# VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

# BELAGAVI - 590018

A PROJECT REPORT ON

# "IMPLEMENTATION OF DNA CRYPTOGRAPHY IN CLOUD COMPUTING"

Submitted in partial fulfilment of the award of Degree of

**BACHELOR OF ENGINEERING**

**IN**

**COMPUTER SCIENCE & ENGINEERING**

**By**


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# ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## CERTIFICATE

This is to certify that the Project work entitled *"IMPLEMENTATION OF DNA CRYPTOGRAPHY IN CLOUD COMPUTING"* has been successfully completed by

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The bonafide students **of Department of Computer Science and Engineering, Alva's Institute of Engineering and Technology** in partial fulfilment of the requirements for the award of **BACHELOR OF ENGINEERING in DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year **2018-2019**. It is a certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said Degree.

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# ABSTRACT

This paper proposes a new technique for DNA cryptography that uses dynamic DNA sequence table to enhance the level of security. While handling with secure data, the requirements like compression, speed-up computation and processing etc are crucial issues. Bio-molecular DNA features possess the capability to cope up with these requirements. Existing DNA cryptographic techniques usually consider fixed DNA sequence table i.e., DNA bases and thereby the security is suspected to be breached by the intruder. To overcome this limitation, the proposed technique considers dynamic sequence table that assigns random ASCII characters to DNA sequence table initially. Then a finite number of iterations are applied based on a mathematical series where in every iteration the positions of ASCII characters are changed dynamically in the sequence table. ciphertext is processed through genomic conversion. Finally, it is converted into compressed ciphertext. At last, the time requirements for encoding-decoding and encryption-decryption are evaluated and comparisons with other DNA techniques are presented.