

HW3

M2IF SCR1

Molecular Programming

07.11.2019 - Due on **Wed 13/11** before 12:00.
You may work by teams of 2-3 people (make sure to write all your names)



You are asked to complete Exercise 1 and to send me your solutions to:
nicolas.schabanel@ens-lyon.fr
as a PDF file named **HW3-Lastname.pdf** on **Wed 13/11** before 12:00.
You may work by teams of 2-3 people (make sure to write all your names).

■ **Exercise 1 (Design an Origami).** Use `cadnano` and `CanDo` to design an Origami.

Getting the softwares. First, you will need the following softwares:

1. Download and compile the latest `cadnano` from:

<https://cadnano.org/>

Please read carefully the instructions in

<https://cadnano.org/license.html#download>

You may also want to use `cadnano 2.5` using:

```
git clone git@github.com:cadnano/cadnano2.git
```

or simply run the command:

```
pip3 install cadnano
```

You may need to install `PyQt5` first, run the command:

```
pip3 install pyqt5
```

2. Register for free to use `CanDo` at:

<http://cando-dna-origami.org/registration/>

► **Question 1.1)** Pick your favorite "pixelized" shape and design it as a DNA Origami. You might take inspiration from:

<http://www.dna.caltech.edu/Papers/DNAorigami-nature.pdf>

1. Design your 2D DNA origami using `cadnano`
2. Check your design using `CanDo` (is it flat?)
3. Repeat 1.-2. until it is flat
4. Add some 3D stuff to your DNA origami!