IT351 – Human Computer Interaction

Assignment 1 – Fitts's Law

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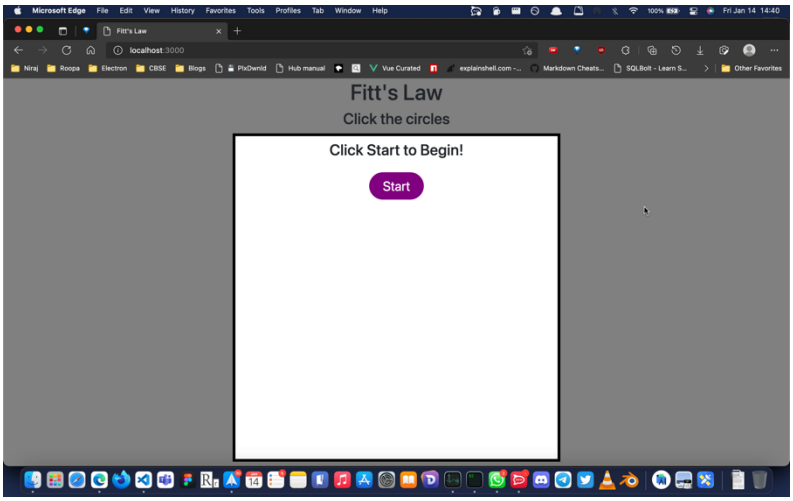
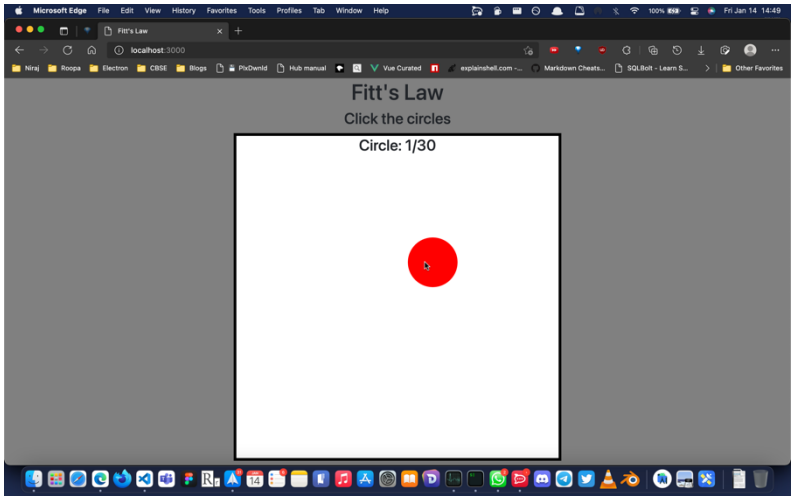
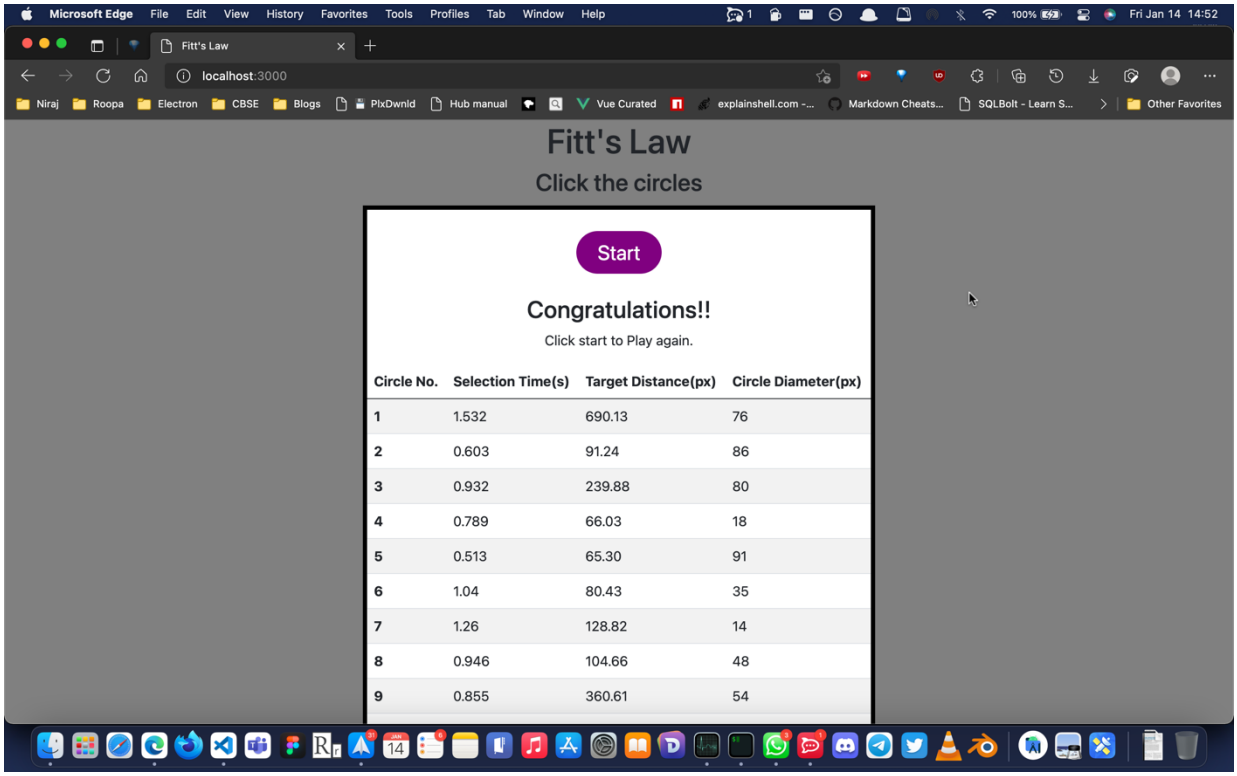
Fitts's Law states that the time taken for a person to move a pointer or cursor to a target area is a function of the distance of the distance to the target divided by the size of the target. Hence, longer the distance and smaller the target's size, longer the selection time.

