Assessment Outputs and Conclusions
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For an in-depth look at the code, please check data_analysis.ipynb and process_game_state.py

a. Is entering via the light blue boundary a common strategy used by Team2 on T (terrorist) side?

Based on the data, no, entering via the light blue boundary is not a common strategy used by Team2 on T. Only Player5 and Player9 enter SnipersNest in round 16 in the entirety of Team2's T side.

Also intuitively from playing CS:GO, entering from SnipersNest onto BombsiteB is a very rare case for a T player. It would most likely only happen if the T player is lurking on A while the rest of the team is executing on B.

	round_num	tick	side	is_alive	x	y	z	inventory	area_name	seconds	bomb_planted	player
0	16	298025	T	True	-2139	681	300	[{'ammo_in_magazine': 10, 'ammo_in_reserve': 1...	SnipersNest	30	True	Player5
1	16	298041	T	True	-2163	668	305	[{'ammo_in_magazine': 9, 'ammo_in_reserve': 18...	SnipersNest	30	True	Player5
2	16	298057	T	True	-2186	656	299	[{'ammo_in_magazine': 9, 'ammo_in_reserve': 18...	SnipersNest	30	True	Player5
3	16	298249	T	True	-2221	911	286	[{'ammo_in_magazine': 4, 'ammo_in_reserve': 18...	SnipersNest	32	True	Player5
4	16	298265	T	True	-2226	910	305	[{'ammo_in_magazine': 4, 'ammo_in_reserve': 18...	SnipersNest	32	True	Player5
5	16	298281	T	True	-2230	911	312	[{'ammo_in_magazine': 4, 'ammo_in_reserve': 18...	SnipersNest	32	True	Player5
6	16	298297	T	True	-2230	916	306	[{'ammo_in_magazine': 4, 'ammo_in_reserve': 18...	SnipersNest	32	True	Player5
7	16	298313	T	True	-2231	919	288	[{'ammo_in_magazine': 13, 'ammo_in_reserve': 9...	SnipersNest	32	True	Player5
8	16	298057	T	True	-2183	907	296	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	30	True	Player9
9	16	298073	T	True	-2202	934	310	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
10	16	298089	T	True	-2228	955	311	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
11	16	298105	T	True	-2256	974	300	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
12	16	298121	T	True	-2273	989	308	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
13	16	298137	T	True	-2293	1006	324	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
14	16	298153	T	True	-2306	1018	334	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
15	16	298169	T	True	-2300	1018	331	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
16	16	298185	T	True	-2282	1018	321	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	31	True	Player9
17	16	298201	T	True	-2263	1007	308	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	32	True	Player9
18	16	298217	T	True	-2244	988	293	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	SnipersNest	32	True	Player9

b. What is the average timer that Team2 on T (terrorist) side enters "BombsiteB" with least 2 rifles or SMGs?

The average time that Team2 on T side enters "BombsiteB" with at least 2 rifles or SMGs is 43.2 seconds.

To find this, I did two main things:

1. Created a list of all the round_nums on Team2's T Side where the condition of at least 2 rifles or SMGs is true.
2. Created a DataFrame of all the rounds where one member of Team2 entered BombsiteB and bomb_planted = false. (I define "enter" as having one member of Team2 enter BombsiteB)

Then I used the .isin function on the DataFrame with the list of rounds to find which rounds that Team2 entered BombsiteB with the condition being true.

With that, I just used .mean() on the seconds column to get the average time the first player of Team2 entered for each round where the condition is true.

Filtering Team2's T side data by extracting weapon_classes, and checking if it passes the condition:

	round_num	tick	side	is_alive	x	y	z	inventory	area_name	seconds	bomb_planted	player	weapon_classes	match
0	16	286888	T	True	-1310	-3332	294	[{'ammo_in_magazine': 13, 'ammo_in_reserve': 2...	TSpawn	0	False	Player5	[Pistols]	False
1	16	286888	T	True	-1569	-3126	294	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player9	[Pistols]	False
2	16	286888	T	True	-1452	-3333	296	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player7	[Pistols]	False
3	16	286888	T	True	-1461	-3188	293	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player8	[Pistols]	False
4	16	286888	T	True	-1270	-3260	288	[{'ammo_in_magazine': 1, 'ammo_in_reserve': 0,...	TSpawn	0	False	Player6	[Grenade, Grenade, Pistols]	False
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
70	30	508876	T	True	-1499	-3126	291	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player6	[Pistols, Rifle, Grenade]	True
71	30	508876	T	True	-1539	-3066	290	[{'ammo_in_magazine': 1, 'ammo_in_reserve': 0,...	TSpawn	0	False	Player5	[Grenade, Pistols, Rifle, Grenade, Grenade]	True
72	30	508876	T	True	-1463	-3190	293	[{'ammo_in_magazine': 35, 'ammo_in_reserve': 9...	TSpawn	0	False	Player8	[Rifle, Grenade, Pistols]	True
73	30	508876	T	True	-1327	-3262	289	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player7	[Pistols, Rifle, Grenade, Grenade]	True
74	30	508876	T	True	-1459	-3262	295	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	TSpawn	0	False	Player9	[Pistols, Rifle, Grenade, Grenade]	True

