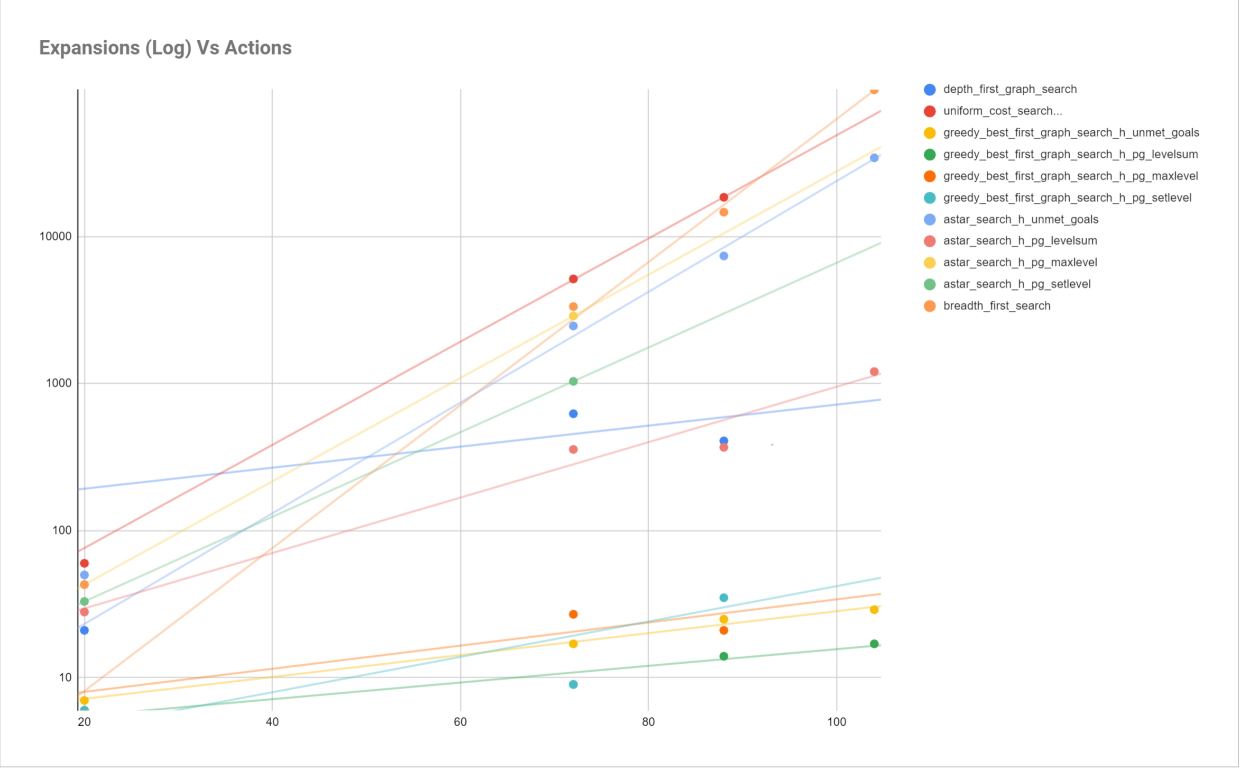
Source Data:

