

# A New Efficient Approach to Store Data in a Cloud Server

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# Outline

- Introduction
- Problem Statement
- Proposed Approach
- Implementation
- Evaluation
  - Results of Scenario A
  - Results of Scenario B
- Conclusion
- 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

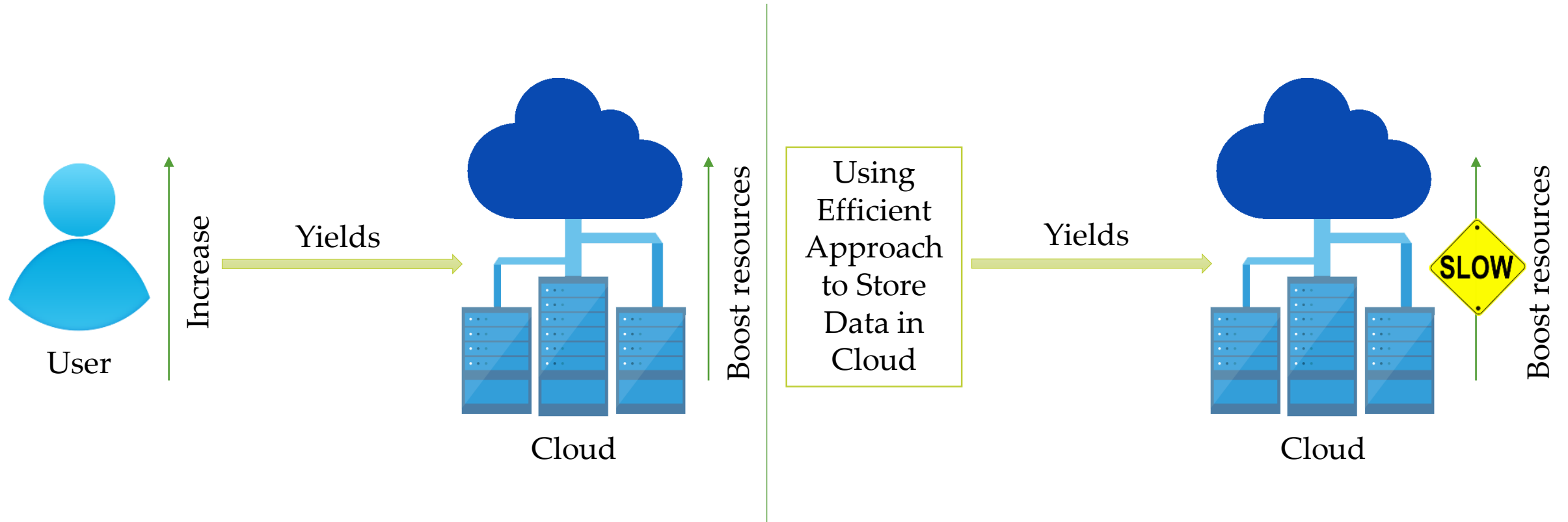
- Our approach is in Storage as a Service domain



