

Algorithmics	Student information	Date	Number of session
	UO:UO277653	08/04/2021	6
	Surname: Stanci		
	Name: Stelian Adrian		



## Activity 1. Validation results.

- Indicate in the document what the complexity of your algorithm is (or approximately). Why you get that complexity?

Taking into account that at each song (level) we generate, in the worst case, 3 more calls to the backtracking method, we can say that the complexity is  $O(3^n)$ .

For example, at level 1 we have 3 nodes, at level 2 9 nodes, level 3 27 nodes... Also, for each node we can consider that it takes the same time. So the final complexity, as said before, results in  $O(3^n)$

- Indicate in the document (you can copy and paste the solution of your program) what is your solution for the following example:

```
BestListlist01.txt 20
```

```
Number of songs: 10
```

```
List of songs:
```

```
id: 3ld4R7 seconds: 4:27 score: 3475
id: 8j4gE3 seconds: 5:22 score: 2834
id: 0fmvy3 seconds: 4:40 score: 3842
id: 8id4R7 seconds: 4:27 score: 3475
id: 9u4gE3 seconds: 6:59 score: 2834
id: 2lsdf9 seconds: 3:22 score: 3842
id: 3j4yQ6 seconds: 5:02 score: 2834
id: 06rwq3 seconds: 4:48 score: 3842
id: 87UKo2 seconds: 3:27 score: 3475
id: 5rtZe9 seconds: 4:44 score: 2834
```

```
Length of the blocks: 20:0
```

```
Total score: 27619
```

```
Total counter: 47246
```

```
Best block A:
```

```
id: 0fmvy3 seconds: 4:40 score: 3842
id: 2lsdf9 seconds: 3:22 score: 3842
id: 06rwq3 seconds: 4:48 score: 3842
```

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id: 87UKo2 seconds: 3:27 score: 3475

Best block B:

id: 3ld4R7 seconds: 4:27 score: 3475

id: 8id4R7 seconds: 4:27 score: 3475

id: 3j4yQ6 seconds: 5:02 score: 2834

id: 5rtZe9 seconds: 4:44 score: 2834