Algorithmics	Student information	Date	Number of session
	UO: 271580	07/03/20	3
	Surname: Lopez Amado		
	Name: Pablo		

Escuela de Ingeniería Informática
Universidad de Oviedo

Universidad de Oviedo
Universidá d'Uviéu
University of Oviedo

Activity 1. Basic recursive models.

Subtraction 4:

In order to achieve a O($3^{n/2}$) I divide and conquer by a=3, b=2 and k=0, which means that there are 3 subproblems and the size of each one is reduced by 2 and the complexity of the rest of the code is 0(n^0) because a > 1

Division 4:

In order to achieve a O(n^2) there are 2 different approaches and I chose to divide and conquer by a=4, b=2 and k=2, which means that there are 4 subproblems and the size of each one is divided by 2 and the complexity of the rest of the code is 0(n^2) because a = b^k

Activity 2. Uncle Scrooge

COINS	ENERGY
100	3
200	4
400	5
800	6
1600	7
3200	8
6400	9
12800	10
25600	11

COINS	TIME
100	51
200	30
400	168
800	153
1600	288
3200	571
6400	1081
12800	2201
25600	4404

Energy function follows a logarithmic model since every time size is double energy just increases by one because it calls “Balance()” once more than the previous size.

Time function follows a n*logn function since it applies Divide&Conquer with a=2, b=2 and k=1.

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