bytes, Strings and Encodings

Converting bytes to strings and back:

```
>> s = b’Hello\nHow are you’
>> print(s)
b’Hello\nHow are you’
```

Bytes, Strings and Encodings

To convert bytes to strings and strings to bytes, use decode and encode functions:

```
>> b = b'Hello\nHow are you'
>> s = b.decode('ascii')
Hello
How are you
```

Bytes, Strings and Encodings

To convert bytes to strings and strings to bytes, use decode and encode functions:

```
>> s = "שלום, מה שלומך?"
>> b = s.encode('utf-8')
```

subprocess

subprocess module can be used to run external processes.

It’s documentation, as with all the other modules in the standard library can be found on Python’s website.

Prime Factors Subprocess

- Write a file divisors_external.py which runs divisors.py in a separate process and prints all the divisors of 152647.

- Hint: use the subprocess module.

- Bonus: extend divisors_external.py to print all the prime factors of every number in stdin (assume that every line in stdin contains a number).

Files

```
with open(filename, mode='rb') as fl:
    content = fl.read()
```

```
with open(filename, mode='rt') as fl:
    content = fl.readlines()

with open(filename, mode='wt') as fl:
    fl.write(content)
```

Exercise: grep

- Write python file grep.py which gets two parameters: path and regular expression.
- When grep.py is executed, it should walk through all files in the the directory tree of the path and for every file print all the lines that match the regular expression.
- Hints:
  - Use os.walk function to walk through a directory tree.
  - Use re module to find regular expressions.

Parallel Grep