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## **Good practices in writing code:** Object-oriented versus Procedural programming

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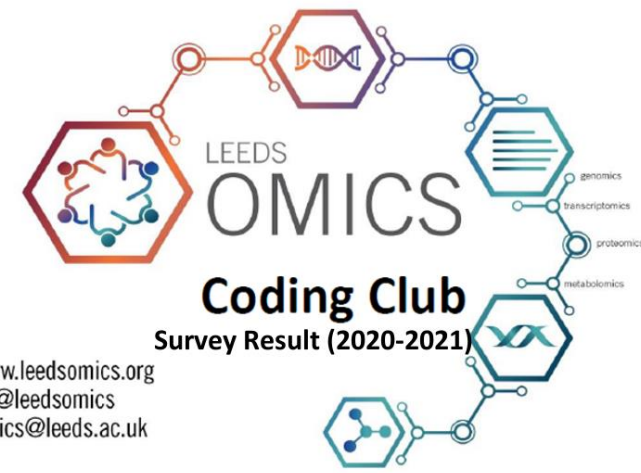
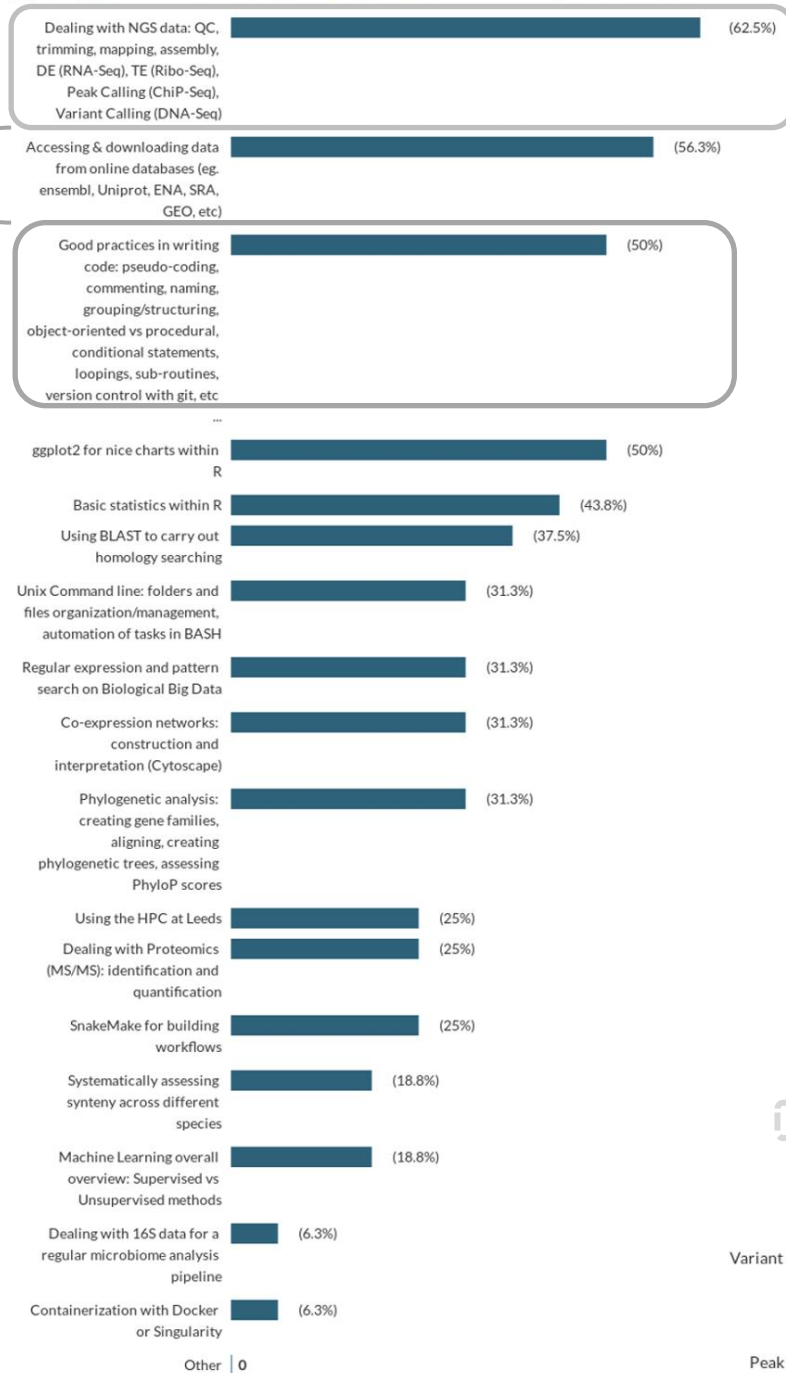
# Topics to be addressed on the 2020-21 season - Survey Result

