

Sort of Turkey's top 20 banks by cipher suite value

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Abstract

Today, the main purpose of increasing importance of banks that transfer funds and expanding application areas [1]. As in all areas of the financial sector on security is an important issue. Cloud technology and the increasing importance of security issues in this area is not limited because it is not certain can occur unexpectedly. The aim of this study is located in the ranking of the top 20 banks in Turkey in 2014 [2] is classified according to various criteria. This is undoubtedly one of the troughs with the classification criteria is their Cipher Suite.

Keywords: Missing Value, Ranking, SSL.

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1. Introduction

The Bank can be exchanged currency interest rate, credit, discount, making foreign exchange transactions, money in the safe, valuable documents, stores and other commercial goods outside of it, and called for financial institutions located in economic activity [3]. Banks in Turkey are sorted according to various criteria. This classification in general; deposit banks, participation banks, savings deposit insurance fund, development banks and investment banks [4].

In this study subject sorting in this study are as follows. It said first sequence is provided with various characteristics of the base. Banks are listed in itself according to these features. Cipher suite features not found values are filled in various ways. Sorted wholesale banks in several listed according to the latest value. The effect has been observed in the ranking of the cipher suite value [5].

1.1. Data Of The Study

Banks used various criteria when ranked. Some of these properties are shown in Table 1. Bank names are not included in the ranking of the main goal of the company is not to be compared.

Table 1. Various Characteristics Of The Banks, Ranking and Name Of Their Own Cipher Suite[5]

Ranking	Year Established	Assets	Deposits	Number of Branches	Number Of Staff	Name Of Cipher Suite	Level Of Cipher Suite
1.	1863	23834	150840	1.686	24.002	-	-
2.	1924	23098	130461	1.348	24.112	TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA2	19
3.	1946	21489	113886	995	19.201	TLS_RSA_WITH_AES_128_CBC_SHA	48
4.	1948	20204	113112	999	16.416	SSL_RSA_WITH_3DES_EDE_CBC_SHA	11
5.	1944	16871	100012	978	17.734	-	-
6.	1938	14980	101462	891	15.070	TLS_RSA_WITH_AES_128_CBC_SHA256	61
7.	1954	14726	89197,4	879	14.721	SSL_RSA_WITH_RC4_128_MD5	5
8.	1987	74544,	42219,4	666	13.036	SSL_RSA_WITH_RC4_128_MD5	5
9.	1997	70191,	41118,3	711	13.084	SSL_RSA_WITH_RC4_128_SHA	6
10.	1927	61449	38772,9	550	10.205	SSL_RSA_WITH_3DES_EDE_CBC_SHA	11
11.	1984	38522,	18810,6	327	6.152	TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA	16
12.	1990	33202,	18517,8	311	5.649	TLS_RSA_WITH_AES_128_CBC_SHA	48
13.	2012	21993,	17819,9	45	1.319	SSL_RSA_WITH_RC4_128_SHA	6
14.	1953	20532,	13346,3	312	4.333	TLS_RSA_WITH_AES_128_CBC_SHA256	61
15.	1992	11112,	5707,44	73	1.233	-	-
16.	1996	9361,7	5707,44	114	1.848	-	-
17.	1984	7742,4	5088,69	66	1.214	SSL_RSA_WITH_3DES_EDE_CBC_SHA	11
18.	1992	7680,6	4701,4	60	1.029	TLS_RSA_WITH_AES_128_CBC_SHA	48
19.	1991	5083,3	3710,65	32	599	-	-
20.	1986	3782,1	2480,95	44	857	-	-

Table 1 shows the value of tangible assets, which have the term natural or a legal person means property or intangible rights. When asked if the concept of deposits in banks and other credit institutions or a specific term or to withdraw money deposited is at the end of the notice period.

A cipher suite is a named combination of authentication, encryption, message authentication code (MAC) and key exchange algorithms used to negotiate the security settings for a network connection using the Transport Layer Security (TLS) / Secure Sockets Layer (SSL) network protocol[6]. Cipher suite contain a number of security mechanism. Bu it is out of the scope of the paper. In this paper main aim level number of cipher suite mechanism. If level number of cipher suite mechanism of bank is higher than any one, it means it has better security mechanism in total.

1.2. Ranking According To Various Criteria Without Level Of Cipher Suites

Banks are sorted according to various criteria to banks in Table 2.