An interface was created to demonstrate this law. The user will be shown 30 circles of varying diameter and made to click on them all the while recording their selection time. A table is shown at the end of the experiment with the selection time, diameter of circle and circle distance from cursor. There is also a graph between diameter of target and selection time of the target. This experiment also compares the difference when using a touchpad and a mouse.

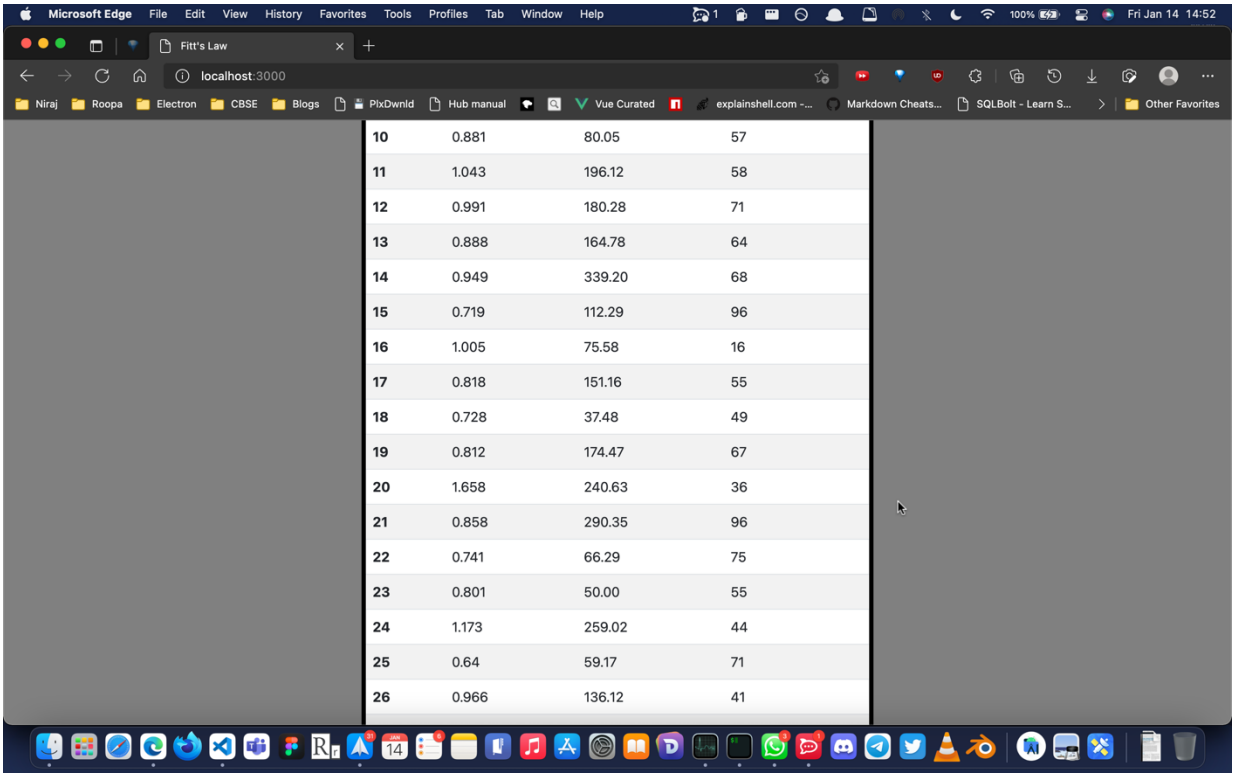




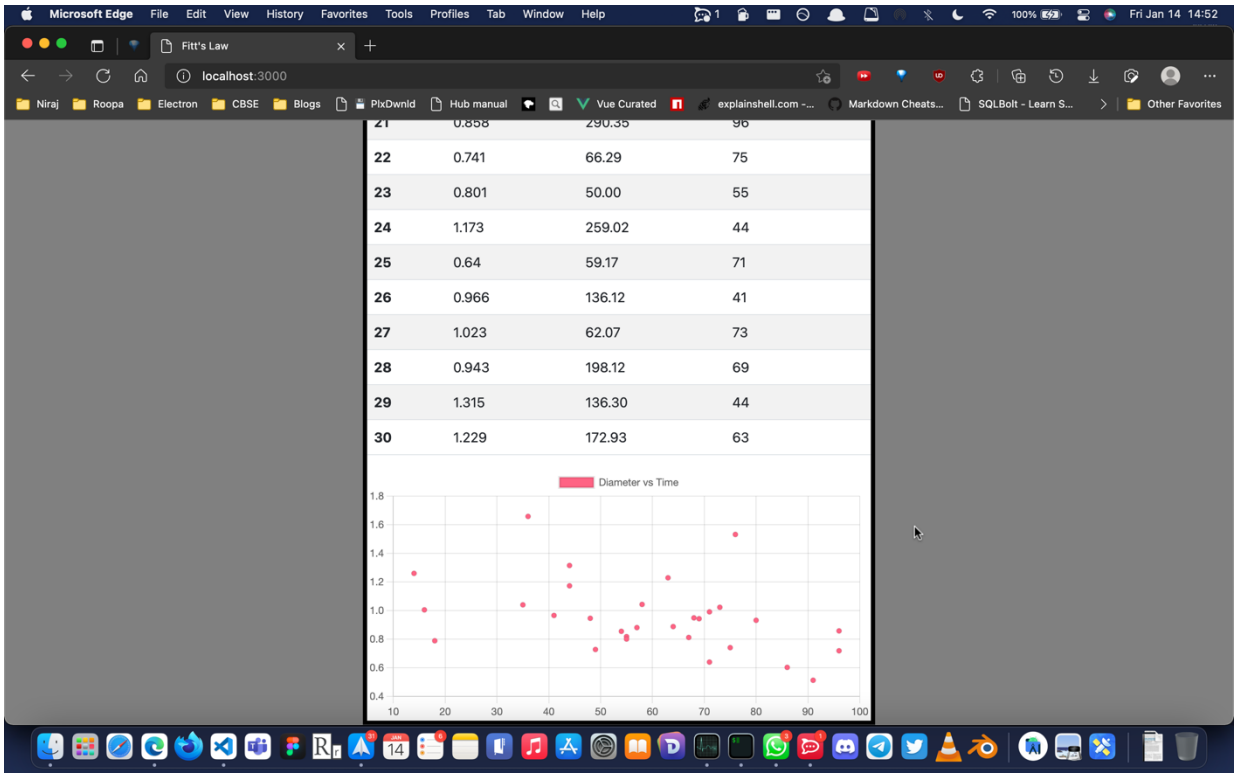
Results when using Touchpad



Circle No.	Selection Time(s)	Target Distance(px)	Circle Diameter(px)
1	1.532	690.13	76
2	0.603	91.24	86
3	0.932	239.88	80
4	0.789	66.03	18
5	0.513	65.30	91
6	1.04	80.43	35
7	1.26	128.82	14
