

Unigram Analysis of Urdu Names for a Speech Recognition Application

Abstract: This paper presents the methodology used to select the vocabulary for a speech recognition system. The vocabulary under consideration is a set of names of Urdu speaking people. The results obtained are also presented, along with some interesting observations made during the process and some additional data.

Keywords: corpus, unigram, data analysis, names, vocabulary

1. INTRODUCTION

This paper describes the process used to select approximately 150 names that will form the vocabulary for a speech recognition system that is to be developed. The data source used is the PTCL directory software.

This paper describes the methodology used to select the names and the results obtained (the names selected with phonemic transcriptions and also the frequency distribution of other names in the directory and spelling variations in names).

2. LITERATURE REVIEW AND PROBLEM STATEMENT

Documented techniques for vocabulary selection are usually based on the principle of maximum likelihood of occurrence of words, e.g. in a multi-lingual machine translation system, JANUS (Suhm, Ries and Geutner).

Another technique is documented in "Word Confusability Measures For Vocabulary Selection In Speech Recognition" by Beng Tan, Yong Gu, Trevor Thomas (Tan and Gu). The study investigates a measure of word confusability, and aims to design a good vocabulary set with least confused words.

(Jelinek, 1997) gives a brief discussion on vocabulary selection and personalization from text databases. Some statistics are also given on the relation of vocabulary size and recognition rate of speech recognition systems.

Our problem is to select a set of names (approximately 150) from the data source (the PTCL directory).

3. TERMINOLOGY USED

In this section the terminology used in the paper is explained with the help of examples.

Example 1: The name SARFRAZ AHMED BUTT is a full name, consisting of three individual names, SARFRAZ, AHMED and BUTT.

Example 2: If there is a list of individual names as follows:

HAYAT
YASIN
RAZZAQ
HAYAT
RAZZAQ
YASIN
REHMAT
RAZZAQ,

It will be said to contain 8 total (individual) names, the four distinct (individual) names HAYAT, YASIN, RAZZAQ and REHMAT with frequencies (i.e. the number of times each individual name occurs) 2, 2, 3, and 1 respectively, and cumulative frequency 8.

Table 1 shows the format used in the paper to represent the frequency/probability distribution of any list of names, using the dummy data given above. The probability of a given name is defined as:

$$\frac{n}{N}, \quad (1)$$

where n is the number of times that that particular name occurs and N is the number of times all names occur, e.g. the probability of RAZZAQ is calculated as:

$$\frac{3}{8} = 0.375$$

Table 1 Frequency / probability distribution for dummy data given in Example 2.

#	Name:	Freq:	Prob:
1	RAZZAQ	3	0.375
2	HAYAT	2	0.25
3	YASIN	2	0.25
4	REHMAT	1	0.125
		8	

4. METHODOLOGY

To select about 150 names from the directory the following steps will be followed:

1. A program written in C++ (using the Visual C++ 6.0 compiler) will be used to separate the individual names making up the full names from the PTCL directory and get their frequency distribution; every sequence of characters separated by white spaces or any of the following characters will be considered an individual name:
[] () & . - , / _ \ ; * + =
2. A threshold frequency value will be decided based on the results of step one. Any names below this frequency will be discarded. This will be done as the data may be quite extensive and only about 150 names are required.

3. From the frequency distribution obtained, names that are the same but have different spellings will be merged manually, and names that are not required (e.g. parts of company names etc) will be discarded. The merging will be done since eventually the phonetic transcriptions of the names will be required, and same names with different spellings will be transcribed in the same way.
4. The 150 names with the highest frequencies will be selected.
5. Some names will be inserted so that names starting with all Urdu Language phonemes can be included. If a particular phoneme is not in the beginning of any name, the highest frequency name of all the names that started with that phoneme will be added to the 150 names.
6. Some additional names will be inserted.

5. RESULTS

The results with respect to the steps listed above were as follows:

1. There were 517439 complete names in the PTCL directory; the first step (extraction of individual names) resulted in 44358 distinct individual names with a cumulative frequency of 1503967 (here if a name had n different spellings, it was counted as n different names).
2. From the results obtained in step one the thresh hold frequency was set to approximately 50; this included about 90% of the data obtained in step one. This was a feasible strategy since it was observed that a lot of the names with frequencies below 50 were either spelling mistakes or parts of company names. Due to this the first 1603 distinct individual names obtained from step one were selected for analysis.
3. The names obtained from step two were analyzed and 756 distinct individual names with a cumulative frequency of 1019593 were obtained (See Appendix A).
4. Most of the names discarded during this step were names making up company or organization names (e.g. from ZARCO-SEA, ASKARI LEASING, POPULATION WELFARE DEPARTMENT etc all individual names were discarded) and names like Din, Ullah, Haji, Abdul etc (since these are not independent names).

