**Mansoura University**



**Faculty of Computers and Information**

**Department of Computer Science**

**Project Proposal**

# Arabic Title

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##### English Title

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### **Submitted by:**

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## Project Abstract:

* *k*-mer counting involves counting the number of substrings that have length *k* in a string *S*, or a set of strings, where *k* is a positive integer.
* *Counting k*-mers is an essential component of many methods in bioinformatics, including for genome and transcriptome assembly, for metagenomic sequencing, and for error correction of sequence reads.

## Project Objectives:

* Set operations are faster, easier, and there are a lot of readily-available algorithms and techniques to work with them.
* Simplifies bioinformatics to counting and comparing whether things are there or not.

Who are the project **competitive**? and how will your project be **different**?

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Tools, Hardware and Software Resources:

**Tools :-**

**Software:-**

**Hardware:-**

SCHEDULING PHASES:

|  |  |  |
| --- | --- | --- |
| **From** | **To** | **Activity** |
| **PHASE 0** | **PHASE 1** | DEFINING THE K-MERS COUNTING WEBSITE |
| **PHASE 1** | **PHASE 2** | BUILDING UP THE KMERS COUNTING WEBSITE |
| **PHASE 2** | **PHASE 3** | PROBLEMS SOLVED BY KMERS COUNTING METHODS |
| **PHASE 3** | **PHASE 4** | PROBLEM SOLVING PHASE |
| **PHASE 5** | **PHASE 6** | ERROR DETECTION AND CORRECTION |
| **PHASE 6** | **PHASE 7** | RUNINNG THE CODE |

References:

[**https://www.oreilly.com/library/view/data-algorithms/9781491906170/ch17.html**](https://www.oreilly.com/library/view/data-algorithms/9781491906170/ch17.html)

<https://www.researchgate.net/publication/325886216_K-mer_Counting_for_Genomic_Big_Data> from Big Data book 2018