8	0.946	104.66	48
9	0.855	360.61	54

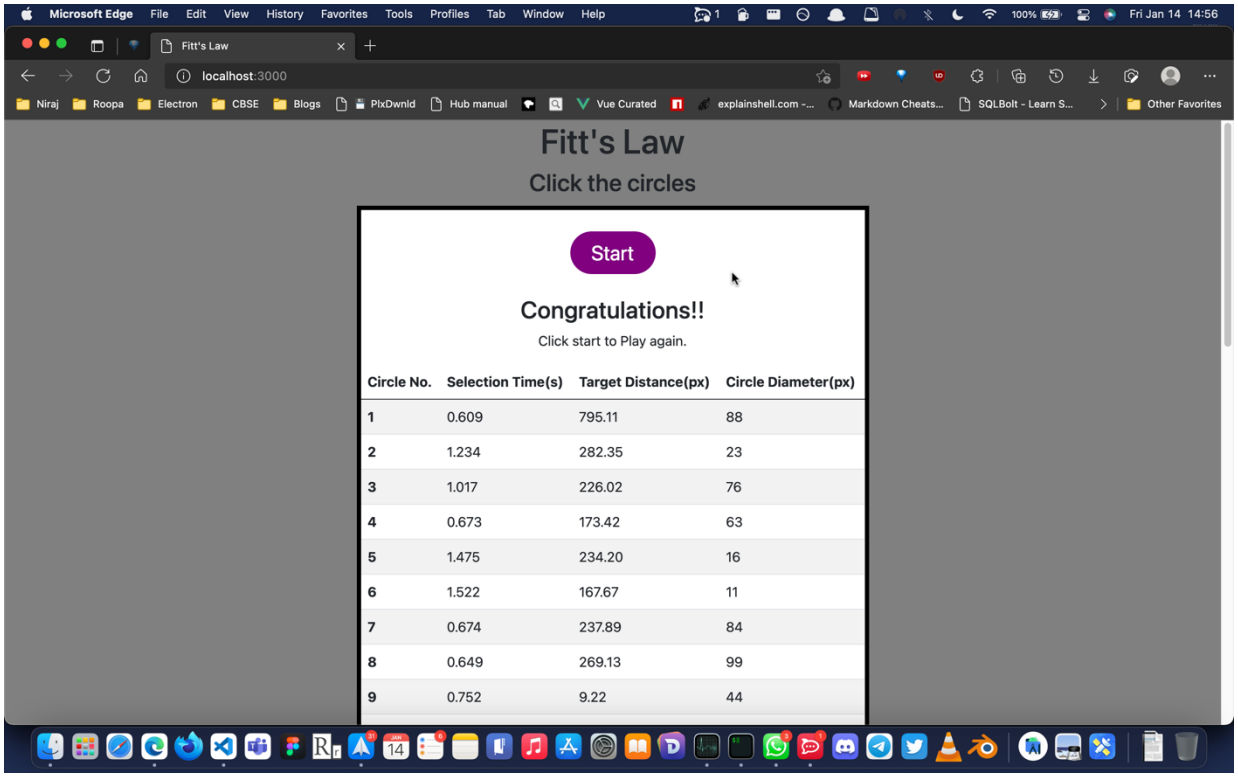


10	0.881	80.05	57
11	1.043	196.12	58
12	0.991	180.28	71
13	0.888	164.78	64
14	0.949	339.20	68
15	0.719	112.29	96
16	1.005	75.58	16
17	0.818	151.16	55
18	0.728	37.48	49
19	0.812	174.47	67
20	1.658	240.63	36
21	0.858	290.35	96
22	0.741	66.29	75
23	0.801	50.00	55
24	1.173	259.02	44
25	0.64	59.17	71
26	0.966	136.12	41

