**PROJECT REPORT**

***National University of Computer and Emerging Sciences and Technology***



Course-Code: EE-213

Parallel Distributed Computing

**PROJECT : Genetics Algorithm**

Group Members:

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**About The Project:**

A genetic algorithm is a search heuristic that is inspired by Charles

Darwin’s theory of natural evolution. This algorithm reflects the

process of natural selection where the fittest individuals are selected

for reproduction in order to produce offspring of the next generation.

**EXPLANATION:**

The process of natural selection starts with the selection of fittest

individuals from a population. They produce offspring which

inherit the characteristics of the parents and will be added to the

next generation. If parents have better fitness, their offspring will

be better than parents and have a better chance at surviving. This

process keeps on iterating and at the end, a generation with the

fittest individuals will be found.

**RESULT:**

Based on the 5 Programs i ran i came up with the following results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | String Length | Generations(Parallel) | Fitness Value (Parallel) | Generations(series) | Fitness Value (Series) |
| 1 | 24 | 60 | 0 | 326 | 0 |
| 2 | 56 | 728 | 13 | 5623 | 21 |
| 3 | 664 | 12256 | 413 | 192324 | 456 |

### Graphs:

Based on the graph we can notice that with generations the rate of change of Fitness Decreases.

