

A New Efficient Approach to Store Data in a Cloud Server

Hussein Shirvani

Pervasive and Cloud Computing Lab
University of Birjand, Birjand, Iran
hussein.shirvani.1992@ieee.org

Hamed Vahdat-Nejad

Pervasive and Cloud Computing Lab
University of Birjand, Birjand, Iran
vahdatnejad@birjand.ac.ir

Presenter: Hamed Vahdat-Nejad

Fall 2014

Outline

- Introduction
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- Proposed Approach
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- References

Introduction

- Cloud Computing:
 - One of the advanced topics in Computer Science
 - has numerous impact in industry
 - Provide on-demand services
- Three major models of Cloud:
 - Infrastructure as a Service (IaaS)
 - Platform as a Service (PaaS)
 - Software as a Service (SaaS)
- Different Clouds:
 - Private
 - Public
 - Hybrid

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Introduction

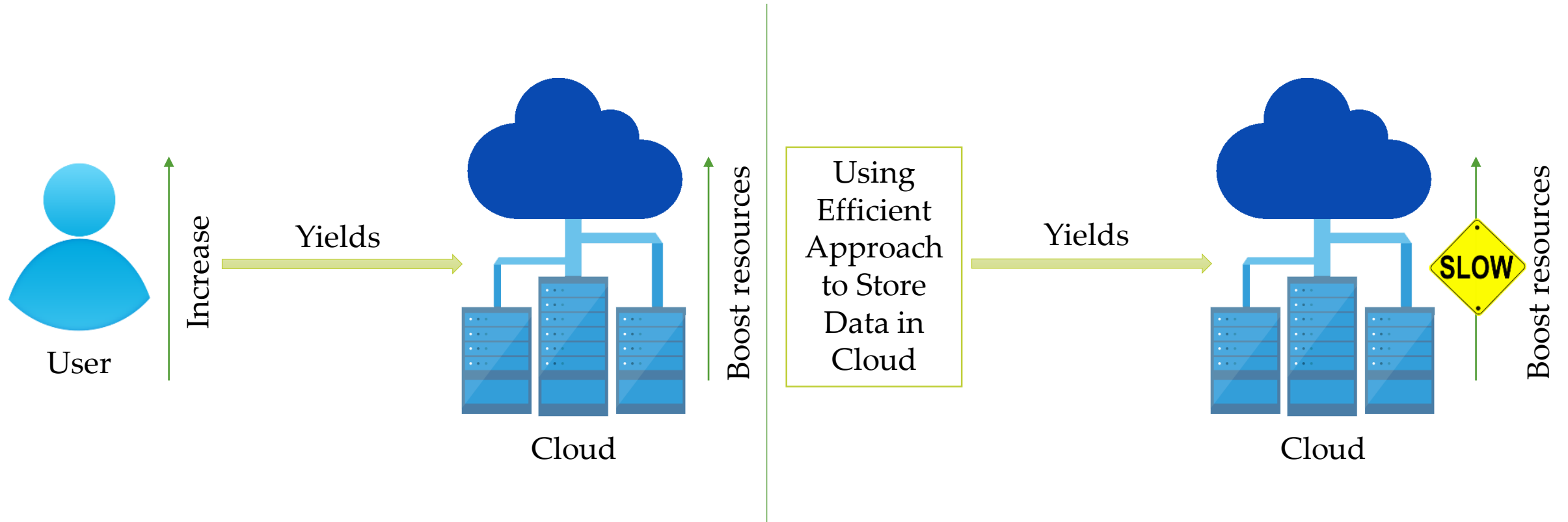
- Our approach is in Storage as a Service domain



