

CE311K Lab 7 Solution

Code:

```
Public Class Form1

    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Button1.Click
        Dim flow(0 To 100), exceedance(0 To 100) As Double
        Dim count As Integer
        Dim sr As IO.StreamReader =
IO.File.OpenText("C:\temp\flow_w_date.csv")
        Dim sw As IO.StreamWriter =
IO.File.CreateText("C:\temp\sortFlow.txt")
        Dim line, field(0 To 1) As String
        Dim temp As Double
        Dim i, j As Integer

        count = 0
        Do While sr.Peek <> -1
            line = sr.ReadLine
            field = line.Split(",")
            flow(count) = field(1)
            count = count + 1
        Loop

        sr.Close()
        For j = 1 To count - 1
            temp = flow(j)
            i = j - 1
            While (i >= 0 And flow(i) > temp)
                flow(i + 1) = flow(i)
                i = i - 1
            End While
            If i < 0 Then
                Exit While
            End If
            flow(i + 1) = temp
        Next

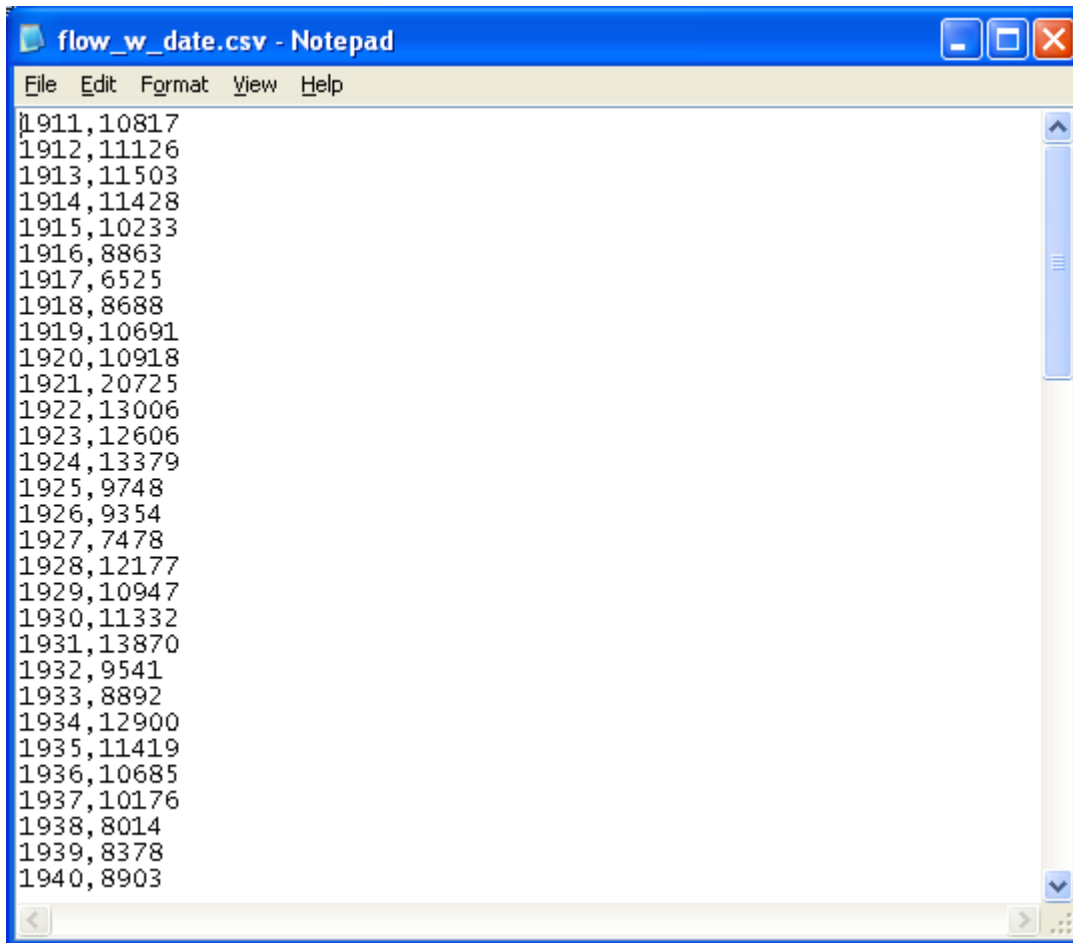
        For i = 1 To count
            exceedance(i - 1) = 1.0 - (i) / ((count) + 1)
        Next

        For j = 0 To count - 1
            ListBox1.Items.Add(j + 1 & " " & flow(j) & " " &
exceedance(j))
            sw.WriteLine(j + 1 & " " & flow(j) & " " & exceedance(j))
        Next
        sw.Close()

    End Sub

End Class
```

Sample Input File



```
flow_w_date.csv - Notepad
File Edit Format View Help
1911,10817
1912,11126
1913,11503
1914,11428
1915,10233
1916,8863
1917,6525
1918,8688
1919,10691
1920,10918
1921,20725
1922,13006
1923,12606
1924,13379
1925,9748
1926,9354
1927,7478
1928,12177
1929,10947
1930,11332
1931,13870
1932,9541
1933,8892
1934,12900
1935,11419
1936,10685
1937,10176
1938,8014
1939,8378
1940,8903
```

