

CS211 ALGORITHMS & DATA STRUCTURES II

Final Project

Dr. Phil Maguire

Burrito TSP Challenge

The time is 8:00pm. It's getting busy in Maynooth's brand new takeaway Burrito Bear (GPS co-ordinates 53.38195N, -6.59192W). The queues are out the door and the phone is hopping with takeaway orders.



There are 100 delivery orders waiting to be delivered! Luckily, Burrito Bear is Ireland's first takeaway using drone delivery. It has capacity for 100 orders at a time and can deliver them all and return back to base without recharging.



All somebody needs to do is give the drone the order of the houses to visit, listing all the numbers from 1 to 100 in some optimal order. The goal is to minimize the cumulative total number of minutes that customers' orders are overdue.

Customers are happy to wait up to 30 minutes for their order to be delivered, without any issues. After that, every minute of delay counts. Minimize the number of minutes of delay experienced by the set of all customers!

The drone flies at 80kmph and flies in straight lines from house to house.

The best route will win 400 Vertcoin – and a minimum wage job at Burrito Bear filling burritos (because the algorithm will do the calculations).

	Address	Time Burrito Ordered	N	W
1	33 The Paddocks, Oldtown Mill, Celbridge, Co. Kildare	7:12 PM	53.3473	-6.55057
2	156 Glendale, Leixlip, Co. Kildare	7:12 PM	53.37077	-6.48279
3	26 Thornhill Meadows, Celbridge, Co. Kildare	7:12 PM	53.35152	-6.54989
4	47 Meadowbrook Avenue, Maynooth Co Kildare	7:12 PM	53.37278	-6.59611
5	112 Mill Lane, Kilcock, Co. Kildare	7:13 PM	53.40126	-6.6683
6	54 Willowbrook Lawns, Celbridge, Co. Kildare	7:14 PM	53.34484	-6.54766
7	416A Ballyoulster, Celbridge, Co. Kildare	7:15 PM	53.34133	-6.51856
8	37 The Orchard, Oldtown Mill, Celbridge, Co. Kildare	7:15 PM	53.34492	-6.5557
9	4 Abbey Park Grove, Clane, Co. Kildare	7:16 PM	53.29206	-6.67685
10	36 Rinawade Park, Leixlip, Co. Kildare	7:16 PM	53.36483	-6.51278
11	1 The Close, Temple Manor, Celbridge, Co. Kildare	7:16 PM	53.33067	-6.54686
12	35 Beech Park Wood Beech Park, Leixlip Co Kildare	7:16 PM	53.36287	-6.52468
13	544 Riverforest, Leixlip, Co. Kildare	7:17 PM	53.37416	-6.49494
14	54 Courtown Park, Kilcock Co Kildare	7:17 PM	53.39549	-6.67647
15	10 The Drive, Abbeyfarm, Celbridge, Co. Kildare	7:18 PM	53.33239	-6.55163
16	43 The Woodlands, Castletown, Celbridge, Co. Kildare	7:18 PM	53.34678	-6.53415
17	1002 Avondale, Leixlip, Co. Kildare	7:18 PM	53.36869	-6.48314
18	38 Parsons Hall, Maynooth, Co. Kildare	7:19 PM	53.37521	-6.6103
19	32 The View, St. Wolstan Abbey, Celbridge, Co. Kildare	7:20 PM	53.33751	-6.53173
20	10 Glen Easton Crescent, Leixlip, Co. Kildare	7:21 PM	53.37184	-6.50065
21	11 Rinawade View, Leixlip, Co. Kildare	7:21 PM	53.36143	-6.51849
22	856 Old Greenfield, Maynooth, Co. Kildare	7:21 PM	53.37473	-6.59338
23	28 The Avenue, Castletown, Co. Kildare, Celbridge, Co. Kildare	7:22 PM	53.34514	-6.53615
24	9 The Park, Louisa Valley, Leixlip, Co. Kildare	7:22 PM	53.36115	-6.48907
25	33 Leinster Wood, Carton Demesne, Maynooth, Co. Kildare	7:23 PM	53.39351	-6.5542
26	16 Priory Chase, St. Raphaels Manor, Celbridge, Co. Kildare	7:23 PM	53.33886	-6.55468
27	14 The Rise, Louisa Valley, Leixlip, Co. Kildare	7:25 PM	53.36115	-6.48907
28	646 Riverforest, Leixlip Co Kildare	7:26 PM	53.37497	-6.4991
29	76 Castle Dawson, Maynooth, Co. Kildare	7:27 PM	53.37565	-6.60716
30	23 Priory Way, St. Raphaels Manor, Celbridge, Co. Kildare	7:27 PM	53.3354	-6.55111
31	5 Rinawade View, Leixlip, Co. Kildare	7:28 PM	53.36143	-6.51849
32	11 The Park, Louisa Valley, Leixlip, Co. Kildare	7:28 PM	53.36115	-6.48907
33	117 Royal Meadows, Kilcock Co Kildare	7:28 PM	53.39459	-6.66995

