


Algorithmics	Student information	Date	Number of session
	UO:300170	24-02-25	2
	Surname: Álvarez Fernández	 Escuela de Ingeniería Informática Universidad de Oviedo	
	Name: Andrés		



Activity 1. [Bubble Algorithm]

n	T ordered	T reverse	T random
10000	LoR	108	81
2*10000	165	418	579
2**2*10000	196	1665	3134
2**3*10000	2771	6765	20311
2**4*10000	20486	33265	LoR

The times obtained agree with the times expected because the times when the collection is ordered are the less and when is reverse are the most.

Activity 2. [Selection Algorithm]

n	T ordered	T reverse	T random
10000	LoR	135	82
2*10000	169	417	564
2**2*10000	197	1701	3343
2**3*10000	2726	6786	12872
2**4*10000	20665	27736	54487

The times obtained agree with the times expected because they are similar as the bubble algorithm which has the same complexities as this algorithm. In all cases are the same (quadratic).

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Activity 3. [Insertion Algorithm]

n	T ordered	T reverse	T random
10000	LoR	111	79
2*10000	51	414	562
2**2*10000	715	1646	3143
2**3*10000	2782	7158	15832
2**4*10000	11322	29792	54006
2**5*10000	OoT	OoT	OoT
2**6*10000	OoT	OoT	OoT
2**7*10000	OoT	OoT	OoT
2**8*10000	OoT	OoT	OoT
2**9*10000	OoT	OoT	OoT
2**10*10000	OoT	OoT	OoT
2**11*10000	OoT	OoT	OoT
2**12*10000	OoT	OoT	OoT
2**13*10000	OoT	OoT	OoT

The times obtained agree with the times expected because they are similar as the bubble algorithm which has the same complexities as this algorithm. In all cases are the same (quadratic).

Activity 4. [Quicksort Algorithm]

n	T ordered	T reverse	T random
25000	LoR	LoR	LoR
2*25000	LoR	LoR	LoR
2**2*25000	LoR	LoR	LoR
2**3*25000	LoR	LoR	LoR
2**4*25000	LoR	LoR	LoR
2**5*25000	LoR	LoR	105
2**6*25000	LoR	LoR	222

The times obtained do not agree with the times expected because the measurements are unreliable.

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Activity 5. [Quicksort + Insertion Algorithm]

n	T random
Quicksort	
Quicksort+Insertion(k=5)	58
Quicksort+Insertion(k=10)	LoR
Quicksort+Insertion(k=20)	101
Quicksort+Insertion(k=30)	99
Quicksort+Insertion(k=50)	120
Quicksort+Insertion(k=100)	68
Quicksort+Insertion(k=200)	125
Quicksort+Insertion(k=500)	111
Quicksort+Insertion(k=1000)	92

The times obtained do not agree with the times expected because the measurements are unreliable.