Objective & Scope of the Study

This study aims to analyze tandem repeat patterns, finding more patterns with new techniques, because repeat patterns have many applications like detection of genetic diseases, the classification of DNA sequences, the prediction of RNA and protein tertiary structures, the understanding of protein evolution, and rational drug design. With the development of biotechnology, more and more biological data is collected and available for analysis. One example is the GenBank and Proteins data from NCBI (National Center for Biotechnology Information). There is huge amount of data available, including DNA sequences, RNA sequences and protein sequences of all different species. And not much is known about this data. How can one extract the most interesting and knowledgeable patterns from that data which may guide us to more discoveries is an interesting task.

The main Objectives are:-

- The main objective of this research is to define a problem to find the complete tandem repeat patterns in DNA sequences, which can give the biologists a better view of all the interesting repeating patterns.

- Emphasis on tandem repeat finding problem

- Refine the problem to find the complete set of tandem repeat patterns and analyze the problem

- Investigate the properties that the tandem repeat patterns

- Propose algorithms and to find similar patterns.

- To find the complete set of interesting repeat patterns without previous domain knowledge about the patterns.