For the same names with different spellings merged see Appendix B. For the name MUHAMMAD (highest frequency spelling chosen as representative) there were 17 different spellings (many of which were spelling or typing errors).

The frequency distribution of the 150 highest frequency names obtained in the previous step can be seen from Table A.1.

In the 150 highest frequency names, 4 were female names and 146 were male names.

5. This step (ensure representation of maximum phonemes of Urdu Language at the start of names) the was based on the following phonemic inventory:

i e æ æ* u o p p b b t t t d d t t
h x d d d d z r f k k l m n v j s
(the short version of the phoneme æ. is represented as æ*)

[j/], [æ /] and [v / w] are considered allophonic.

See (Comrie, 1990) and (Laver, 1994) for documented phonemic inventories of Hindi-Urdu.

From the set of phonemes given above, there were names in the initially selected 150 names that started with the following phonemes:

æ* b b p t d t h x z r f k l m n v j s

Names starting with the following phonemes were added in this step:

t TIPU
d DAR
d DAWOOD
k KHOKHAR
GULZAR

These names were selected from the names (151 - 756) in Table A.1.

No names starting with the following phonemes were found:

æ i e u o p t

6. The following additional names were inserted using frequency values from Table A.1

SARFRAZ
SHAHNAZ
SALMAN
NIGHAT
KARAMAT
SADAF

The following names were inserted from the results obtained in step one:

SARMAD
HUDA
NAYYARA

The frequency / probability distribution of the final selected names is shown in Table 2. The phonemic transcriptions are shown in Table 3.

(The highest frequency spelling is chosen from multiple spellings of the same name; in cases where an abbreviation had the highest frequency, the spelling with the next highest frequency was chosen, e.g., CH for CHAUDHRY.)

In the final selected names (164) 9 were female names and 155 were male names.

