Nodect>\* Linked Listic T> : Merge Sort ( Noobec T> \* hea) template coises to TCn)= C((alogn)+coci) merge Sorting (Rhea); return heai COSTO (# veces o Derlegen

Tan= () (1 log= 1)

Costa	T(m)= C((alogan) + czc1)	merge Sorting (Rheas;  return hea;	template coloss to  Nodector Linked Liste to :- Meyge Sort ( Nooberton Mens)
			COSTO # veces o

template cclass T>	cost 8	# veces
Void Linked List CT> :: merge Sarting (Node CT) ** hea) {	CI	1
Nodect>* ear = *hear Nodect>* first i		1
Nodect) * Secondi	( 7	
ifilitar or items	C 3	1
if (! cur or ! cur > get Next()) return;	(4	1
find Middle (cur, & first, & second); → O(~)	(5	
merge Sorting (& first);		T(1/2)
merge Sorting (& second);	6	T(n/2)
thea = merge Both (first, second);	7	0
	6	
$T(n) = \int_{-\infty}^{\infty} 1, n=1$		
$T(n) = \begin{cases} 1, n=1 \\ 2T(n/2) + n, n > 1 \end{cases}$		
= $ZT(N/z)+n$		N
** [2T(2)+2]+n T(n):	= O(nic	29g_ ()
= 22T(1/22) + 2n		
$=2^{3}T(2/2^{3})+30$		
=2"T("/2")+*n		
1 = 1 = 31 = 2 K = log 2 n		
219527 T(1/2/922) + logzn		

AT(7)+nlogen (n) = 1 + Nlogen

template cclass to	costc	# veces 60(?)
void Linked Lister): find Middle (Node CT) CUV, Node CT > + + first, No	de 1 - Lay sored)	
E	C	1
Node CTTA fasti	Cz	1
(Nodect>* slow;	(3	1
fast = (ur -) getNext(); 2 vntll	(4	1
fast = (ur > getNext();  while (fast != nullptr) -> fast getNext + 2 vntll  Best case = worst case	(5	1
Best case = worst case	e	1
fast = fast + get Next ();	C6	Sign
it (fast ! = nullptr)	C7	
Slow = Slow - get Next ();	CE	^
fast = fast agetNex+();	Cq	
3		
5	Cio	4
*first = Cur;		<i>T</i>
* second = slow + getNext(),	CII	1
Slaw -) SetNext (nyllpt);	C12	7_
3		
Tris		
T(n) = G(n) + c		

 $T(n) = G_1(1) + G_2(1) + G_3(1) + G_3$ 

T(n)= A(cs+C6+C7+C6+C9)+1(c+C2+C3+C4+C6+C4+C8)
T(n)= D(n)

		The state of the s
template cclass T>	costo	Hueces o d(?)
Nodect)* Linked List :: Merge Both (Nodect) & first, Nodect) & second	()	L.
The second secon	C,	1
Natectit answer = nullptri	Cz	JL ##
if( ! first) {		妻
returnsecondi 3	C3	I
else if (! Second)	Cy	
3- return firsts	CS	
if(first=)getIpval() <= second->getIpval())	CE	d
{     arswer = first;		a
answer - serel wa	(7	1
answer - SEX-Next (merge Both (first, second-eget Next));	6	T(MO)
else		
arswer = second;		
	Cq	l
9-Swer -> Set Next (merge Both (first->get Next(), second get Next());	(10	T(~40)
return assuer;	$C_{\ell_1}$	e
3		
$T(n) = C_1(1) + C_2(0) + C_3(0) + C_4(0) + C_6(0) + C_6$		
(c) = ((1)+(2(0)+(3(e)+(4(e+(5(e)+(6(e)+(-(4)+(4)+(-(4		
T(n)= \$ (1 n=1)	-ca(10) +c,	(T(a) ) C (a)
T(n)= \$ 1(n=1)  2T(m) #4(n7) 2"T(m) K)		reconst cutes
2T(M) 49/17/ 2"T(M)		
T(n) = 27(ng) 2KT/1/11		
= 2/27/027		
$2^{2}T(n+n)$ $1+(n+n)$		
$= 2^{3} T (ng) $ $1 + k = 1$		
N -0		
= 2 KTGA		
T(n) = O(n)		