**Course: Advanced Bioinformatics**

**Module title: Programming Languages**

**Module no. : 189**

What is language? Way of communication between two persons.

Programming Language? Way of communication between a computer and humans.

Computer programming languages: There are 1000s of these languages. How can we categorize them. One categorization is based on their syntax, i.e. if they are more close to humans understanding they are called high level languages, on the other hand; if they are more close to computing machines they are called high level machine languages. Let’s look into these one by one.

Machine Language: Set of primitive instructions built into every computer. Computer can understand only binary code, i.e. text written in the form of 0s and 1s. It means it is very difficult for humans to read & modify this type of code. For example to add two numbers, we have to generate the following code.

1101101010011010

Assembly Language: Developed to make programming easier. It is in middle of machine language and high level language.

For example if we want to add two numbers, code would be something like ADDF3 R1, R2, R3 which looks more comprehendible as compared to the machine language code.

High Level Languages: English-like and easy to learn and program. A high-level language statement that computes the area of a circle with

Radius 5: area = 5 \* 5 \* 3.1415