

A 10 Days Solution to the Social Golfer Problem.

TABLE I

0,1,2,3	0,4,8,28	0,11,14,21	0,18,24,27	0,6,13,26	0,7,25,31	0,5,19,20	0,15,17,29	0,9,12,22	0,10,23,30
4,5,22,23	1,6,18,23	1,7,10,28	1,9,19,26	1,4,11,15	1,5,24,29	1,14,22,25	1,13,16,31	1,8,20,30	1,12,21,27
6,7,20,21	2,7,17,22	2,15,20,25	2,8,11,16	2,9,21,28	2,12,14,19	2,23,27,29	2,4,26,30	2,5,10,13	2,6,24,31
8,25,26,27	3,5,26,31	3,13,22,24	3,10,17,25	3,8,14,23	3,18,28,30	3,4,16,21	3,6,11,12	3,7,15,27	3,9,20,29
9,10,11,24	9,13,14,27	4,9,18,31	4,7,12,29	5,12,18,25	4,6,10,27	6,9,17,30	5,7,8,9	4,14,17,24	4,13,19,25
12,13,15,30	10,15,19,21	5,16,27,30	5,6,14,15	7,19,24,30	8,13,17,21	7,11,13,18	10,14,18,20	6,16,25,28	5,11,17,28
14,28,29,31	11,25,29,30	6,8,19,29	13,20,23,28	10,16,22,29	9,15,16,23	8,10,12,31	19,22,27,28	11,19,23,31	7,14,16,26
16,17,18,19	12,16,20,24	12,17,23,26	21,22,30,31	17,20,27,31	11,20,22,26	15,24,26,28	21,23,24,25	18,21,26,29	8,15,18,22

The table above shows a 10 days schedule to the *Social Golfer Problem*. This solution corresponds to a 4-RGDD (Resolvable Group Divisible Design) of type 2^{16} . Alan C.H. Ling pointed out that such a solution could be obtained from a result by Charles J. Colbourn (See the reference below). So I constructed the solution.

The players are labeled using the numbers 0 through 31, and each column represents a different day.

References:

- Charles J. Colbourn.
A Steiner 2-Design with an Automorphism Fixing Exactly $r + 2$ Points.
 Journal of Combinatorial Designs 7 (1999), no.5, 375-380.