Table 2 frequency / probability distribution of the selected names

#	Name:	Freq:	Prob:
1	MUHAMMAD	179853	0.215422
2	AHMED	49938	0.059814

3 ALI	34416	0.041222	58 ZAHID	3081	0.003690
4 KHAN	24226	0.029017	59 SHAUKAT	3070	0.003677
5 HUSSAIN	23968	0.028708	60 FAROOQ	3061	0.003666
6 CHAUDHRY	18056	0.021627	61 SADIQ	3000	0.003593
7 SHEIKH	15158	0.018156	62 YOUNAS	2973	0.003561
8 MALIK	13994	0.016762	63 KHAWAJA	2961	0.003547
9 SYED	13046	0.015626	64 BIBI	2944	0.003526
10 IQBAL	12310	0.014745	65 JAMIL	2927	0.003506
11 MEHMOOD	11784	0.014115	66 NADEEM	2917	0.003494
12 BUTT	10167	0.012178	67 HANIF	2907	0.003482
13 BEGUM	9596	0.011494	68 ASGHAR	2864	0.003430
14 JAVAID	9552	0.011441	69 PERVEEN	2863	0.003429
15 AKHTAR	9304	0.011144	70 ABBAS	2784	0.003335
16 GHULAM	8471	0.010146	71 MANZOOR	2767	0.003314
17 KHALID	7843	0.009394	72 HAMID	2757	0.003302
18 SAEED	7300	0.008744	73 NASIR	2751	0.003295
19 MIAN	7264	0.008701	74 NAWAZ	2723	0.003262
20 SALEEM	7020	0.008408	75 IFTIKHAR	2702	0.003236
21 ASLAM	6968	0.008346	76 AMJAD	2660	0.003186
22 BASHIR	6549	0.007844	77 SHAFIQ	2610	0.003126
23 SHAH	6462	0.007740	78 BAIG	2596	0.003109
24 ANWAR	5950	0.007127	79 HAMEED	2565	0.003072
25 TARIQ	5915	0.007085	80 WAHEED	2545	0.003048
26 RIAZ	5801	0.006948	81 RAZA	2540	0.003042
27 REHMAN	5784	0.006928	82 MASOOD	2525	0.003024
28 RASHID	5618	0.006729	83 MAJEED	2521	0.003020
29 ASHRAF	5445	0.006522	84 SHAHZAD	2521	0.003020
30 NAZIR	5272	0.006315	85 HAFIZ	2519	0.003017
31 SHAHID	5217	0.006249	86 AKBAR	2476	0.002966
32 SIDDIQUE	4989	0.005976	87 AMIR	2352	0.002817
33 RAFIQUE	4791	0.005739	88 ILYAS	2338	0.002800
34 BHATTI	4739	0.005676	89 LIAQAT	2331	0.002792
35 ARSHAD	4617	0.005530	90 SARWAR	2310	0.002767
36 AFZAL	4511	0.005403	91 NOOR	2274	0.002724
37 IJAZ	4487	0.005374	92 FAZAL	2133	0.002555
38 AKRAM	4400	0.005270	93 SOHAIL	2128	0.002549
39 RANA	4363	0.005226	94 ZULFIQAR	2111	0.002528
40 MIRZA	4112	0.004925	95 MAQSOOD	2093	0.002507
41 YOUSAF	4098	0.004908	96 RASHEED	2083	0.002495
42 QURESHI	4033	0.004831	97 IMRAN	2000	0.002396
43 MUNIR	3951	0.004732	98 YAQOOB	1996	0.002391
44 PERVAIZ	3723	0.004459	99 ABID	1983	0.002375
45 LATIF	3706	0.004439	100 HAFEEZ	1975	0.002366
46 TAHIR	3705	0.004438	101 SHABBIR	1971	0.002361
47 HASSAN	3675	0.004402	102 KHURSHID	1897	0.002272
48 ZAFAR	3599	0.004311	103 ASHFAQ	1877	0.002248
49 HAQ	3566	0.004271	104 RAMZAN	1872	0.002242
50 MUSHTAQ	3458	0.004142	105 SHAFI	1866	0.002235
51 ASIF	3418	0.004094	106 HAIDER	1859	0.002227
52 AZIZ	3288	0.003938	107 UMER	1847	0.002212
53 ARIF	3286	0.003936	108 MUKHTAR	1825	0.002186
54 SHARIF	3251	0.003894	109 HABIB	1821	0.002181
55 NAEEM	3224	0.003862	110 ALAM	1814	0.002173
56 NASEEM	3172	0.003799	111 ZIA	1791	0.002145
57 AMIN	3156	0.003780	112 SULTAN	1669	0.001999

			#	Name:	Transcription:
113 AWAN	1667	0.001997	1	MUHAMMAD	m oh m m d
114 TANVEER	1666	0.001995	2	AHMED	æ *hm d
115 RASOOL	1658	0.001986	3	ALI	li
116 ELAHI	1646	0.001972	4	KHAN	x n
117 AZAM	1645	0.001970	5	HUSSAIN	h sæ n
118 AZHAR	1629	0.001951	6	CHAUDHRY	t dhri
119 MUMTAZ	1590	0.001904	7	SHEIKH	ex
120 SAJJAD	1589	0.001903	8	MALIK	m lk
121 ISHAQ	1584	0.001897	9	SYED	s jj d
122 MASIH	1578	0.001890	10	IQBAL	kb l
123 SARDAR	1575	0.001886	11	MEHMOOD	m æ *hm ud
124 IMTIAZ	1552	0.001859	12	BUTT	b t
125 QAMAR	1533	0.001836	13	BEGUM	be m
126 SHAMIM	1531	0.001834	14	JAVOID	d ved
127 MAQBOOL	1524	0.001825	15	AKHTAR	xt r
128 IRFAN	1519	0.001819	16	GHULAM	l m
129 SABIR	1512	0.001811	17	KHALID	x ld
130 ASHIQ	1502	0.001799	18	SAEED	s id
131 IRSHAD	1500	0.001797	19	MIAN	m i n
132 ANJUM	1499	0.001795	20	SALEEM	s lm
133 TUFAIL	1457	0.001745	21	ASLAM	sl m
134 MUNAWAR	1450	0.001737	22	BASHIR	b ir
135 AFTAB	1446	0.001732	23	SHAH	h
136 HAYAT	1446	0.001732	24	ANWAR	nv r
137 YASIN	1444	0.001730	25	TARIQ	t rk
138 NAVEED	1437	0.001721	26	RIAZ	ri z
139 NASEER	1425	0.001707	27	REHMAN	ræ *hm n
140 REHMAT	1422	0.001703	28	RASHID	r d
141 RAZZAQ	1362	0.001631	29	ASHRAF	r f
142 ISLAM	1360	0.001629	30	NAZIR	n zir
143 GHAFOOR	1355	0.001623	31	SHAHID	h d
144 AYUB	1353	0.001621	32	SIDDIQUE	s ddk
145 SULTANA	1353	0.001621	33	RAFIQUE	r fk
146 ZAHEER	1334	0.001598	34	BHATTI	b tti
147 NISAR	1315	0.001575	35	ARSHAD	r d
148 BABAR	1312	0.001571	36	AFZAL	fz l
149 MUSTAFA	1311	0.001570	37	IJAZ	d z
150 FAYYAZ	1287	0.001542	38	AKRAM	kr m
151 SARFRAZ	1123	0.001345	39	RANA	r n
152 GULZAR	1033	0.001237	40	MIRZA	m rz
153 KHOKHAR	991	0.001187	41	YOUSAF	jus f
154 SHAHNAZ	821	0.000983	42	QURESHI	k ræ i
155 DAR	791	0.000947	43	MUNIR	m nir
156 SALMAN	487	0.000583	44	PERVAIZ	p rvez
157 DAWOOD	437	0.000523	45	LATIF	l tif
158 NIGHAT	396	0.000474	46	TAHIR	t h r
159 KARAMAT	360	0.000431	47	HASSAN	h s n
160 SADAF	56	0.000067	48	ZAFAR	z f r
161 TIPU	54	0.000065	49	HAQ	h k
162 SARMAD	33	0.000040	50	MUSHTAQ	m t k
163 HUDA	20	0.000024	51	ASIF	s f
164 NAYYARA	4	0.000005	52	AZIZ	ziz
	834885		53	ARIF	r f
			54	SHARIF	rif