Problem Id	Combo Id	Search Type	Heuristic Type	Actions	Expansions	Goal tests	New Nodes	Time	Plan length	Method Full Name
1	1	breadth_first_search		20	43	56	178	0.0032	6	breadth_first_search_
1	2	depth_first_graph_search		20	21	22	84	0.0015	20	depth_first_graph_search_
1	3	uniform_cost_search		20	60	62	240	0.0039	6	uniform_cost_search_
1	4	greedy_best_first_graph_search	h_unmet_goals	20	7	9	29	0.0006	6	greedy_best_first_graph_search_h_unmet_goals
1	5	greedy_best_first_graph_search	h_pg_levelsum	20	6	8	28	0.1825	6	greedy_best_first_graph_search_h_pg_levelsum
1	6	greedy_best_first_graph_search	h_pg_maxlevel	20	6	8	24	0.1352	6	greedy_best_first_graph_search_h_pg_maxlevel
1	7	greedy_best_first_graph_search	h_pg_setlevel	20	6	8	28	0.8702	6	greedy_best_first_graph_search_h_pg_setlevel
1	8	astar_search	h_unmet_goals	20	50	52	206	0.0040	6	astar_search_h_unmet_goals
1	9	astar_search	h_pg_levelsum	20	28	30	122	0.4585	6	astar_search_h_pg_levelsum
1	10	astar_search	h_pg_maxlevel	20	43	45	180	0.4904	6	astar_search_h_pg_maxlevel
1	11	astar_search	h_pg_setlevel	20	33	35	138	2.3211	6	astar_search_h_pg_setlevel
2	1	breadth_first_search		72	3343	4609	30503	0.8434	9	breadth_first_search_
2	2	depth_first_graph_search		72	624	625	5602	1.1719	619	depth_first_graph_search_
2	3	uniform_cost_search		72	5154	5156	46618	1.4129	9	uniform_cost_search_
2	4	greedy_best_first_graph_search	h_unmet_goals	72	17	19	170	0.0080	9	greedy_best_first_graph_search_h_unmet_goals
2	5	greedy_best_first_graph_search	h_pg_levelsum	72	9	11	86	4.6307	9	greedy_best_first_graph_search_h_pg_levelsum
2	6	greedy_best_first_graph_search	h_pg_maxlevel	72	27	29	249	8.4932	9	greedy_best_first_graph_search_h_pg_maxlevel
2	7	greedy_best_first_graph_search	h_pg_setlevel	72	9	11	84	27.2882	9	greedy_best_first_graph_search_h_pg_setlevel
2	8	astar_search	h_unmet_goals	72	2467	2469	22522	1.0632	9	astar_search_h_unmet_goals
2	9	astar_search	h_pg_levelsum	72	357	359	3426	109.2966	9	astar_search_h_pg_levelsum
2	10	astar_search	h_pg_maxlevel	72	2887	2889	26594	633.1032	9	astar_search_h_pg_maxlevel
2	11	astar_search	h_pg_setlevel	72	1037	1039	9605	2073.6521	9	astar_search_h_pg_setlevel
3	1	breadth_first_search		88	14663	18098	129625	4.9753	12	breadth_first_search_
3	2	depth_first_graph_search		88	408	409	3364	0.4373	392	depth_first_graph_search_
3	3	uniform_cost_search		88	18510	18512	161936	7.1553	12	uniform_cost_search_
3	4	greedy_best_first_graph_search	h_unmet_goals	88	25	27	230	0.0146	15	greedy_best_first_graph_search_h_unmet_goals
3	5	greedy_best_first_graph_search	h_pg_levelsum	88	14	16	126	10.8148	14	greedy_best_first_graph_search_h_pg_levelsum
3	6	greedy_best_first_graph_search	h_pg_maxlevel	88	21	23	195	13.0479	13	greedy_best_first_graph_search_h_pg_maxlevel
3	7	greedy_best_first_graph_search	h_pg_setlevel	88	35	37	345	158.4180	17	greedy_best_first_graph_search_h_pg_setlevel
3	8	astar_search	h_unmet_goals	88	7388	7390	65711	3.8841	12	astar_search_h_unmet_goals
3	9	astar_search	h_pg_levelsum	88	369	371	3403	179.9299	12	astar_search_h_pg_levelsum
3	10	astar_search	h_pg_maxlevel	88						astar_search_h_pg_maxlevel
3	11	astar_search	h_pg_setlevel	88						astar_search_h_pg_setlevel
4	1	breadth_first_search		104	99736	114953	944130	39.7069	14	breadth_first_search_
4	2	depth_first_graph_search		104						depth_first_graph_search_
4	3	uniform_cost_search		104						uniform_cost_search_
4	4	greedy_best_first_graph_search	h_unmet_goals	104	29	31	280	0.0243	18	greedy_best_first_graph_search_h_unmet_goals
4	5	greedy_best_first_graph_search	h_pg_levelsum	104	17	19	165	17.9835	17	greedy_best_first_graph_search_h_pg_levelsum
4	6	greedy_best_first_graph_search	h_pg_maxlevel	104						greedy_best_first_graph_search_h_pg_maxlevel
4	7	greedy_best_first_graph_search	h_pg_setlevel	104						greedy_best_first_graph_search_h_pg_setlevel
4	8	astar_search	h_unmet_goals	104	34330	34332	328509	22.6800	14	astar_search_h_unmet_goals
4	9	astar_search	h_pg_levelsum	104	1208	1210	12210	1029.7602	15	astar_search_h_pg_levelsum
4	10	astar_search	h_pg_maxlevel	104						astar_search_h_pg_maxlevel
4	11	astar_search	h_pg_setlevel	104						astar_search_h_pg_setlevel