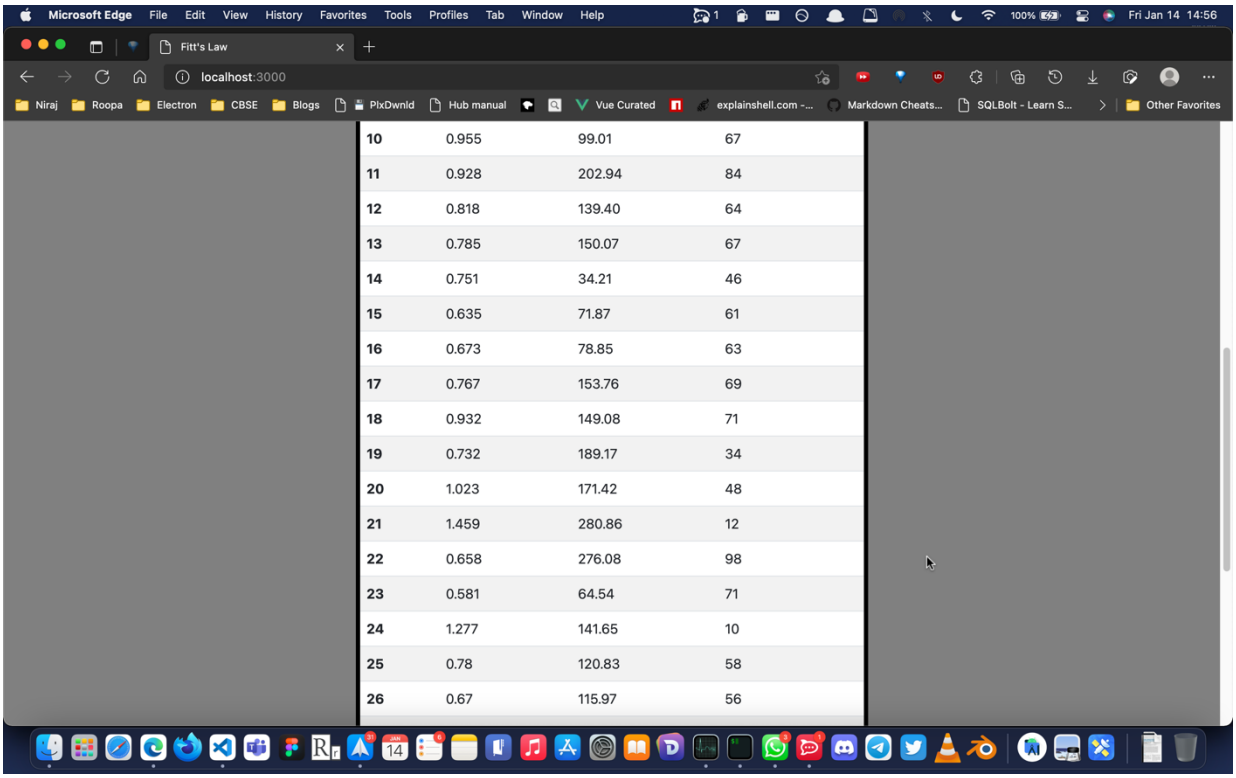


21	0.858	290.35	96
22	0.741	66.29	75
23	0.801	50.00	55
24	1.173	259.02	44
25	0.64	59.17	71
26	0.966	136.12	41
27	1.023	62.07	73
28	0.943	198.12	69
29	1.315	136.30	44
30	1.229	172.93	63