Public Cloud  
Example

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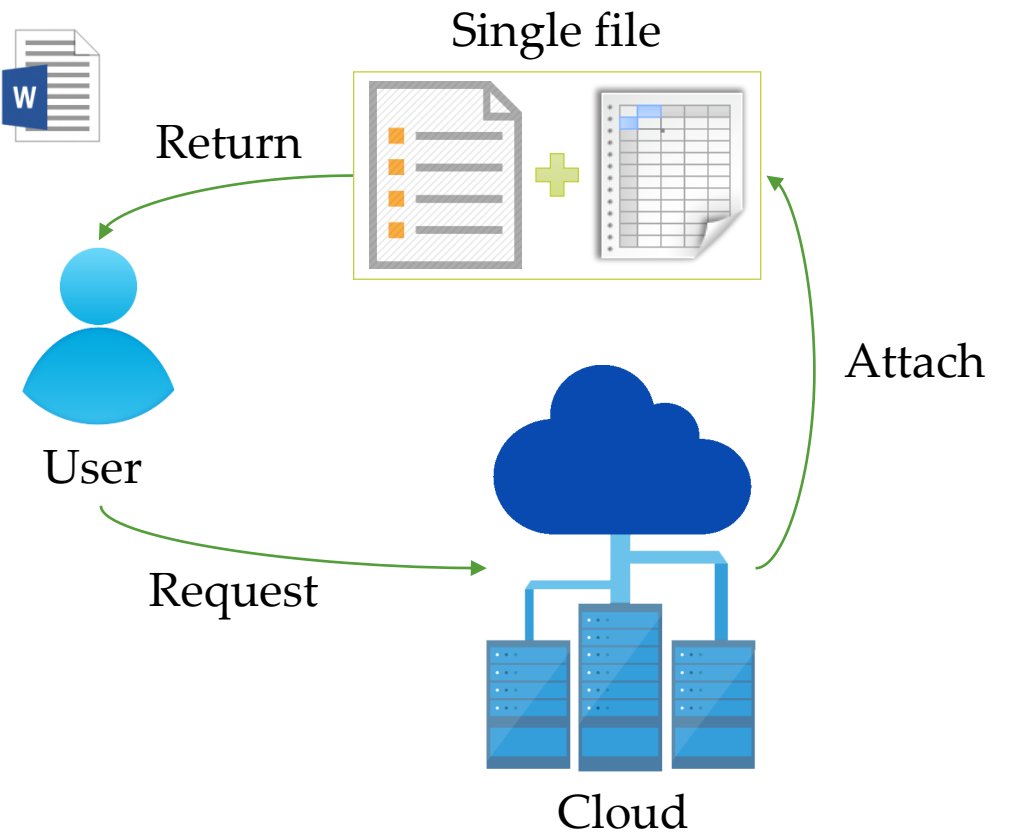
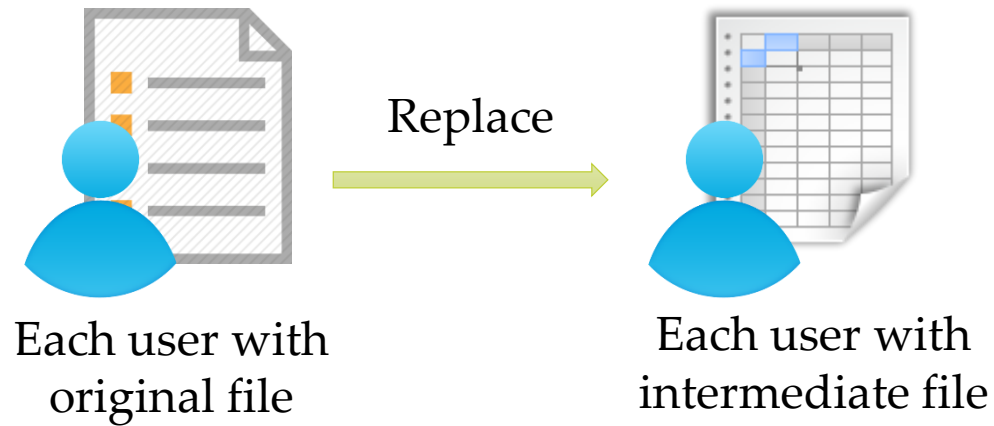
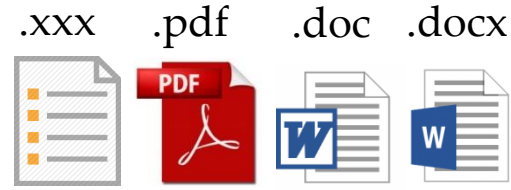
# Problem Statement



