Bioinformatics: an overview for cancer research

Assignment1:Abstract and Introdiction summary

abstract:

Bioinformatics is a new science that is glowing out in the recent years. It is a multidisciplinary science that is made out of different kinds of other scientific fields like biology, computer science, chemistry, statistics, mathematics and others.

It was a big challenge for researchers to describe this new field in a systematic scientific way and bring out the attention of its applications and services; one of these important services that Bioinformatics can be applied in, is the cancer studies, research and therapies for many beneficial reasons.

This paper will give a clear glance overview of bioinformatics, its definition, aims, applications, technologies, the large amount of data produced in the biological field and how bioinformatics can organize, analyze and store them, discuss some algorithms that can be implemented over bioinformatics data, and how to apply bioinformatics to discover and diagnose diseases like cancer.

Key Words: Bioinformatics, Computational Biology, Cancer.

Introdiction:

Bioinformatics is a new multidisciplinary field that comes out from the combination of other sciences and fields like biology, computer science, statistics, chemistry, mathematics and even more3, 6, 8, 9, 14, 15, 16, 17 .

In recent years new sciences have risen up due to the demand in understanding more the world around us like Bioinformatics, Biotechnology, Computational Biology, Biochemistry and others. It was a big challenge for researchers and scientists to give an adequate definition for each of these newly emerged sciences5, 9, 18.

One of these sciences that have a huge influence in the medical field is Bioinformatics but also can play a key role in other fields like agriculture, livestock and even space explorations1, 19. Bioinformatics which attracts people in the academic field in addition an interest to those in the medical industry4, 15, 20, 21.

There were many contributions to define and explain Bioinformatics in scientific ways, but all researchers agree that it is a combination of Biology, Computer Science, Statistics and Mathematics. Each one of these disciplines is playing an important role for collecting, organizing, analyzing and digitizing the biological data.

This paper will target four categories of readership who are intereste in the field. (1) Students who are interested in studying this new field. (2) Instructors who would like to prepare a fundamental course to teach in bioinformatics. (3) Researchers who would like to understand more about Bioinformatics and the relationship with cancer. (4) Experts in the medical field who are interested in implementing the understanding of this field in the medical life.

Assignment2:related work summary

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