

Assign Trips to Drivers - Minimize Overlap I

Trip 1		6 minutes											
Trip 2						4 minutes							
Trip 3									4 minutes				
Trip 4										5 minutes			
Trip 5	5 minutes												

Overlap Minutes

From\To	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	End
Start	0	0	0	0	0	0
Trip 1	--	2	0	0	4	0
Trip 2	8	--	1	0	9	0
Trip 3	11	7	--	3	12	0
Trip 4	13	9	6	--	14	0
Trip 5	4	0	0	0	--	0

Assign Trips to Drivers - Minimize Overlap II

Overlap Minutes

From\To	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	End
Start	0	0	0	0	0	0
Trip 1	--	2	0	0	4	0
Trip 2	8	--	1	0	9	0
Trip 3	11	7	--	3	12	0
Trip 4	13	9	6	--	14	0
Trip 5	4	0	0	0	--	0

Minimal Overlap: 0

Driver 1:
Start->1->3->end

Driver 2:
Start->5->2->4->end

Variables & Constraints

From\To	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	End	Constraints
Start	X = 1				X = 1		Sum = 2
Trip 1	--		X = 1				Sum = 1
Trip 2		--		X = 1			Sum = 1
Trip 3			--			X = 1	Sum = 1
Trip 4				--		X = 1	Sum = 1
Trip 5		X = 1			--		Sum = 1
Constraints	Sum = 1	Sum = 1	Sum = 1	Sum = 1	Sum = 1	Sum = 2	

Assign Trips to Drivers - Minimize Overlap III

Trip 1		6 minutes											
Trip 2						4 minutes							
Trip 3									4 minutes				
Trip 4										5 minutes			
Trip 5	5 minutes												

Solution

Driver 1		Trip 1						Trip 3				
Driver 2	Trip 5					Trip 2			Trip 4			