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# Proposed Approach

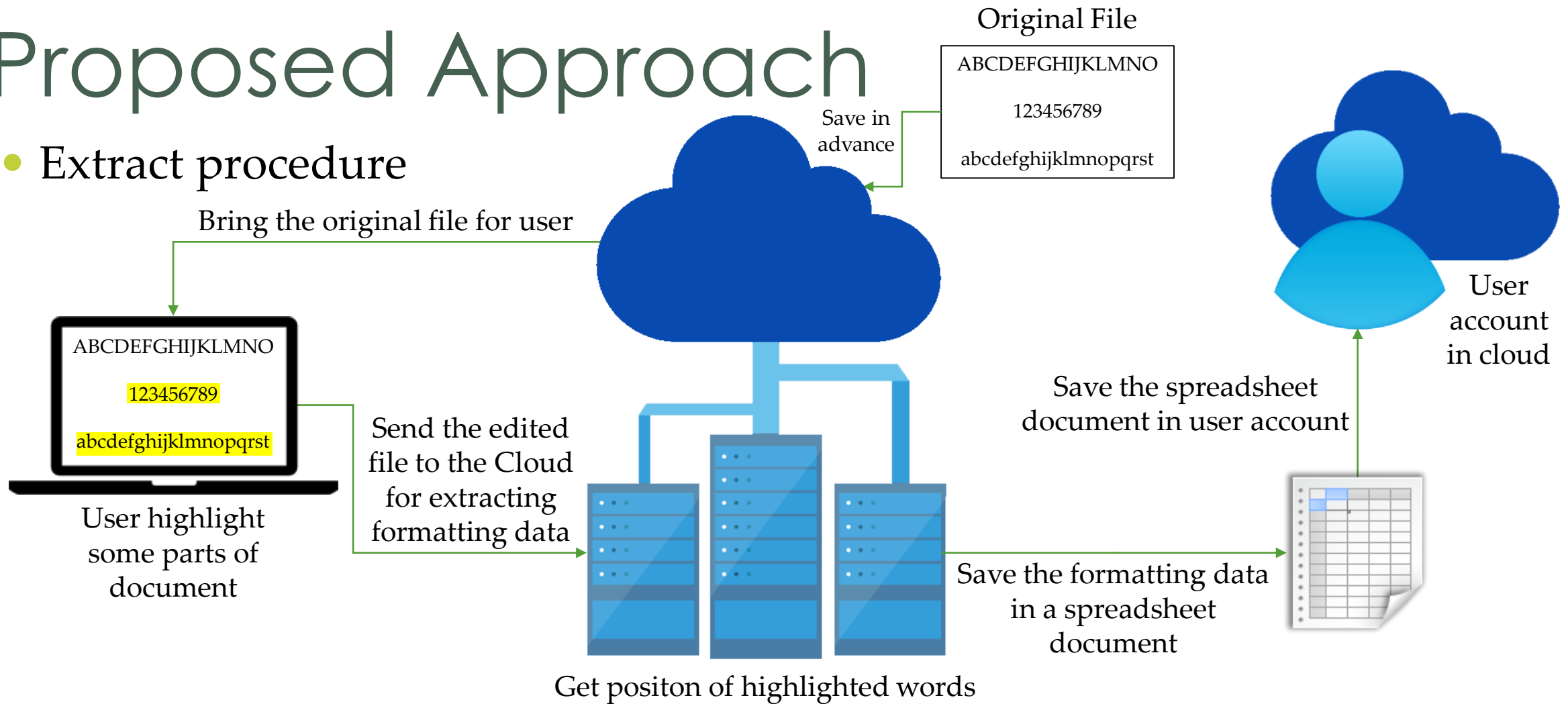
- Applicable to any text files



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# Proposed Approach