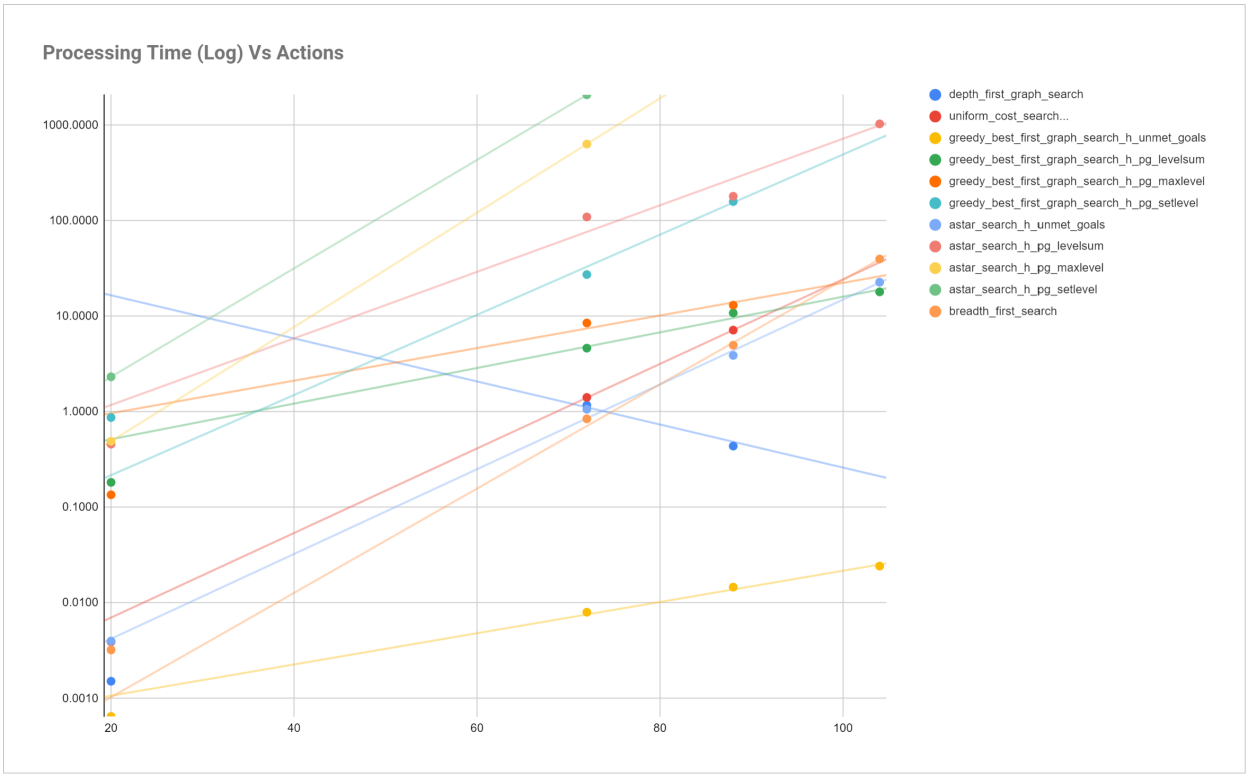
Expansions Vs Actions:
The following chart helps to analyze the number of nodes expanded against the number of actions in the domain.

It looks like Greedy Best First Graph Search has the lower (and more linear) growth than the rest of the search types, with Depth First Search, also more linear. All the others seem to grow exponential as the problem becomes more complex (more actions).



