**GIRRAJ GOVERNMENT COLLEGE (A),**

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**A**

**PROJECT REPORT**

**ON**

**“DESIGNING SECURE AND EFFICIENT BIOMETRIC BASED ACCESS MECHANISM FOR CLOUD SERVICES”**

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**ABSTRACT**

The demand for remote data storage and computation services is increasing exponentially

in our data-driven society; thus, the need for secure access to such data and services. In this

paper, we design a new biometric-based authentication protocol to provide secure access to a

remote (cloud) server. In the proposed approach, we consider biometric data of a user as a

secret credential. We then derive a unique identity from the user’s biometric data, which is

further used to generate the user’s private key. In addition, we propose an efficient approach

to generate a session key between two communicating parties using two biometric templates

for a secure message transmission. In other words, there is no need to store the user’s private

key anywhere and the session key is generated without sharing any prior information. A

detailed Real-Or- Random (ROR) model based formal security analysis, informal (nonmathematical)

security analysis and also formal security verification using the broadlyaccepted

Automated Validation of Internet Security Protocols and Applications (AVISPA)

tool reveal that the proposed approach can resist several known attacks against

(passive/active) adversary. Finally, extensive experiments and a comparative study

demonstrate the efficiency and utility of the proposed approach.