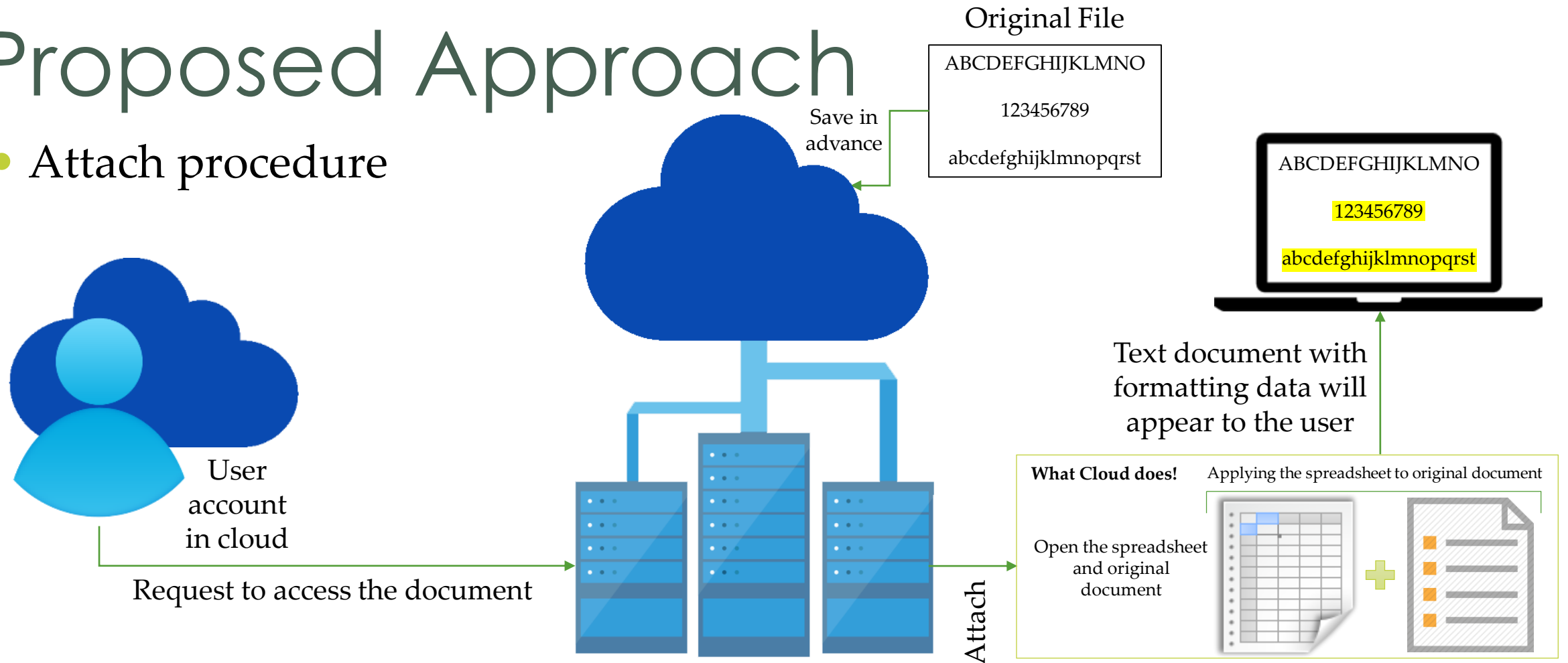
- Extract procedure



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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

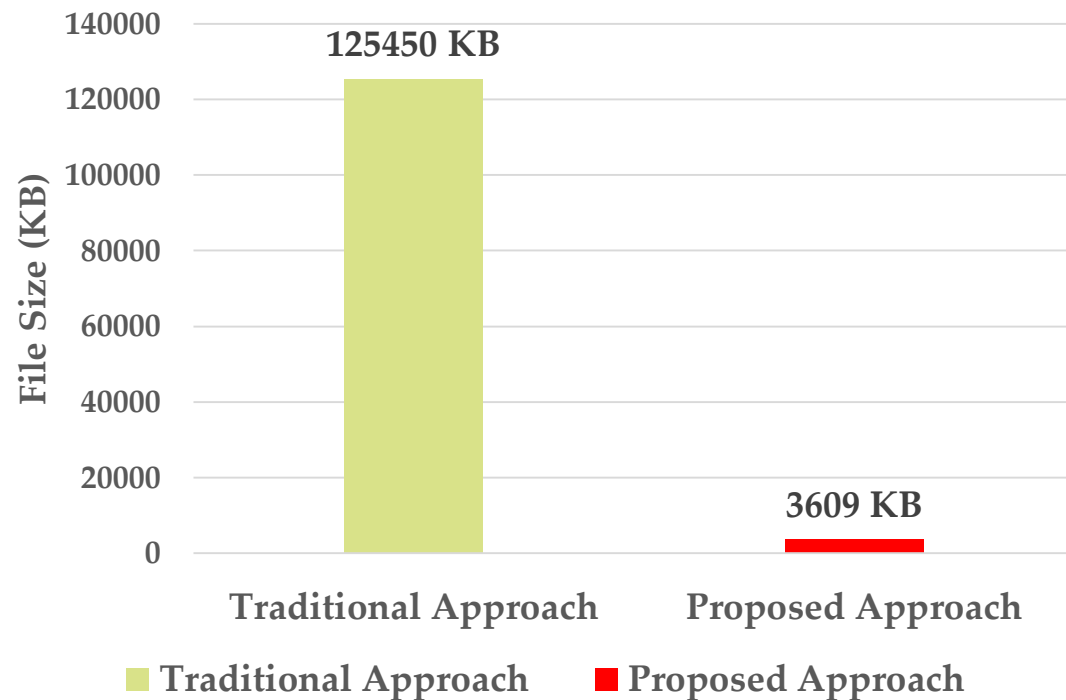
# Results of Scenario B (Worst-Case)