Table 3 Phonemic transcriptions of the selected names

55 NAEEM	n in	110 ALAM	l m
56 NASEEM	n sin	111 ZIA	z
57 AMIN	m in	112 SULTAN	s lt n
58 ZAHID	z h d	113 AWAN	w n
59 SHAUKAT	k t	114 TANVEER	t nvir
60 FAROOQ	f nuk	115 RASOOL	r sul
61 SADIQ	s d k	116 ELAHI	l hi
62 YOUNAS	jun s	117 AZAM	z m
63 KHAWAJA	xo d	118 AZHAR	zh r
64 BIBI	bbi	119 MUMTAZ	m mt z
65 JAMIL	d m il	120 SAJJAD	s d d d
66 NADEEM	n din	121 ISHAQ	sh k
67 HANIF	h nif	122 MASIH	m sh
68 ASGHAR	s r	123 SARDAR	s rd r
69 PERVEEN	p rvih	124 IMTIAZ	m t z
70 ABBAS	bb s	125 QAMAR	k m r
71 MANZOOR	m nzur	126 SHAMIM	m in
72 HAMID	h m d	127 MAQBOOL	m kbul
73 NASIR	n sr	128 IRFAN	rf n
74 NAWAZ	n v z	129 SABIR	s b r
75 IFTIKHAR	ftx r	130 ASHIQ	k
76 AMJAD	m d d	131 IRSHAD	r d
77 SHAFIQ	fk	132 ANJUM	nd m
78 BAIG	be	133 TUFAIL	t fa l
79 HAMEED	h m il	134 MUNAWAR	m n vv r
80 WAHEED	v h il	135 AFTAB	ft b
81 RAZA	r z	136 HAYAT	h j t
82 MASOOD	m sud	137 YASIN	j sh
83 MAJEED	m d il	138 NAVEED	n vil
84 SHAHZAD	æ *hzad	139 NASEER	n sir
85 HAFIZ	h fz	140 REHMAT	æ *hm t
86 AKBAR	kb r	141 RAZZAQ	r zz k
87 AMIR	m r	142 ISLAM	sl m
88 ILYAS	l s	143 GHAFUOR	fur
89 LIAQAT	l k t	144 AYUB	jjub
90 SARWAR	s rw r	145 SULTANA	s lt n
91 NOOR	nur	146 ZAHEER	z hir
92 FAZAL	f z l	147 NISAR	n s r
93 SOHAIL	ohel	148 BABAR	b b r
94 ZULFIQAR	z lf k r	149 MUSTAFA	m st f
95 MAQSOOD	m ksud	150 FAYYAZ	f j z
96 RASHEED	r il	151 SARFRAZ	s rfr z
97 IMRAN	m r n	152 GULZAR	z r
98 YAQOOB	j kub	153 KHOKHAR	k ok ↔p
99 ABID	b d	154 SHAHNAZ	hn z
100 HAFEEZ	h fiz	155 DAR	d r
101 SHABBIR	bbir	156 SALMAN	s ln n
102 KHURSHID	x r il	157 DAWOOD	d ud
103 ASHFAQ	f k	158 NIGHAT	n h t
104 RAMZAN	r m z n	159 KARAMAT	k r m t
105 SHAFI	fi	160 SADAF	s d f
106 HAIDER	h d r	161 TIPU	tipu
107 UMER	m r	162 SARMAD	s m d
108 MUKHTAR	m xt r	163 HUDA	h d
109 HABIB	h bb	164 NAYYARA	n jj ra