Public Cloud
Example

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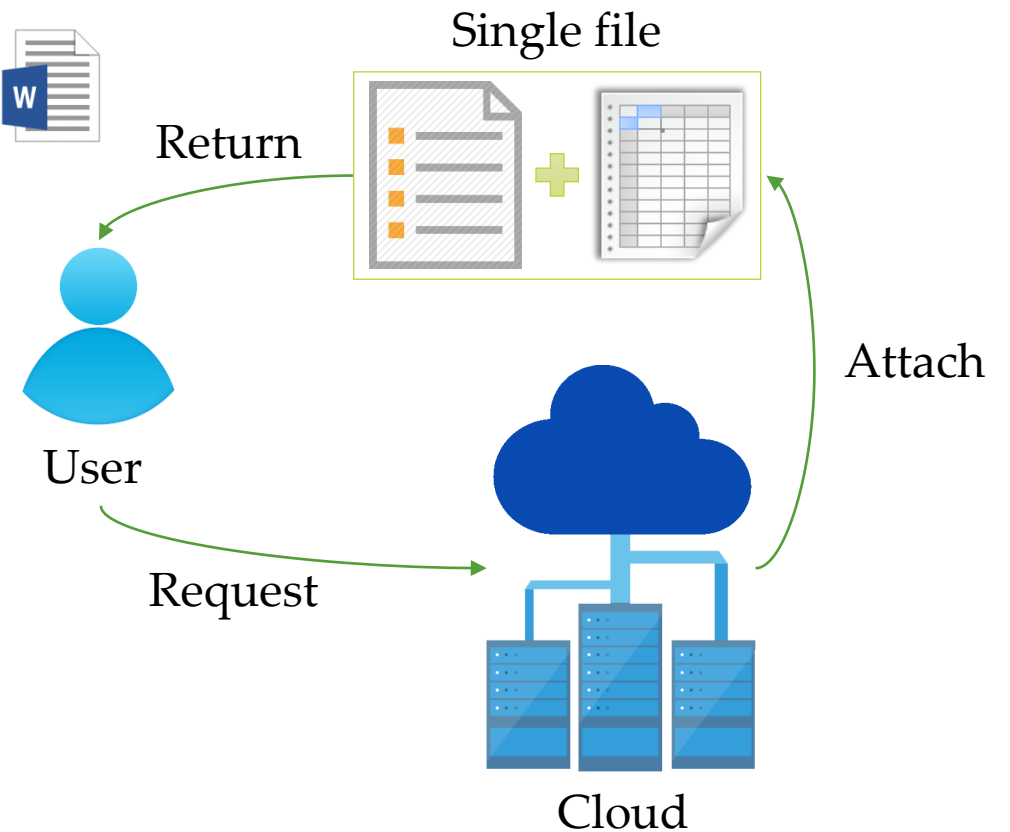
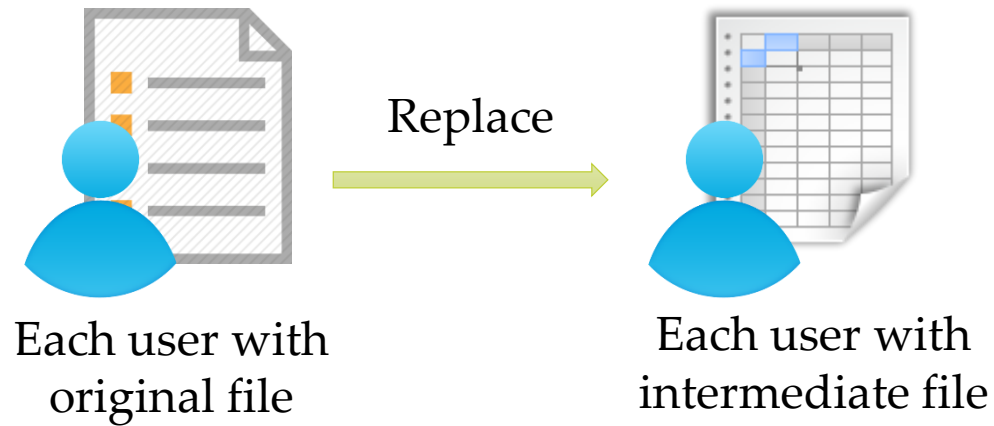
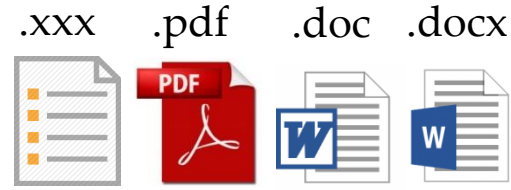
Problem Statement



