

Unit Six Assignment Three:

Write a Java project (applet) that will compare the Sequential Search to the Binary Search. Your applet should contain just one JTextArea. First the JTextArea will contain the heading "The Array", followed by a blank line, followed by the first 300 elements of the following sequence...

```
{1, 2, 4, 7, 11, 16, ...}
```

with 20 lines of data & 15 elements per line. Next, the JTextArea should contain the title "Search Comparisons using the # of visits to the Array", followed by a blank line, followed by the headings "Number Sequential Binary", followed by the actual search comparisons. Your applet should look similar to the applet included with this assignment.

The following numbers are the numbers I want you to search for and they should be placed in an array.

```
{2, 2629, 11176, 27032, 43661}
```

Your project should have two instance variables, in addition to the JTextArea. The first one is the array that contains the first 300 elements of the sequence. This array should be filled in a method called BuildArray. The second one is the array that contains the 5 target values. You can fill this array at the same time you are declaring it.

Your project must also contain a method called Sequential and a method called Binary. Both methods are passed the target value and return the number of visits to the array. If the target is not found, a -1 should be returned.

Obviously, because of the GUI, your project will have an init() method whose major responsibility is to call the other methods.

Paste your output into a Word document (use landscape orientation) and turn it in with the code.

Applet Viewer: U6A3.class

Applet

The Array

1	2	4	7	11	16	22	29	37	46	56	67	79	92	106
121	137	154	172	191	211	232	254	277	301	326	352	379	407	436
466	497	529	562	596	631	667	704	742	781	821	862	904	947	991
1036	1082	1129	1177	1226	1276	1327	1379	1432	1486	1541	1597	1654	1712	1771
1831	1892	1954	2017	2081	2146	2212	2279	2347	2416	2486	2557	2629	2702	2776
2851	2927	3004	3082	3161	3241	3322	3404	3487	3571	3656	3742	3829	3917	4006
4096	4187	4279	4372	4466	4561	4657	4754	4852	4951	5051	5152	5254	5357	5461
5566	5672	5779	5887	5996	6106	6217	6329	6442	6556	6671	6787	6904	7022	7141
7261	7382	7504	7627	7751	7876	8002	8129	8257	8386	8516	8647	8779	8912	9046
9181	9317	9454	9592	9731	9871	10012	10154	10297	10441	10586	10732	10879	11027	11176
11326	11477	11629	11782	11936	12091	12247	12404	12562	12721	12881	13042	13204	13367	13531
13696	13862	14029	14197	14366	14536	14707	14879	15052	15226	15401	15577	15754	15932	16111
16291	16472	16654	16837	17021	17206	17392	17579	17767	17956	18146	18337	18529	18722	18916
19111	19307	19504	19702	19901	20101	20302	20504	20707	20911	21116	21322	21529	21737	21946
22156	22367	22579	22792	23006	23221	23437	23654	23872	24091	24311	24532	24754	24977	25201
25426	25652	25879	26107	26336	26566	26797	27029	27262	27496	27731	27967	28204	28442	28681
28921	29162	29404	29647	29891	30136	30382	30629	30877	31126	31376	31627	31879	32132	32386
32641	32897	33154	33412	33671	33931	34192	34454	34717	34981	35246	35512	35779	36047	36316
36586	36857	37129	37402	37676	37951	38227	38504	38782	39061	39341	39622	39904	40187	40471
40756	41042	41329	41617	41906	42196	42487	42779	43072	43366	43661	43957	44254	44552	44851

Search Comparisons using # of visits to the Array

Number	Sequential	Binary
2	2	7
2629	73	8
11176	150	1
27032	Not Found	Not Found
43661	296	6

Applet started.