6. DISCUSSION

This section highlights particular problems that came up while analyzing the data and also gives some observations concerning the overall results.

The significant problems came up when extracting the individual names (step one) and when merging names with different spellings (step three).

There was a problem in the method used for extracting the individual names from the directory. When performing step one, the database was visually inspected to check which punctuation marks would be used to separate the names. But the results showed that some had been missed (e.g. ‘ ‘ ‘).

Another problem related to punctuation marks (but contradictory to the previous problem) noticed in the first step was due to taking names separated by a ‘.’ as an individual name. In some cases in the PTCL directory the qualification “MBBS” was written as “M.B.B.S”; and the designation of “MPA” was written as M.P.A. This led to the M being counted individually, which is also commonly used as an abbreviation for MUHAMMAD. Therefore the calculated frequency for MUHAMMAD is somewhat more than the actual, but through a random visual inspection of the directory it was concluded that the error is not that significant.

A possible solution to the above problems may be to initially add all possible punctuation marks to the list according to which individual names will be separated (since visual inspection is not a reliable method to see how many types of punctuation marks there are in a database; which may be there due to spelling preferences, spelling errors and typing errors). After this, a visual inspection should be done to remove any punctuation marks that may lead to significant errors.

One problem was encountered during step three, when classifying abbreviations under names. Abbreviations like M, CH and KH are very commonly used for MOHAMMAD, CHAUDHRY and KHAWAJA respectively, but SH could be used for SHAH or SHEIKH. To resolve this a short, informal survey was conducted and it was decided that SH was used for SHEIKH.

Another problem in step three when classifying names arose in name pairs like HAMID and HAMEED, RASHID and RASHEED. It has been noticed that people often use the spelling RASHID for both $r \ d$ and $r \ ɪ$ and the spelling HAMID for $h \ m \ d$ and $h \ m \ ɪ$, whereas HAMEED and RASHEED are only used for $h \ m \ ɪ$ and $r \ ɪ$. There was no solution to this problem and names like this had to be classified as they were spelled versus as pronounced.

The following set of spellings was also ambiguous.

SIDDIQUE
SIDDIQ

SADDIQUE

SADIQUE

The problem with this set of spellings was whether they should be classified into one or two sets. All the names listed could be pronounced as follows (phonetic transcriptions):

$s \ d d \ k$

$s \ d \ k$

$s \ d d \ k$

$s \ d \ k$

The four transcribed names are commonly perceived (deduced by a random survey) by native Urdu speakers as a single name. Since the objective was to select frequently used names, the random survey was considered sufficient and there was no further investigation.

Based on the use of names among native Urdu speakers, all the names from the set were eventually categorized as SIDDIQUE (highest frequency spelling used).

After classifying these names the phonemic transcription (see Table 3) was done based on the highest frequency spelling (see Appendix B), therefore SADDIQUE was transcribed as $s \ d d \ k$.

Some general observations pertaining to the overall results are as given in the following part of the discussion.

The threshold value accounts for about 50% of the names in the directory which was considered sufficient, since a lot of the data below the threshold included spelling mistakes and company names.

The phoneme representation though only formally considered at the start of each name was considered sufficient.

Only about 5% of the names were selected outside of the defined process (for personalization purposes), therefore the statistical representation of names is also sufficient.

From the initial 150 highest frequency names selected from the PTCL directory, only 2.67% were female names. This is due to the fact that Pakistani Culture is highly male dominated, mostly males are heads of families, and therefore most assets etc (including telephone connections) are registered under male names.

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APPENDIX A

The frequency distribution of the 756 names (with cumulative frequency 1019593) obtained after step three is shown in Table A.1.

(The highest frequency spelling is chosen from multiple spellings of the same name; in cases where an abbreviation had the highest frequency, the spelling with the next highest frequency was chosen, e.g., CH for CHAUDHRY.)