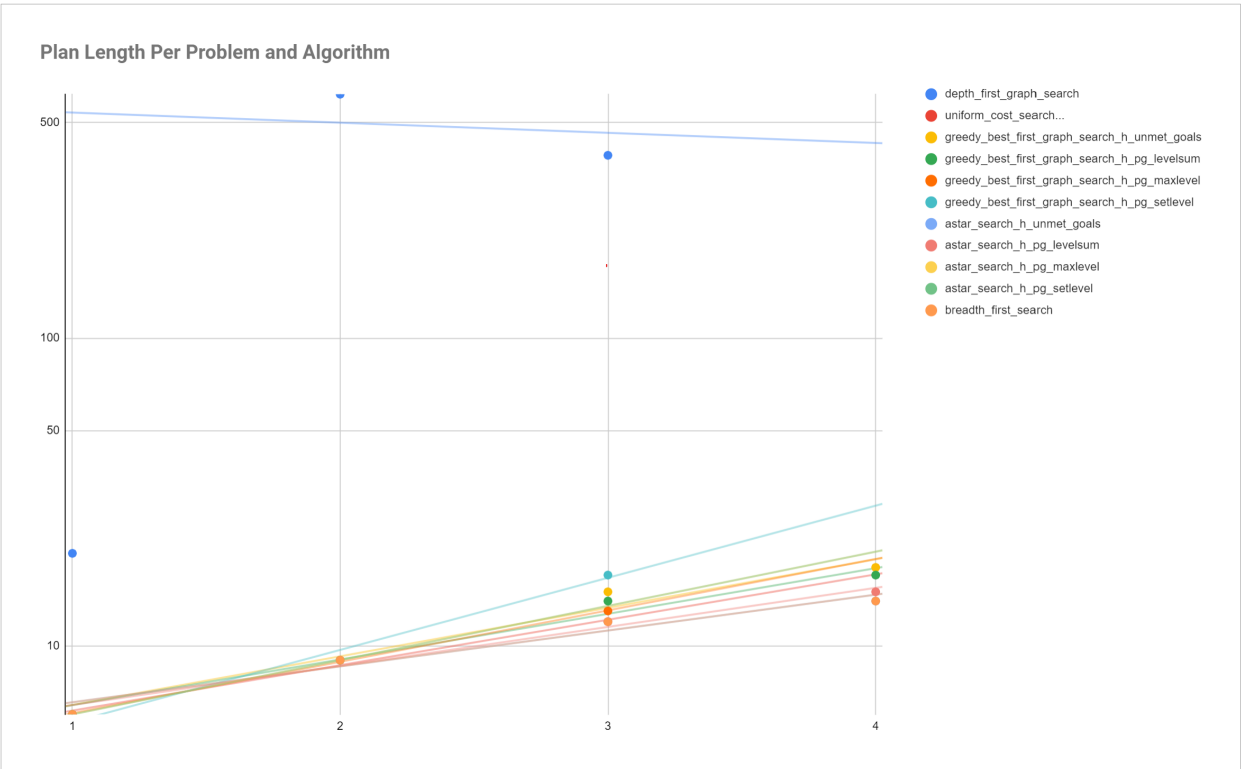
Time Vs Actions:
The following chart to analyze the search time against the number of actions in the domain.

Again It looks like most of the algorithms grow exponentially, by exception Greedy Best First Search, Breadth First Search and AStar, which looks a good fit for large plan scenarios.



Based on the results Breadth First Search and AStar are the best performing algorithms for

Plan Length Per problem and Algorithm:
Report includes a table or chart to analyze the length of the plans returned by each algorithm on all search problems.



Questions:
Which algorithm or algorithms would be most appropriate for planning in a very restricted domain (i.e., one that has only a few actions) and needs to operate in real time?

Based on the tests and results Uniform Cost Search and Greedy Best First Search looks the most appropriate for domains with a low number of actions.

Which algorithm or algorithms would be most appropriate for planning in very large domains (e.g., planning delivery routes for all UPS drivers in the U.S. on a given day)

Greedy Best First Search is no doubt the more suitable algorithm for large domains, since its times are several orders less than the rest for these scenarios.

Which algorithm or algorithms would be most appropriate for planning problems where it is important to find only optimal plans?

Breadth_first_search and AStar are the 2 suitable algorithms to find optimal plans and low processing times.