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Proposed Approach

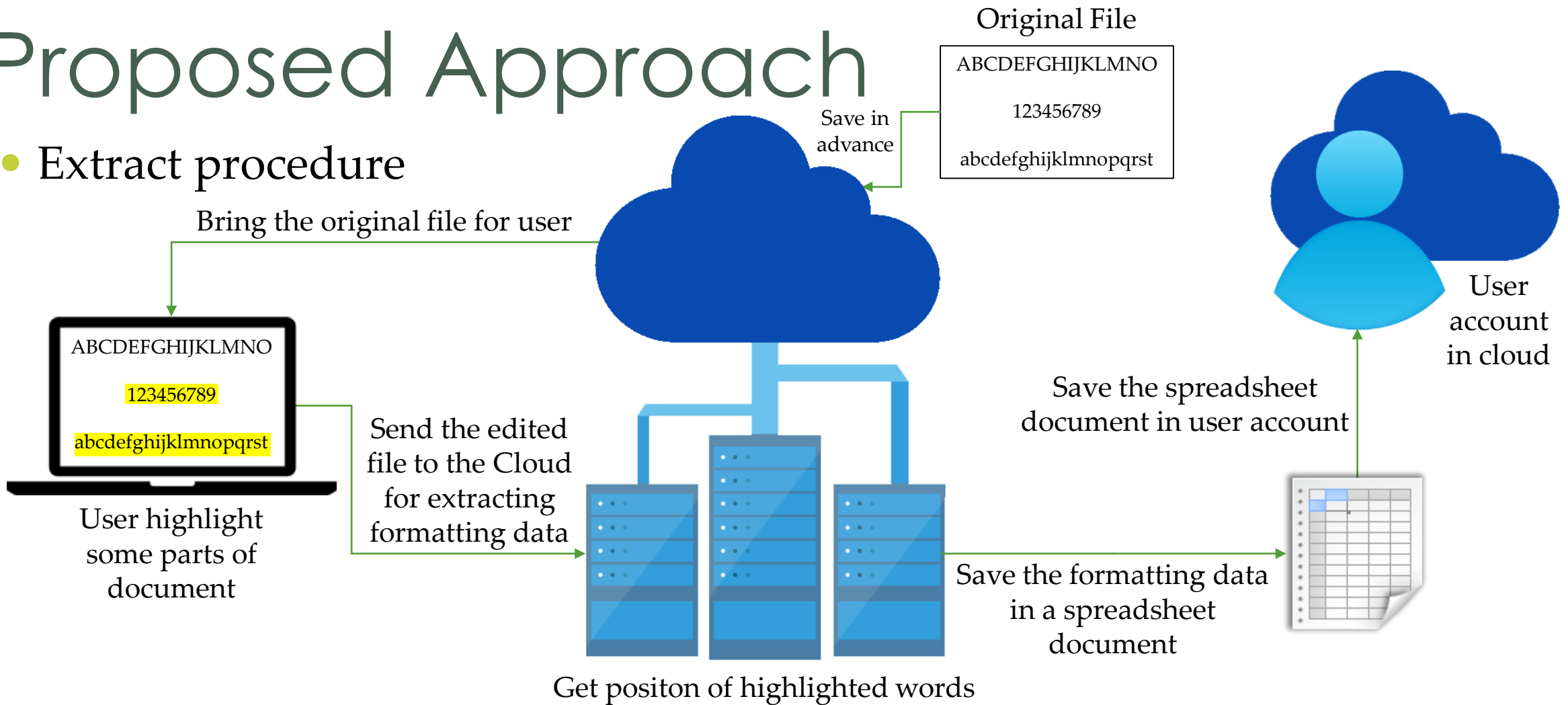
- Applicable to any text files



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Proposed Approach

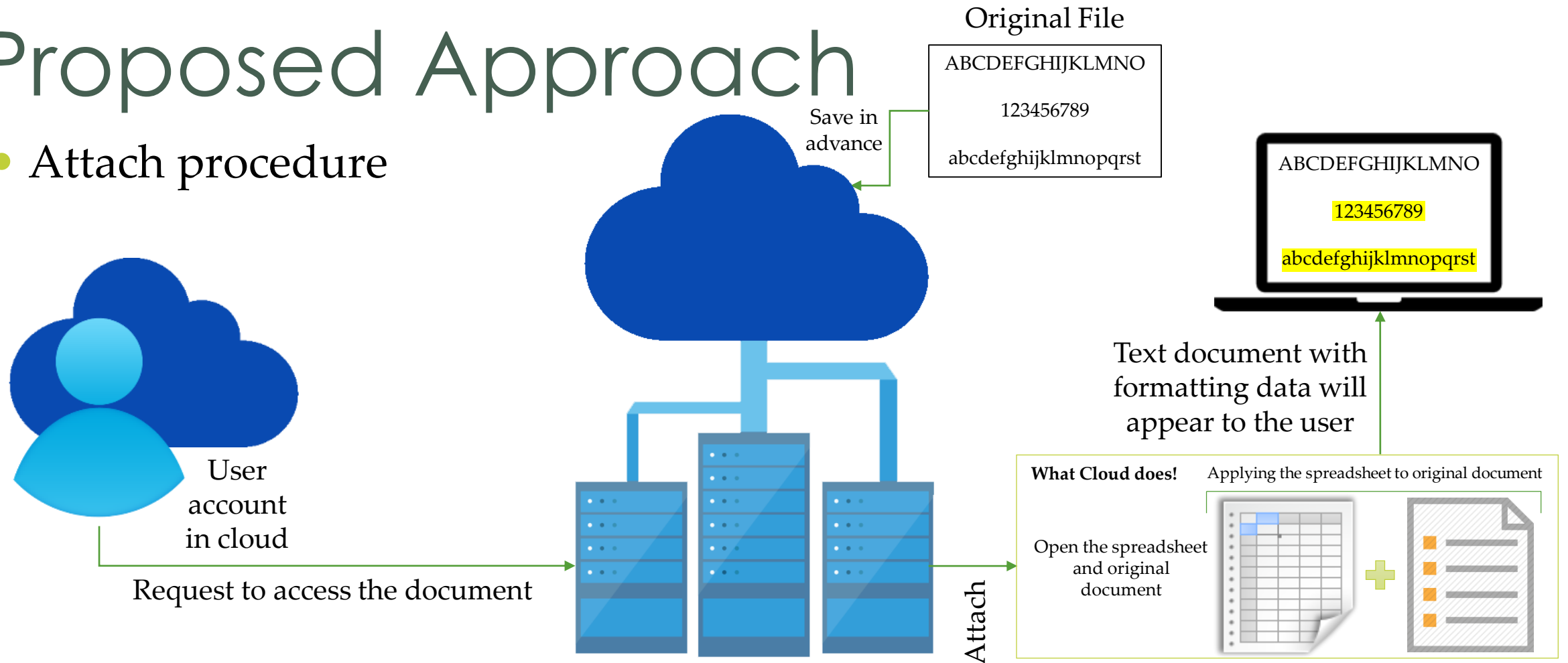
- Extract procedure



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Proposed Approach

- Attach procedure



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Implementation

- Implementing required application using Microsoft C#™
- Microsoft C#™ has various libraries for manipulating Microsoft Office™ family file formats
- Choosing Microsoft Word document as Text document
- Choosing Microsoft Excel document as Spreadsheet document

