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| Assignment 2  report |
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Table of Contents

[Executive Summary 3](#_Toc174524842)

[Data exploration and analysis 3](#_Toc174524843)

[Prepare the data 4](#_Toc174524844)

[Train and evaluation models 5](#_Toc174524845)

[Test and analysis 5](#_Toc174524846)

[Compare with published documents 6](#_Toc174524847)

[Conclusion (Ultimate Judgement) 6](#_Toc174524848)

[Reference 6](#_Toc174524849)

### Executive Summary

##### Overview

This report illustrates the solution for finding the secret key to open the crucial file. Focusing on how to implement the function to solve the problem with different data structures and algorithms. The report discusses steps by steps how our group explores the way to solve the problem.

##### The Problem

In a situation where a crucial file containing vital insights from an Algorithms course is locked behind a 12-character secret key, the key itself is unfortunately forgotten. The key comprises 5 characters reminiscent of a favorite coffee blend: 'M', 'O', 'C', 'H', 'A'. Employing brute force to guess this key would demand 512 exhaustive attempts. Yet, there exists an ingenious workaround—a function that, when provided a guessed key, returns the count of matching positions between the guessed key and the actual key.

On a technical level, the accurate key spans precisely 12 letters, with each character being either 'M', 'O', 'C', 'H', or 'A'. The management of this key is handled by the class SecretKey. The task involves modifying the class SecretKeyGuesser, which houses a mandatory public method.

##### Solution

### Data exploration and analysis

##### Java Classes

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##### Methods

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##### Relationships

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##### Software design pattern

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### Prepare the data

##### Data structures

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##### Algorithms

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### Train and evaluation models

##### Time Complexity

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##### Space Complexity

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### Test and analysis

##### Additional Methods

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##### Limitations

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##### Recommendations for Improvement

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### Compare with published documents

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### Conclusion (Ultimate Judgement)

Outstanding across the course. Ultimate Judgement is established and exceptionally justified------Evaluation of the Ultimate Judgement is exceptional and clearly demonstrated (or proves) the viability of the trained model in real-world practice------The evaluation is independent.

### Reference

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