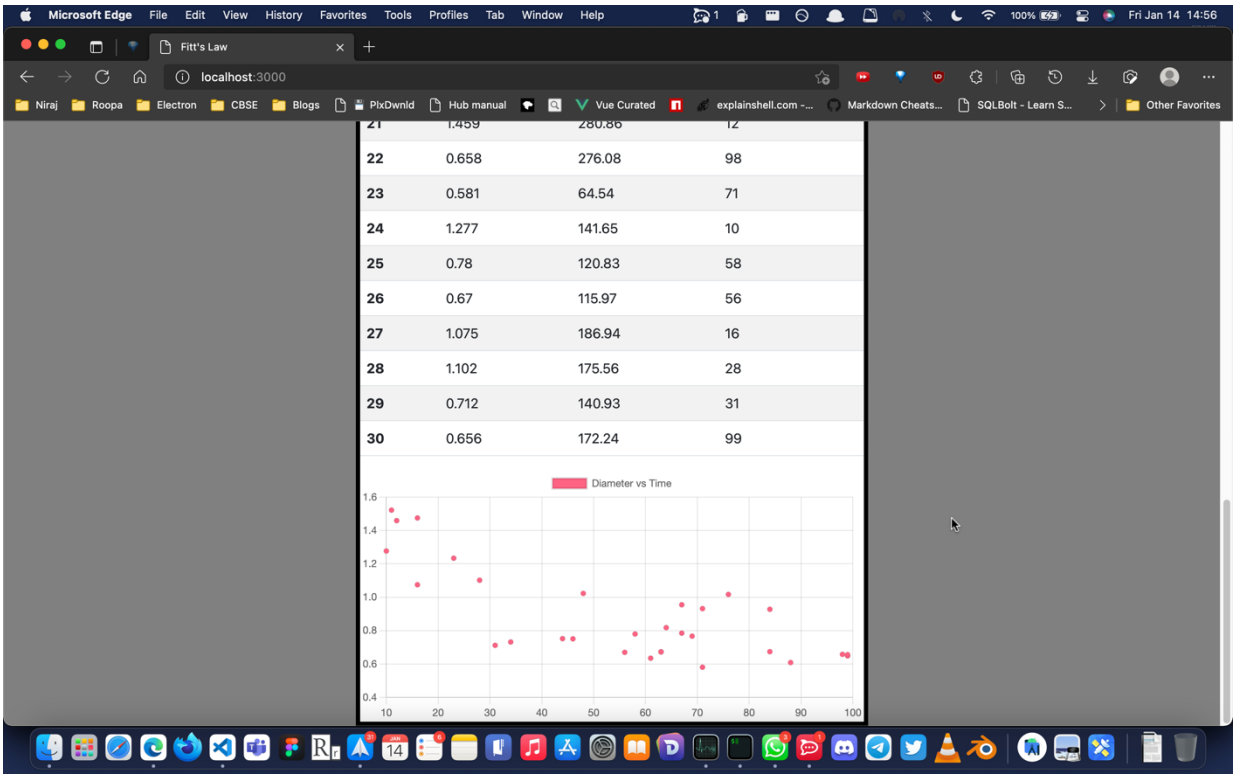
Results when using Mouse



Circle No.	Selection Time(s)	Target Distance(px)	Circle Diameter(px)
1	0.609	795.11	88
2	1.234	282.35	23
3	1.017	226.02	76
4	0.673	173.42	63
5	1.475	234.20	16
6	1.522	167.67	11
7	0.674	237.89	84
8	0.649	269.13	99
9	0.752	9.22	44



10	0.955	99.01	67
11	0.928	202.94	84
12	0.818	139.40	64
13	0.785	150.07	67
14	0.751	34.21	46
15	0.635	71.87	61
16	0.673	78.85	63
17	0.767	153.76	69
18	0.932	149.08	71
19	0.732	189.17	34
20	1.023	171.42	48
21	1.459	280.86	12
22	0.658	276.08	98
23	0.581	64.54	71
24	1.277	141.65	10
25	0.78	120.83	58
26	0.67	115.97	56



21	1.459	280.86	12
22	0.658	276.08	98
23	0.581	64.54	71
24	1.277	141.65	10
25	0.78	120.83	58
26	0.67	115.97	56
27	1.075	186.94	16
28	1.102	175.56	28
29	0.712	140.93	31
30	0.656	172.24	99

Conclusion – From the above graphs and tables, we can see that the average selection time for mouse is lesser than when using a touchpad. Hence, using a touchpad increases the target selection difficulty as compared with a mouse.