Table 2. Ranking According To Various Criteria Without Level Of Cipher Suites

Ranking	Year	Assets	Deposits	Branch	Staff
1	1	1	1	1	2
2	2	2	2	2	1
3	10	3	3	4	3
4	6	4	4	3	5
5	5	5	6	5	4
6	3	6	5	6	6
7	4	7	7	7	7
8	14	8	8	9	9
9	7	9	9	8	8
10	11	10	10	10	10
11	17	11	11	11	11
12	20	12	12	14	12
13	8	13	13	12	14
14	12	14	14	16	16
15	19	15	15	15	13
16	15	16	16	17	15
17	18	17	17	18	17
18	16	18	18	13	18
19	9	19	19	20	20
20	13	20	20	19	19

1.3. Methods Of Filling Missing Values

This section contains the cipher suite values are not the values of the bank will be assessed by filling in various ways. How to put out that rankings are not affected by the objective value of the bank is to interpret the value obtained. Empty values are filled in with the appropriate method listed on its own merits. Missing value methods are as follows [7]:

Serian Mean: Fill empty data is method to the average of the series.

Mean of Nearby Points: Below the missing value used in calculating the average value and the arithmetic mean of the full observation above, this value is written instead of missing observations.

Median Nearby Points: The median and below the missing value used in calculating a median observation utilizing the full value calculated above and this value is written instead of missing observations.

Linear Trend: The present series from 1 to n until the missing information is placed in a scaled index variables foreseen value.

Table 3. Ranking By filling Out The Empty Cipher Suite Value of Different Methods

Default Ranking	Series Mean	Mean of Nearby Points	Median Nearby Points	Linear Trend			
				Degree: 2	Degree: 3	Degree: 4	Degree: 5
1	49	49	8	114	223	391	377
2	196	196	196	100	146	191	189
3	48	48	48	86	88	65	68
4	11	11	11	74	46	1	1
5	49	62	108	63	19	1	1
6	61	61	61	54	5	1	1
7	5	5	5	46	1	1	1
8	5	5	5	40	4	12	10
9	6	6	6	35	14	36	35
10	11	11	11	31	27	55	54
11	167	167	167	29	42	65	65
12	48	48	48	28	56	64	64
13	6	6	6	29	68	55	54
14	61	61	61	31	75	40	36
15	49	41	33	35	75	24	16
16	49	41	33	40	66	14	2
17	11	11	11	46	45	19	6
18	48	48	48	54	11	51	42
19	49	49	9	63	1	122	26
20	49	49	9	74	1	248	280

Values obtained according to various methods of filling empty value shown in Table 4.

Tables 4. Bank relationships sorted table with full values

	Assets	Branch.	Deposits	LinearTrenddegree2
Assets	1.0000000	0.9684211	0.9984962	-0.5042570
Branch.	0.9684211	1.0000000	0.9669173	-0.5358619
Deposits	0.9984962	0.9669173	1.0000000	-0.5010610
LinearTrenddegree2	-0.5042570	-0.5358619	-0.5010610	1.0000000
LinearTrenddegree3	-0.4625709	-0.4204532	-0.4603203	0.5733086
LinearTrenddegree4	-0.1322552	-0.1462242	-0.1322552	0.6918259
LinearTrendDegree5	0.1434734	0.1089883	0.1434734	0.3478108
MeanofNearbyPoints	-0.1973966	-0.1867792	-0.1972197	0.3003330
MedianNearbyPoints	-0.2911602	-0.2826496	-0.2834679	0.1626593
Ranking	1.0000000	0.9684211	0.9984962	-0.5042570
Series.Mean	-0.1850990	-0.1744611	-0.1872266	0.2957936
Staff	0.9864662	0.9624060	0.9834586	-0.5042570
Year	0.6902256	0.7142857	0.6932331	-0.5994267

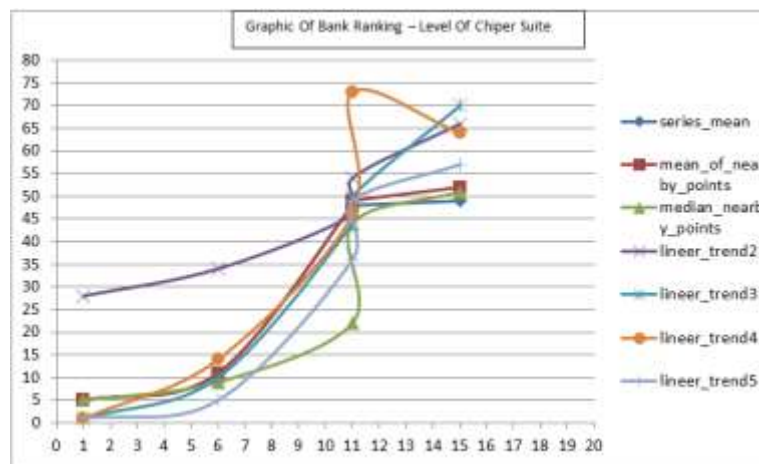
Tables 4. Bank relationships sorted table with full values (Continue)