Table A.1 frequency / probability distribution for 756 analyzed names

#	name:	freq:	prob:
1	MUHAMMAD	179853	0.17640
2	AHMED	49938	0.04898
3	ALI	34416	0.03375
4	KHAN	24226	0.02376
5	HUSSAIN	23968	0.02351
6	CHAUDHRY	18056	0.01771
7	SHEIKH	15158	0.01487
8	MALIK	13994	0.01373
9	SYED	13046	0.01280
10	IQBAL	12310	0.01207
11	MEHMOOD	11784	0.01156
12	BUTT	10167	0.00997
13	BEGUM	9596	0.00941
14	JAVAID	9552	0.00937
15	AKHTAR	9304	0.00913
16	GHULAM	8471	0.00831
17	KHALID	7843	0.00769
18	SAEED	7300	0.00716
19	MIAN	7264	0.00712
20	SALEEM	7020	0.00689
21	ASLAM	6968	0.00683
22	BASHIR	6549	0.00642
23	SHAH	6462	0.00634
24	ANWAR	5950	0.00584
25	TARIQ	5915	0.00580
26	RIAZ	5801	0.00569
27	REHMAN	5784	0.00567
28	RASHID	5618	0.00551
29	ASHRAF	5445	0.00534
30	NAZIR	5272	0.00517
31	SHAHID	5217	0.00512
32	SIDDIQUE	4989	0.00489
33	RAFIQUE	4791	0.00470
34	BHATTI	4739	0.00465
35	ARSHAD	4617	0.00453
36	AFZAL	4511	0.00442

37	IJAZ	4487	0.00440
38	AKRAM	4400	0.00432
39	RANA	4363	0.00428
40	MIRZA	4112	0.00403
41	YOUSAF	4098	0.00402
42	QURESHI	4033	0.00396
43	MUNIR	3951	0.00388
44	PERVAIZ	3723	0.00365
45	LATIF	3706	0.00363
46	TAHIR	3705	0.00363
47	HASSAN	3675	0.00360
48	ZAFAR	3599	0.00353
49	HAQ	3566	0.00350
50	MUSHTAQ	3458	0.00339
51	ASIF	3418	0.00335
52	AZIZ	3288	0.00322
53	ARIF	3286	0.00322
54	SHARIF	3251	0.00319
55	NAEEM	3224	0.00316
56	NASEEM	3172	0.00311
57	AMIN	3156	0.00310
58	ZAHID	3081	0.00302
59	SHAUKAT	3070	0.00301
60	FAROOQ	3061	0.00300
61	SADIQ	3000	0.00294
62	YOUNAS	2973	0.00292
63	KHAWAJA	2961	0.00290
64	BIBI	2944	0.00289
65	JAMIL	2927	0.00287
66	NADEEM	2917	0.00286
67	HANIF	2907	0.00285
68	ASGHAR	2864	0.00281
69	PERVEEN	2863	0.00281
70	ABBAS	2784	0.00273
71	MANZOOR	2767	0.00271
72	HAMID	2757	0.00270
73	NASIR	2751	0.00270
74	NAWAZ	2723	0.00267
75	IFTIKHAR	2702	0.00265
76	AMJAD	2660	0.00261
77	SHAFIQ	2610	0.00256
78	BAIG	2596	0.00255
79	HAMEED	2565	0.00252
80	WAHEED	2545	0.00250
81	RAZA	2540	0.00249
82	MASOOD	2525	0.00248
83	MAJEED	2521	0.00247
84	SHAHZAD	2521	0.00247
85	HAFIZ	2519	0.00247
86	AKBAR	2476	0.00243
87	AMIR	2352	0.00231
88	ILYAS	2338	0.00229
89	LIAQAT	2331	0.00229
90	SARWAR	2310	0.00227
91	NOOR	2274	0.00223