Filtering Team2's T side data by checking each player's first time inside of BombsiteB and bomb_planted = False:

	round_num	tick	side	is_alive	x	y	z	inventory	area_name	seconds	bomb_planted	player
0	16	292664	T	True	-956	-265	96	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	45	False	Player8
1	16	292984	T	True	-1065	-217	99	[{'ammo_in_magazine': 17, 'ammo_in_reserve': 1...	BombsiteB	48	False	Player9
2	16	293384	T	True	-724	-3	50	[{'ammo_in_magazine': 9, 'ammo_in_reserve': 26...	BombsiteB	51	False	Player5
3	16	293496	T	True	-700	123	38	[{'ammo_in_magazine': 8, 'ammo_in_reserve': 12...	BombsiteB	52	False	Player6
4	21	358856	T	True	-897	-297	96	[{'ammo_in_magazine': 30, 'ammo_in_reserve': 9...	BombsiteB	19	False	Player8
5	21	359112	T	True	-902	-296	96	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	21	False	Player5
6	25	441436	T	True	-874	-304	96	[{'ammo_in_magazine': 30, 'ammo_in_reserve': 9...	BombsiteB	30	False	Player5
7	26	459804	T	True	-740	-122	58	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	103	False	Player5
8	28	482620	T	True	-717	-3	47	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	28	False	Player6
9	28	482748	T	True	-721	-15	49	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	29	False	Player8
10	28	483148	T	True	-671	76	23	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	32	False	Player5
11	28	483324	T	True	-714	-16	45	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	34	False	Player7
12	28	484028	T	True	-1089	-169	99	[{'ammo_in_magazine': 24, 'ammo_in_reserve': 9...	BombsiteB	39	False	Player9
13	30	513452	T	True	-1001	-248	98	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	36	False	Player8
14	30	513852	T	True	-723	-14	49	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	39	False	Player5
15	30	514124	T	True	-733	304	54	[{'ammo_in_magazine': 1, 'ammo_in_reserve': 0,...	BombsiteB	41	False	Player7

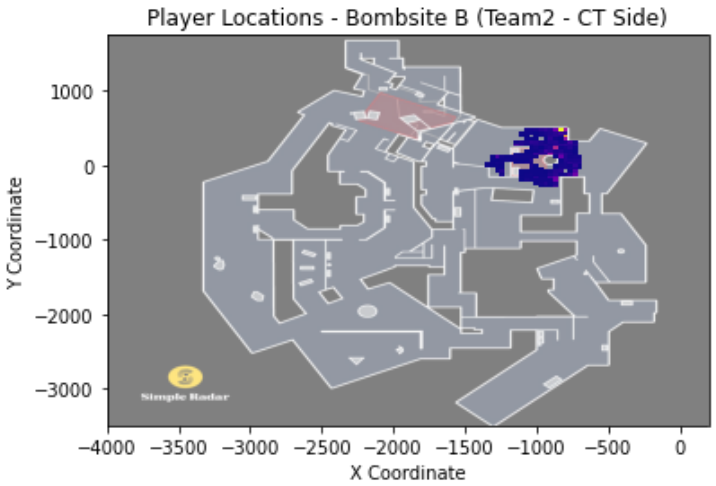
Finding which rows coincide with the list of round_num that pass the condition:

	round_num	tick	side	is_alive	x	y	z	inventory	area_name	seconds	bomb_planted	player
0	21	358856	T	True	-897	-297	96	[{'ammo_in_magazine': 30, 'ammo_in_reserve': 9...	BombsiteB	19	False	Player8
2	25	441436	T	True	-874	-304	96	[{'ammo_in_magazine': 30, 'ammo_in_reserve': 9...	BombsiteB	30	False	Player5
3	26	459804	T	True	-740	-122	58	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	103	False	Player5
4	28	482620	T	True	-717	-3	47	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	28	False	Player6
9	30	513452	T	True	-1001	-248	98	[{'ammo_in_magazine': 20, 'ammo_in_reserve': 1...	BombsiteB	36	False	Player8

c. Now that we've gathered data on Team2 T side, let's examine their CT (counter-terrorist) Side. Using the same data set, tell our coaching staff where you suspect them to be waiting inside "BombsiteB"

i. Hint: Try a heatmap

I used matplotlib and seaborn to create and plot the heatmap onto the map provided:



More locations that may be useful can also be found using the filter_by_area_name function: