

Algorithmics	Student information	Date	Number of session
	UO:293079	19/04/22	6
	Surname: GAVALAS		
	Name: DIMITRIOS		

Activity 1. []

[Complete the next table considering n the number of dataset images (for greedy uses n as the number of tries too). Complete the main method in class ImageAveragerBench.java].

n	Time_BT	Time_BT_balancing	ZNCC_greedy	ZNCC_BT	ZNCC_BT_balancing
2					
3					
4					
5					
6					
7					

Activity 2. []

a) State the algorithm that provides better results and explain why.

The algorithm that provides better results is Backtracking. Greedy algorithm never reconsiders choices. Also the greedy algorithm makes the best local choice at any given moment and as a result may lose the optimal result.

b) Which algorithm will you use for processing a realistic dataset a million of images? Explain why.

I will use Greedy algorithm. It will make whatever choice seems best at the moment in the hope that it will lead to global optimal solution. Also Backtracking is slower as the complexity is higher because it solves problems recursively. So as the images increase the efficiency decreases.

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c) **Determine the theoretical time complexity for backtracking (without balancing condition) and validate this analysis from the experimental results.**