Evaluation

- Traditional Approach: 50 users save a common file with 2.5MB size in their account
- Proposed Approach: 50 users access a common document file with 2.5MB size and Cloud server save an intermediate file for each user in his/her account
 - Scenario A: the original document will be highlighted in a normal way
 - Scenario B: the entire of the original document will be highlighted

Results of Scenario A (Average-Case)

Traditional Approach		Proposed Approach	
Original file size	Total file size for 50 users	Intermediate file size	Total file size for 50 users
2509 KB	125450 KB	22 KB	3609 KB

Table 1:
Comparison of Traditional Approach and Proposed Approach in Average - Case

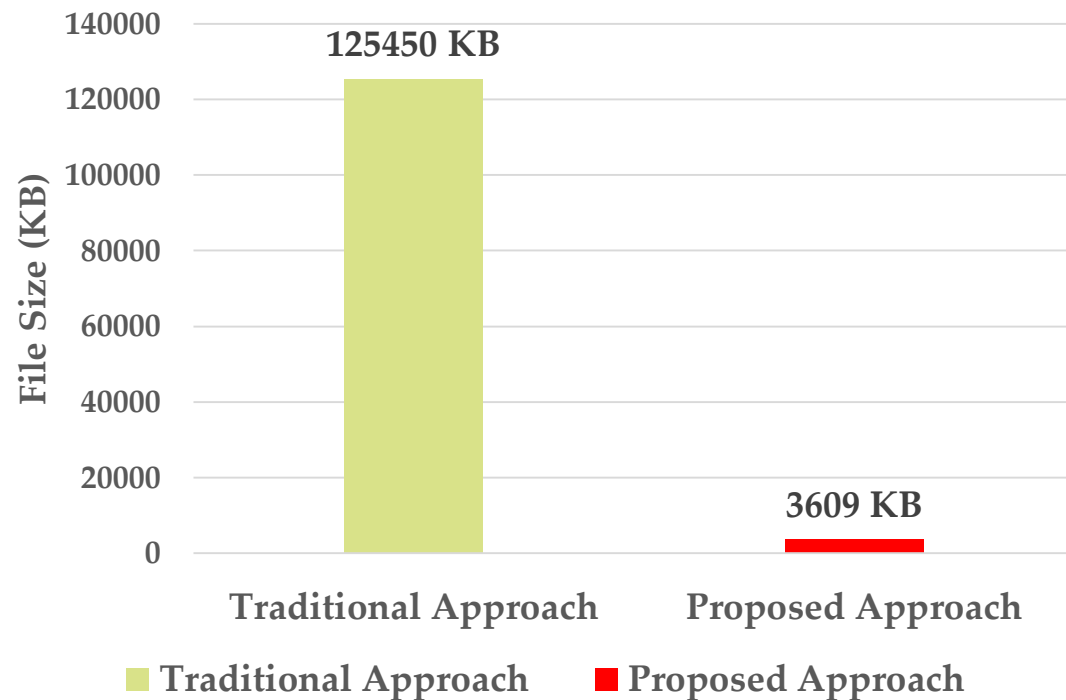
Results of Scenario B (Worst-Case)

Traditional Approach		Proposed Approach	
Original file size	Total file size for 50 users	Intermediate file size	Total file size for 50 users
2509 KB	125450 KB	440KB	24509KB

