	Homework 7							
1.		White	Gray	Black In Ituly				
	White	Yes I tree, back, cross	Yes / back, cross	Yes / Cross				
	Gray	Yes/tree, buck	forward	Yos / tree, forward, cross				
*	Black	No	Yes/back	Yes / free, back, forward, cross				
				TERMS CONTROL T				
۵.	DFS(G)							
	for each vertex uf G.V							
	COLOTEYT - WHITE							
	PENJ= NIL 12N = [NJ)							
	time	=6		dCu3= fine++				
	for	for each vertex UEG.V						
		f Calou[n]=		CERTILA DE VIDE TO COMPANY				
		DPS_VIST		ATIMW==EVJONO II				
eri Seri	OFS_Vis			N=EV79				
	Color[4]=GRAY							
	d[4]	= time++		Color Eag = PLACK				
	for	all v in 1	Adj [u]	Hamilton That Himit	6,			
	if color[v] == WHITE							
	W.	fring	u v "tre	elege" of tast of town				
	Same of value, Also, be notice of an US [V] get oraph							
	DPSEVISITE(V) XII) De language de l'ample							
	9-	else if col	GREVI == GRA	eys add the eath of late X				
	Print 4 V "back edge"							
	else if deu] 7dev]							
4		print	yv "cross	edge " ASH 1= CT) A +91				
		else	1	(CDAVI) S (DA	1			
		frint	n n uton	ward edge" 11811 30				
	Color	[4] = 26lac		020				
		cy) = time		nell = (t) I some Let) = Llan				
			(mad)	S(T) A group Laren gul				
3.	DFS(6)	LILIAR	11 + 1 5 CD 1				
		or all y	EG.V	10 1 1 1 1 1 1 1 1 1				
			= WHITE	+ res = 2 1.192 +				

P[4]= NJL time=0 K=0 for 911 4 £ 6. V if color[4] == WHITE K++ Visitcu VisitCy) Color [4] = GRAY dcu]= timety CCE4]=K for all V & Adj [4] if color(v) == WHITE 100 ASY 290 P[V]=U Visit(V) color [4] = BLACK finish [u] = fine + Tuzzka Az v Ma ma * k will be increased when OPS finds a new prot, so that root and its desendants will have the same a value. Also, by nature of an undirected graph there's no cross edges. So CCEX] = CCEY] only it X and y are on the same component. Print of y State case" I. Base Coise Full Touth It osk 4. Let nCT)=1, then hCT)=0 hct) = Lignord] OZ [191] Why house? "V N INIM 020 V II. Assume hct) = Llgnct) h CTJ Z 1 + Llgn CLJ]

Z L1 + lgn CLJ]

Z L1 + lgn CLJ] > L192 + 19n(D) (10)

	2 Llg(2·n(L)) at to allower aft	
	= Llg(2·n(L) +1)] * additional hint	
	> Lignot) Alah - Halla Frank	Ne.
	For all CAND & B.F.	
5.	Dijkstra's Cd/TT values)	
	5 95 source vertex	
3	0112345	
	S O/MIL OINIL OWIL OINIL OINIL	
ر بر	+ 00/NIL 315 315 315 315 315	
	X 100 NIL 9/4 9/4 9/4 9/4	
	4 10 MIL 5/5 5/5 5/5 5/5 5/5	
	Z DNIL DNIL DNIL ILLY ILLY ILLY	
	Z 00/NIL 00/NIL 11/4 11/4 11/4 11/4 11/4 11/4 11/4 11/	4 - 1.
	4 6	
	.	
	2 9s source	
	012345	
	S 9/101 3/2 3/2 3/2 3/2	
	+ 2/NI 6/5 6/5 6/5 6/6	
	N 06/NIL 8/12 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/	
	7 0/NIL 8/S 8/S 8/S 8/S 2 0/NIL 8/S 8/S 8/S 8/S	
	5 OWIL WILL WILL WILL OWILL	
	set 5 8 2 9 25+ 25+x 25+x4	
	2	
	S X	
	+	
6.	To find the most rolinhe path, we utilize	
	Dijkstra's and apply a weight on each of	
	the odges. This weight is found by solving	
	in vayor, I'ms weight is tound in solving	

0		
	the symmation of the negative leg of the	
	raine of the symmetrian pairs. So we have:	
	Most_Reliable_Path	
	fore all cyv) f B.E	
	$W(y,y)=-\log rcu,y)$	
	Print path	
	print path	
,		
		0
	À & .	
		-
	<u>A</u> S	
i		