92 FAZAL	2133	0.00209	147 NISAR	1315	0.00129
93 SOHAIL	2128	0.00209	148 BABAR	1312	0.00129
94 ZULFIQAR	2111	0.00207	149 MUSTAFA	1311	0.00129
95 MAQSOOD	2093	0.00205	150 FAYYAZ	1287	0.00126
96 RASHEED	2083	0.00204	151 RAUF	1262	0.00124
97 IMRAN	2000	0.00196	152 KAUSAR	1241	0.00122
98 YAQOOB	1996	0.00196	153 ISMAIL	1239	0.00122
99 ABID	1983	0.00194	154 IDREES	1238	0.00121
100 HAFEEZ	1975	0.00194	155 SAFDAR	1223	0.00120
101 SHABBIR	1971	0.00193	156 QAYYUM	1201	0.00118
102 KHURSHID	1897	0.00186	157 ZAHOOR	1189	0.00117
103 ASHFAQ	1877	0.00184	158 WASEEM	1188	0.00117
104 RAMZAN	1872	0.00184	159 ALTAF	1182	0.00116
105 SHAFI	1866	0.00183	160 MIRAJ	1169	0.00115
106 HAIDER	1859	0.00182	161 BUKHARI	1161	0.00114
107 UMER	1847	0.00181	162 SHAHEEN	1145	0.00112
108 MUKHTAR	1825	0.00179	163 EHSAN	1140	0.00112
109 HABIB	1821	0.00179	164 MEHBOOB	1131	0.00111
110 ALAM	1814	0.00178	165 SARFRAZ	1123	0.00110
111 ZIA	1791	0.00176	166 SHAHBAZ	1123	0.00110
112 SULTAN	1669	0.00164	167 TAJ	1110	0.00109
113 AWAN	1667	0.00163	168 SATTAR	1098	0.00108
114 TANVEER	1666	0.00163	169 MAZHAR	1093	0.00107
115 RASOOL	1658	0.00163	170 JAHANGIR	1092	0.00107
116 ELAHI	1646	0.00161	171 ZAMAN	1086	0.00107
117 AZAM	1645	0.00161	172 KHALIL	1072	0.00105
118 AZHAR	1629	0.00160	173 INAYAT	1069	0.00105
119 MUMTAZ	1590	0.00156	174 RAJA	1052	0.00103
120 SAJJAD	1589	0.00156	175 USMAN	1051	0.00103
121 ISHAQ	1584	0.00155	176 KARIM	1045	0.00102
122 MASIH	1578	0.00155	177 MUGHAL	1041	0.00102
123 SARDAR	1575	0.00154	178 ZAIDI	1037	0.00102
124 IMTIAZ	1552	0.00152	179 GULZAR	1033	0.00101
125 QAMAR	1533	0.00150	180 IBRAHIM	1031	0.00101
126 SHAMIM	1531	0.00150	181 BANO	1025	0.00101
127 MAQBOOL	1524	0.00149	182 KHOKHAR	991	0.00097
128 IRFAN	1519	0.00149	183 GUL	984	0.00097
129 SABIR	1512	0.00148	184 SHAKEEL	983	0.00096
130 ASHIQ	1502	0.00147	185 HAKIM	958	0.00094
131 IRSHAD	1500	0.00147	186 RAZIA	939	0.00092
132 ANJUM	1499	0.00147	187 ATTA	936	0.00092
133 TUFAIL	1457	0.00143	188 NASREEN	935	0.00092
134 MUNAWAR	1450	0.00142	189 ASAD	926	0.00091
135 AFTAB	1446	0.00142	190 MUZAFFAR	902	0.00088
136 HAYAT	1446	0.00142	191 SIDDIQUI	901	0.00088
137 YASIN	1444	0.00142	192 SAJID	897	0.00088
138 NAVEED	1437	0.00141	193 AZEEM	894	0.00088
139 NASEER	1425	0.00140	194 MAJID	892	0.00087
140 REHMAT	1422	0.00139	195 QADIR	888	0.00087
141 RAZZAQ	1362	0.00134	196 GHANI	886	0.00087
142 ISLAM	1360	0.00133	197 KHADIM	885	0.00087
143 GHAFUOR	1355	0.00133	198 FATIMA	876	0.00086
144 AYUB	1353	0.00133	199 AHSAN	869	0.00085
145 SULTANA	1353	0.00133	200 NAQVI	864	0.00085
146 ZAHEER	1334	0.00131	201 RAFI	859	0.00084