1st, 4th, 6th, 8th, ... sessions

2nd session

3rd, 5th, 7th, 9th, ... sessions

## 1 Which of the following topics would you like to attend in our Coding Club sessions?



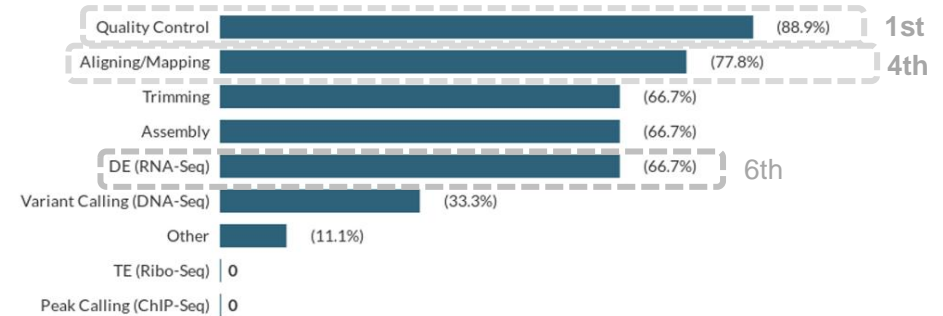
## 1.b Do you think we should address "Good practices in writing code" topic in more sessions?



## 1.c Do you think we should address "Dealing with NGS data" topic in more sessions?



## 1.c.i Which sub-topics would be of most interest to you?



# Procedural (or structured) - vs - OOP

## Procedural Programming:

Procedural Programming can be defined as a programming model which is derived from structured programming, based upon the concept of calling procedure. Procedures, also known as routines, subroutines or functions, simply consist of a series of computational steps to be carried out. During a program's execution, any given procedure might be called at any point, including by other procedures or itself.

## Languages used in Procedural Programming:

FORTRAN, ALGOL, COBOL,  
BASIC, Pascal and C.

## Object Oriented Programming:

Object oriented programming can be defined as a programming model which is based upon the concept of objects. Objects contain data in the form of attributes and code in the form of methods. In object oriented programming, computer programs are designed using the concept of objects that interact with real world. Object oriented programming languages are various but the most popular ones are class-based, meaning that objects are instances of classes, which also determine their types.

## Languages used in Object Oriented Programming:

Java, C++, C#, Python,  
PHP, JavaScript, Ruby, Perl,  
Objective-C, Dart, Swift, Scala.

# Procedural (or structured) - vs - OOP

Procedural Oriented Programming	Object Oriented Programming
In procedural programming, program is divided into small parts called <i>functions</i> .	In object oriented programming, program is divided into small parts called <i>objects</i> .
Procedural programming follows <i>top down approach</i> .	Object oriented programming follows <i>bottom up approach</i> .
There is no access specifier in procedural programming.	Object oriented programming have access specifiers like private, public, protected etc.
Adding new data and function is not easy.	Adding new data and function is easy.
Procedural programming does not have any proper way for hiding data so it is <i>less secure</i> .	Object oriented programming provides data hiding so it is <i>more secure</i> .

## Object-Oriented Programming (OOP) Vocabulary

### **Class**

a blueprint which is consisting of methods and attributes.

### **Object**

an instance of a class. It can help to think of objects as something in the real world like a yellow pencil, a small dog, a yellow shoe, etc. However, objects can be more abstract.

### **Attribute**

a descriptor or characteristic. Examples would be colour, length, size, etc. These attributes can take on specific values like blue, 3 inches, large, etc.

### **Method**

an action that a class or object could take.

Bring your issues on!