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

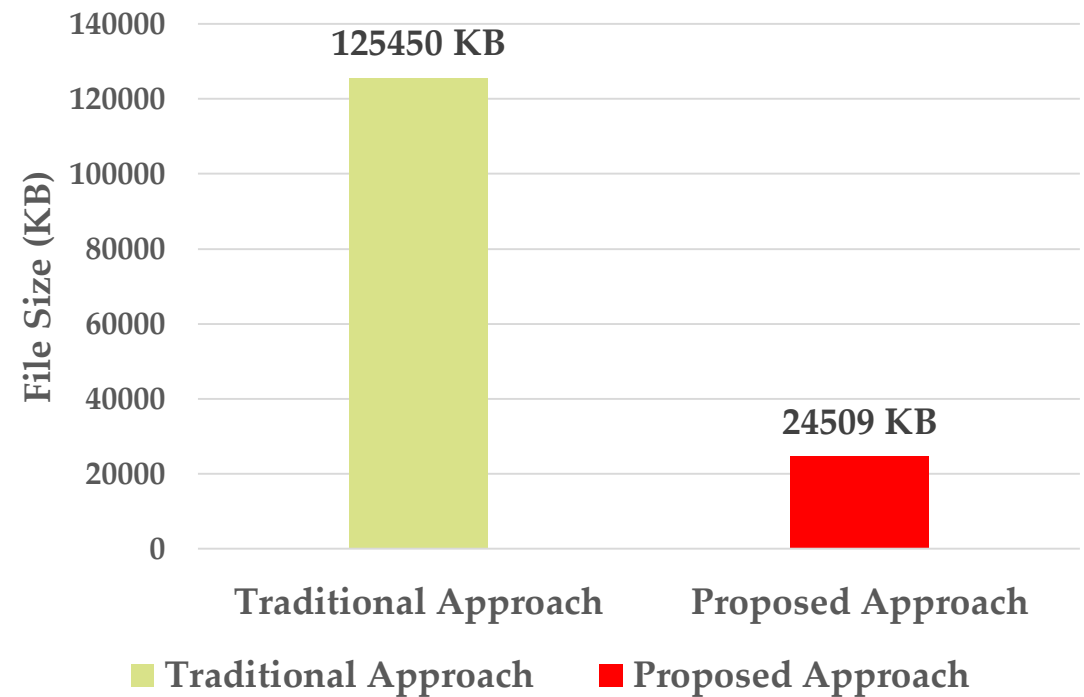
Table 2:  
Comparison of Traditional Approach and Proposed Approach in Worst - Case

# Evaluation

## Scenario A (Average – Case)



## Scenario B (Worst – Case)



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# Evaluation

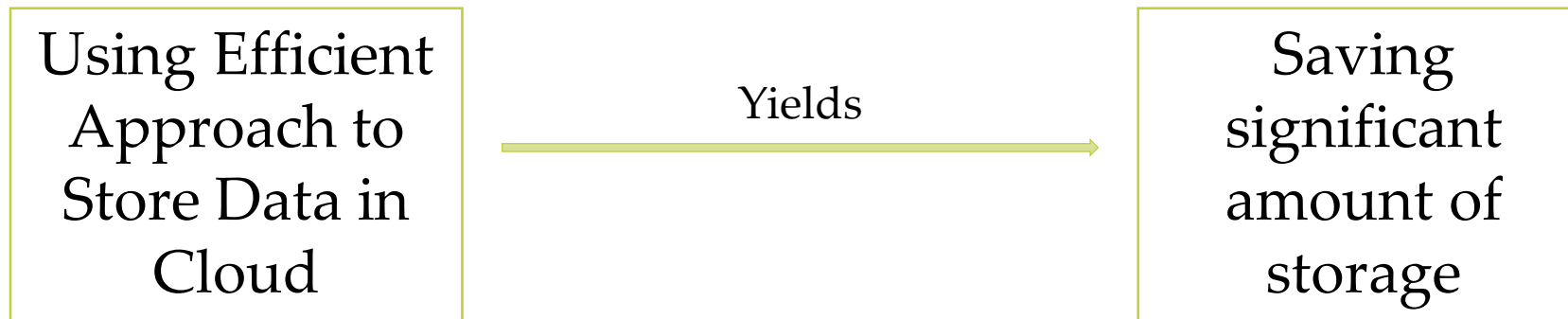
- We define efficiency as follows:

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

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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- [4] W. Voorsluys, J. Broberg, R. Buyya "Introduction to Cloud Computing". In R. Buyya, J. Broberg, A.Goscinski. Cloud Computing: Principles and Paradigms. New York, USA: Wiley Press. pp. 1–44. ISBN 978-0-470-88799-8.
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# Thank You

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