	LineerTrenddegree3	LineerTrenddegree4	LineerTrendDegree5
Assets	-0.4625709	-0.13225520	0.143473398
Branch.	-0.4204532	-0.14622423	0.108988312
Deposits	-0.4603203	-0.13225520	0.143473398
LineerTrenddegree2	0.5733086	0.69182589	0.347810843
LineerTrenddegree3	1.0000000	0.64376978	0.120441718
LineerTrenddegree4	0.6437698	1.00000000	0.581535179
LineerTrendDegree5	0.1204417	0.58153518	1.000000000
MeanofNearbyPoints	0.3475593	0.30414921	0.442303019
MedianNearbyPoints	0.2354867	0.04129471	0.277999165
Ranking	-0.4625709	-0.13225520	0.143473398
Series.Mean	0.3559021	0.31464460	0.452698353
Staff	-0.4471384	-0.12117010	0.099852338
Year	-0.2884738	-0.30438974	-0.005790406

	MeanofNearbyPoints	MedianNearbyPoints	Ranking	Series.Mean
Assets	-0.19739664	-0.29116020	1.0000000	-0.18509900
Branch.	-0.18677916	-0.28264962	0.9684211	-0.17446113
Deposits	-0.19721968	-0.28346794	0.9984962	-0.18722658
LineerTrenddegree2	0.30033303	0.16265933	-0.5042570	0.29579356
LineerTrenddegree3	0.34755932	0.23548669	-0.4625709	0.35590211
LineerTrenddegree4	0.30414921	0.04129471	-0.1322552	0.31464460
LineerTrendDegree5	0.44230302	0.27799916	0.1434734	0.45269835
MeanofNearbyPoints	1.00000000	0.93842538	-0.1973966	0.99832699
MedianNearbyPoints	0.93842538	1.00000000	-0.2911602	0.92422329
Ranking	-0.19739664	-0.29116020	1.0000000	-0.18509900
Series.Mean	0.99832699	0.92422329	-0.1850990	1.00000000
Staff	-0.23172649	-0.33322213	0.9864662	-0.21718992
Year	-0.08626702	-0.08101422	0.6902256	-0.07375592

	Staff	Year
Assets	0.98646617	0.690225564
Branch.	0.96240602	0.714285714
Deposits	0.98345865	0.693233083
LineerTrenddegree2	-0.50425704	-0.599426678
LineerTrenddegree3	-0.44713844	-0.288473822
LineerTrenddegree4	-0.12117010	-0.304389738
LineerTrendDegree5	0.09985234	-0.005790406
MeanofNearbyPoints	-0.23172649	-0.086267022
MedianNearbyPoints	-0.33322213	-0.081014222
Ranking	0.98646617	0.690225564
Series.Mean	-0.21718992	-0.073755924
Staff	1.00000000	0.663157895
Year	0.66315789	1.000000000

Tables 5. Graphic Of Bank Ranking – Level Of Cipher Suite



2. Interpretation

The conclusions of the search are as follows in Table 5 and Table 6. Ranking according to the variables when the asset is seen. Deposits ranking second in the ranking was influencing variables. The number of employees related to this bank branch was followed by numerous and anniversary. The conclusion emerging from this table, banks in the ranking of number of employees, while bank deposits and the most effective, the anniversary is not much relationship. To be an important variable when a normal result of depositors in the bank ranking, building year surprise to be an important variable in the parameter results. It has been observed that the relationship between assets and deposits of banks. This is a normal situation in Turkey is to determine the amount of bank deposits in proportion to their presence mandatory. There is a correlation between the presences of banks with branches. This inference is not surprising. There is a correlation between assets and Employees. So far the results are not surprising. In this case, there is evidence of the accuracy of the data. Means of nearby points with the series mean and median nearby points mean of nearby points is concluded to be associated. As the cause of this condition can be shown to be close to the average and median values of the data. The terms are not exactly related to the ultimate outcome of the bank missing value method is not related to the values of cipher.

3. Conclusion

As a result, the ranking of the value of the bank cipher suite which turned out to be very important. According to data obtained when examining banks cipher suite values were observed to good use as the key exchange algorithm of SHA. RSA instead, it would have observed a faster result [8]. But the key exchange algorithms used in symmetric encryption algorithms generally. It was observed that the ECC (Elliptic Curve Cryptography) algorithm used by small banks. The reason for this is the difficulty of constructing the system although the ECC fast [9]. Organizations old history of the bank appeared more importance given to security. Utilization of TLS and SSL protocols by banks was very close.

Cipher suite used by the Bank of value was found to be very different. For this reason, it was observed that there was no unity among banks. One reason that banks want to stay at a different level, you may wish to prevent damage to their banks in the face of a direct assault. In this case, the banks have failed to show exactly which protocols will be used in combination. Because the two protocols developed for the bad side of each other from time to time emerge until well as bad sides.

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