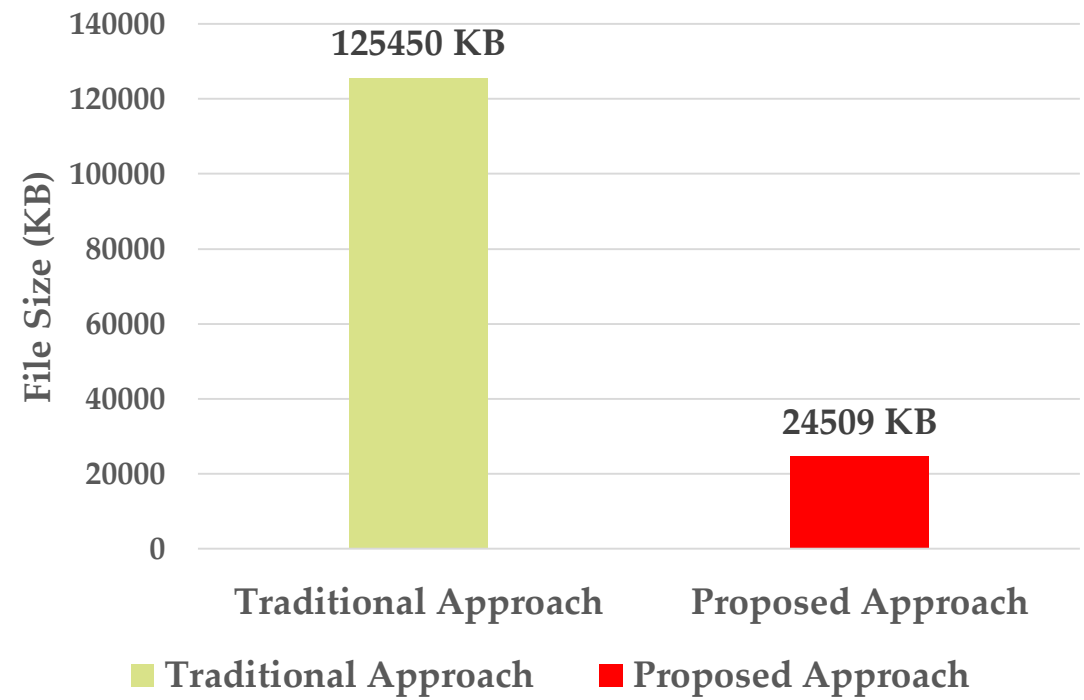
Table 2:
Comparison of Traditional Approach and Proposed Approach in Worst - Case

Evaluation

Scenario A (Average – Case)



Scenario B (Worst – Case)



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Evaluation

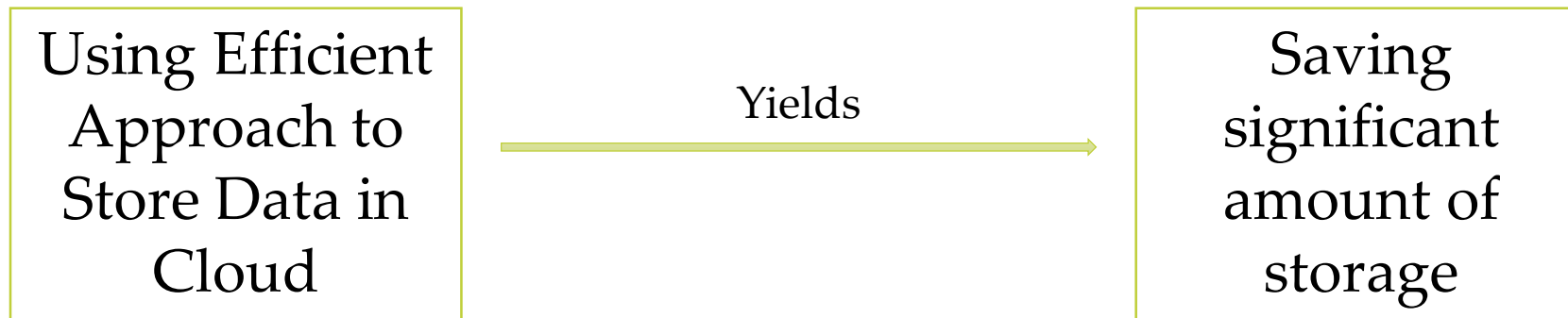
- We define efficiency as follows:

$$\text{Efficiency} = 1 - (\text{PA Result} / \text{TA Result})$$

Original file size	Efficiency in average-case	Efficiency in worst-case
2509KB	0.971	0.804

Table 3:
Result of Comparison in terms of Efficiency

Conclusion



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References

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Thank You

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