34	12 Maynooth Park, Maynooth, Co. Kildare	7:29 PM	53.37122	-6.586
35	30 Ryevale Lawns, Leixlip, Co. Kildare	7:30 PM	53.36656	-6.49183
36	44 Rinawade Avenue, Leixlip, Co. Kildare	7:30 PM	53.36141	-6.51834
37	7 Straffan Green, Straffan Wood, Maynooth, Co. Kildare	7:30 PM	53.37323	-6.58859
38	29 Castletown, Leixlip, Co. Kildare	7:31 PM	53.36292	-6.50203
39	1 Kyldar House, Manor Mills, Maynooth, Co. Kildare	7:31 PM	53.38122	-6.59226
40	83 Thornhill Meadows, Celbridge, Co. Kildare	7:31 PM	53.35098	-6.54915
41	90 Vanessa Lawns, Celbridge, Co. Kildare	7:31 PM	53.34312	-6.54747
42	50 The Lawn, Oldtown Mill, Celbridge, Co. Kildare	7:31 PM	53.34197	-6.55492
43	20 Habourview, The Glenroyal Centre, Maynooth, Co. Kildare	7:31 PM	53.37954	-6.58793
44	13 The Little Grove, Celbridge, Co Kildare	7:32 PM	53.33835	-6.53984
45	10 Brookfield Avenue, Maynooth Co Kildare	7:32 PM	53.36976	-6.59828
46	35 Rail Park, Co.Kildare, Maynooth, Co. Kildare	7:32 PM	53.37811	-6.57952
47	10 Fair Green Court, Kilcock,, Co. Kildare	7:33 PM	53.39847	-6.66787
48	3 Lyreen Park, Maynooth Co Kildare	7:34 PM	53.38579	-6.58673
49	34 Silken Vale, Maynooth, Co. Kildare	7:34 PM	53.37626	-6.59308
50	35 Glen Easton Square, Leixlip, Co. Kildare	7:34 PM	53.37336	-6.48219
51	10 The Court, Abbey Farm,, Celbridge, Co.Kildare	7:34 PM	53.33032	-6.55311
52	4 Glendale, Leixlip, Co. Kildare	7:35 PM	53.37201	-6.48517
53	628 Riverforest, Leixlip, Co. Kildare	7:35 PM	53.37416	-6.49731
54	111 Elton Court, Leixlip, Co. Kildare	7:36 PM	53.36164	-6.50526
55	169 Glendale, Co.Kildare, Leixlip, Co. Kildare	7:36 PM	53.37043	-6.48193
56	94 Croduan Forest Park, Celbridge, Co. Kildare	7:36 PM	53.35372	-6.54564
57	13 Abbey Park Court , Clane, , Co Kildare.	7:37 PM	53.2908	-6.67746
58	533 Courtown Road, Kilcock, Co. Kildare	7:37 PM	53.39792	-6.6711
59	13 The Hawthorns, Kilcock, Co. Kildare	7:37 PM	53.39315	-6.66909
60	106 The Drive, Castletown,, Celbridge, Co.Kildare	7:39 PM	53.34439	-6.53841
61	15 Willow Rise, Primrose Gate, Celbridge, Co. Kildare	7:41 PM	53.33591	-6.53566
62	7 Rinawade Park, Leixlip, Co. Kildare	7:41 PM	53.3632	-6.51178
63	40 Oaklawn West., Leixlip, Co. Kildare	7:42 PM	53.36833	-6.50589
64	12 Castlevillage Avenue, Celbridge, Co. Kildare	7:42 PM	53.35298	-6.54921
65	107 Castle Dawson, Maynooth, Co. Kildare	7:43 PM	53.38122	-6.59226
66	2 The Downs, St.Wolstan Abbey,, Celbridge, Co.Kildare	7:43 PM	53.33605	-6.53414
67	44 Simmonstown Manor, Celbridge, Co. Kildare	7:43 PM	53.33324	-6.53978
68	2 Parsons Street, Maynooth, Co. Kildare	7:43 PM	53.38039	-6.59368
69	6 Glen Easton View, Leixlip Co Kildare	7:45 PM	53.36883	-6.51468
70	78 Crodaun Forest Park, Celbridge, Co. Kildare	7:45 PM	53.35401	-6.54603
71	172 Woodview, Castletown, Celbridge, Co. Kildare	7:45 PM	53.34745	-6.53401
72	116 Connaught Street, Kilcock, Co. Kildare	7:46 PM	53.39839	-6.66767
73	35 The Paddocks, Oldtown Mill, Celbridge, Co. Kildare	7:47 PM	53.3473	-6.55057
74	11 The Lodge,, Abbeylands,, Clane,, Co. Kildare.	7:48 PM	53.29128	-6.67836
75	113 Elton Court, Leixlip, Co. Kildare	7:48 PM	53.36158	-6.50533
76	3 Greenfield Drive, Maynooth, Co. Kildare	7:48 PM	53.3727	-6.58757
77	13 Castlevillage Lawns, Celbridge, Co. Kildare	7:48 PM	53.35321	-6.55412