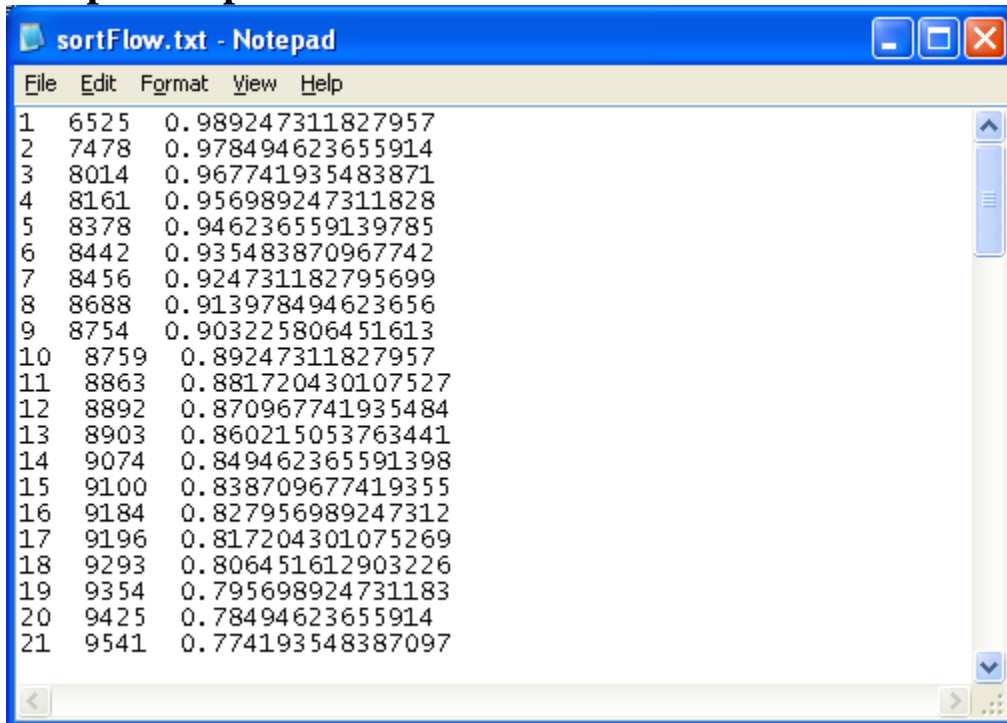
Output

```
1 6525 0.989247311827957
2 7478 0.978494623655914
3 8014 0.967741935483871
4 8161 0.956989247311828
5 8378 0.946236559139785
6 8442 0.935483870967742
7 8456 0.924731182795699
8 8688 0.913978494623656
9 8754 0.903225806451613
10 8759 0.89247311827957
11 8863 0.881720430107527
12 8892 0.870967741935484
13 8903 0.860215053763441
14 9074 0.849462365591398
15 9100 0.838709677419355
16 9184 0.827956989247312
17 9196 0.817204301075269
18 9293 0.806451612903226
19 9354 0.795698924731183
```

20	9425	0.78494623655914
21	9541	0.774193548387097
22	9748	0.763440860215054
23	10134	0.752688172043011
24	10148	0.741935483870968
25	10176	0.731182795698925
26	10233	0.720430107526882
27	10257	0.709677419354839
28	10303	0.698924731182796
29	10343	0.688172043010753
30	10362	0.67741935483871
31	10446	0.666666666666667
32	10531	0.655913978494624
33	10546	0.645161290322581
34	10605	0.634408602150538
35	10685	0.623655913978495
36	10691	0.612903225806452
37	10700	0.602150537634409
38	10746	0.591397849462366
39	10817	0.580645161290323
40	10826	0.56989247311828
41	10857	0.559139784946237
42	10890	0.548387096774194
43	10918	0.537634408602151
44	10929	0.526881720430108
45	10947	0.516129032258065
46	11040	0.505376344086022
47	11126	0.494623655913979
48	11204	0.483870967741936
49	11313	0.473118279569893
50	11332	0.46236559139785
51	11365	0.451612903225806
52	11419	0.440860215053763
53	11428	0.43010752688172
54	11503	0.419354838709677
55	11725	0.408602150537634
56	11814	0.397849462365591
57	11952	0.387096774193548
58	12034	0.376344086021505
59	12177	0.365591397849462
60	12179	0.354838709677419
61	12606	0.344086021505376
62	12614	0.333333333333333
63	12615	0.32258064516129
64	12814	0.311827956989247
65	12818	0.301075268817204
66	12844	0.290322580645161
67	12900	0.279569892473118
68	12994	0.268817204301075
69	13003	0.258064516129032
70	13006	0.247311827956989
71	13248	0.236559139784946
72	13379	0.225806451612903
73	13400	0.21505376344086
74	13532	0.204301075268817
75	13635	0.193548387096774
76	13689	0.182795698924731

77	13870	0.172043010752688
78	14206	0.161290322580645
79	14316	0.150537634408602
80	14477	0.139784946236559
81	14511	0.129032258064516
82	14638	0.118279569892473
83	14760	0.10752688172043
84	14946	0.0967741935483871
85	14979	0.0860215053763441
86	15036	0.0752688172043011
87	15062	0.0645161290322581
88	15242	0.053763440860215
89	16504	0.043010752688172
90	16675	0.032258064516129
91	18754	0.021505376344086
92	20725	0.010752688172043

Sample Output:



```
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14 9074 0.849462365591398
15 9100 0.838709677419355
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17 9196 0.817204301075269
18 9293 0.806451612903226
19 9354 0.795698924731183
20 9425 0.78494623655914
21 9541 0.774193548387097
```

