Python Hackathon 2019

```
[print('',x, end='\t') for x in "Hello World"];print()
[print(ord(x), end='\t') for x in "Hello World"];print()
```

```
>>> H    e    l    l    o         W    o    r    l    d
>>> 72   101  108  108  111  32   87   111  114  108  100
```

King's College London Health Science DTC

2019 01 14

Our goals for today

- Use the time today to **code together** and **exchange ideas and experiences**.
- Learn more about **how Python is used**.
- Using the **group effort to solve a set of computational biology orientated problems**.

- A group of experienced programmers (Joseph, Mat and Paul) will be available to help during the session.

Our goals for today

This is a first time Python Hackathon event organized by King's HSDTC, thus were are interested in the following:

- **Scientific background** and **level of coding experience**?
- What **types of problem** (algorithmic design, data analysis) would interest you in the future?

Coding challenges for today

We will attempt at solving a given set of problems through using:

- **Fundamental concepts of Python.**
- **Python-specific libraries.**

Coding challenges for today

Algorithmic thinking:

- **Problem 1** - Counting DNA Nucleotides
- **Problem 2** - Calculating Protein Mass
- **Problem 3** - Finding a Motif in DNA
- **Problem 4** - Rabbits and Recurrence Relations

- Remind yourselves of *sets*, *list functions*, *list comprehensions*, *dictionaries*, *recursive functions*, *I/O inputs and function definitions*.

Coding challenges for today

Automated data analysis task:

- **Problem 5** - Automated submission of analyses to online servers

- Develop your own strategy, interact with *Application Programming Interface (API)* and dwelve into the world of *stackoverflow* and use your *"imagination"* :)

Happy Coding!

- General information about the Hackathon:
  `https://khsdtc.github.io/Hackathon2019/`
- Coding problems are placed at:
  `https://github.com/KHSDTC/Hackathon2019_Problems`