78	902 Lady Castle, K Club, Straffan, Co. Kildare	7:49 PM	53.31159	-6.60538
79	13 Rinawade Close, Leixlip, Co. Kildare	7:50 PM	53.36455	-6.51435
80	Apartment 1, The Lamps, School Street, Kilcock, Co. Kildare	7:50 PM	53.39999	-6.66807
81	2 Beaufield Drive, Maynooth, Co. Kildare	7:50 PM	53.37414	-6.60028
82	509 Riverforest, Leixlip, Co. Kildare	7:50 PM	53.37402	-6.49363
83	43 The Green Moyglare Hall, Maynooth Co Kildare	7:51 PM	53.38983	-6.5951
84	636 St. Patrick Park, Celbridge, Co. Kildare	7:51 PM	53.34033	-6.54596
85	132 The Peninsula, Alexandra Walk, Clane, Co. Kildare	7:51 PM	53.28973	-6.67445
86	14 Rye River Crescent, Dun Carraig, Leixlip, Co. Kildare	7:52 PM	53.36518	-6.48913
87	348 Ryevale Lawns, Leixlip, Co. Kildare	7:52 PM	53.36873	-6.49619
88	17 The Crescent, Abbey Farm,, Celbridge, Co. Kildare	7:52 PM	53.33256	-6.55056
89	36 Castledawson, Maynooth Co Kildare	7:53 PM	53.37565	-6.60701
90	28 The Lawn Moyglare Abbey, Maynooth Co Kildare	7:53 PM	53.38895	-6.60579
91	104c Beatty Park, Celbridge, Co. Kildare	7:54 PM	53.34648	-6.54552
92	40 Thornhill Meadows, Celbridge, Co. Kildare	7:55 PM	53.35202	-6.55099
93	18 College Green, Maynooth, Co. Kildare	7:55 PM	53.37247	-6.60044
94	1 Beaufield Crescent, Maynooth, Co Kildare	7:56 PM	53.37449	-6.60005
95	6 Glen Easton Grove , Leixlip Co Kildare	7:56 PM	53.36559	-6.51914
96	14 The Avenue, Rochford, Bakers Walk, Kilcock, Co. Kildare	7:57 PM	53.39648	-6.66612
97	7 Riverlawn, Abbeyfarm, Celbridge, Co. Kildare	7:57 PM	53.33239	-6.55163
98	51 Royal Meadows, Kilcock, Co. Kildare	7:57 PM	53.39512	-6.67084
99	96 Priory Lodge, St. Raphael's Manor, Celbridge, Co. Kildare	7:58 PM	53.33835	-6.53984
100	18 Castle Dawson, Maynooth,, Co. Kildare	7:58 PM	53.37538	-6.60707

**DETERMINATION
CAN BE
DELIVERED.**