202 MIR	843	0.00083	257 AZRA	578	0.00057
203 SHER	835	0.00082	258 CHEEMA	571	0.00056
204 NABI	823	0.00081	259 AJMAL	569	0.00056
205 SHAHNAZ	821	0.00081	260 FARID	567	0.00056
206 FAISAL	808	0.00079	261 GHAFFAR	567	0.00056
207 MANSOOR	804	0.00079	262 KAMRAN	566	0.00056
208 AGHA	803	0.00079	263 YASEEN	552	0.00054
209 ZUBAIR	803	0.00079	264 LAL	544	0.00053
210 QAISER	793	0.00078	265 SAIF	543	0.00053
211 DAR	791	0.00078	266 MOHSIN	532	0.00052
212 KHANUM	783	0.00077	267 NAWAB	532	0.00052
213 DITTA	780	0.00077	268 FARRUKH	527	0.00052
214 NIAZ	778	0.00076	269 SAFIA	523	0.00051
215 YASMIN	773	0.00076	270 ISHTIAQ	521	0.00051
216 SHAFQAT	750	0.00074	271 KHALIDA	514	0.00050
217 ABDULLAH	748	0.00073	272 FAQIR	509	0.00050
218 WAQAR	736	0.00072	273 INAM	508	0.00050
219 ZAHIDA	725	0.00071	274 KHUSHI	507	0.00050
220 BARKAT	721	0.00071	275 MURTAZA	507	0.00050
221 RIZWAN	721	0.00071	276 RIFFAT	505	0.00050
222 RAHIM	718	0.00070	277 SULEMAN	505	0.00050
223 NAZ	708	0.00069	278 JABEEN	502	0.00049
224 KHALIQ	702	0.00069	279 QADRI	493	0.00048
225 QAZI	701	0.00069	280 SHAMSHAD	493	0.00048
226 JAMSHED	692	0.00068	281 KASHIF	489	0.00048
227 QASIM	687	0.00067	282 KHAWAR	489	0.00048
228 RIZVI	681	0.00067	283 SALMAN	487	0.00048
229 MUBARIK	679	0.00067	284 IBRAR	485	0.00048
230 ASIM	678	0.00066	285 SAEEDA	483	0.00047
231 JAMAL	678	0.00066	286 JABBAR	480	0.00047
232 RUBINA	676	0.00066	287 NAHEED	480	0.00047
233 MUSSARAT	673	0.00066	288 MUBASHAR	478	0.00047
234 SALAH	669	0.00066	289 QADEER	477	0.00047
235 SIRAJ	669	0.00066	290 SUFI	477	0.00047
236 FAIZ	664	0.00065	291 BUSHRA	473	0.00046
237 BILAL	656	0.00064	292 CHOHAN	469	0.00046
238 BUKSH	641	0.00063	293 REHANA	469	0.00046
239 SHAHIDA	641	0.00063	294 TALIB	469	0.00046
240 JAN	629	0.00062	295 RASHIDA	468	0.00046
241 NUSRAT	622	0.00061	296 RUKHSANA	468	0.00046
242 FARHAT	621	0.00061	297 AMEER	461	0.00045
243 TAHIRA	621	0.00061	298 KHURRAM	461	0.00045
244 NAZAR	617	0.00061	299 GILL	455	0.00045
245 HAROON	616	0.00060	300 ALVI	452	0.00044
246 KAMAL	616	0.00060	301 WAHID	451	0.00044
247 CHUGHTAI	612	0.00060	302 AZMAT	450	0.00044
248 SURRAYA	609	0.00060	303 TASNEEM	450	0.00044
249 HASHMI	607	0.00060	304 KALEEM	449	0.00044
250 BAJWA	604	0.00059	305 AYAZ	447	0.00044
251 TALAT	602	0.00059	306 FAROOQI	443	0.00043
252 BOOTA	600	0.00059	307 ASMAT	441	0.00043
253 SAMINA	600	0.00059	308 SAGHIR	441	0.00043
254 ANEES	591	0.00058	309 JAFFAR	440	0.00043
255 JAHAN	585	0.00057	310 AMAN	439	0.00043
256 FIAZ	583	0.00057	311 NISA	439	0.00043

312 DAWOOD	437	0.00043	367 MOHI	320	0.00031
313 RAKHA	436	0.00043	368 SHAD	319	0.00031
314 SAMI	430	0.00042	369 WAJID	319	0.00031
315 GILLANI	426	0.00042	370 FOZIA	311	0.00031
316 ARA	423	0.00041	371 NIAMAT	304	0.00030
317 SHOAI B	422	0.00041	372 SHUJA	301	0.00030
318 SHAKOOR	420	0.00041	373 YAMIN	301	0.00030
319 HAKEEM	419	0.00041	374 FIRDOUS	300	0.00029
320 MEHAR	418	0.00041	375 JALAL	300	0.00029
321 AMANAT	415	0.00041	376 ADIL	299	0.00029
322 RAHAT	415	0.00041	377 BILQUEES	298	0.00029
323 ABIDA	414	0.00041	378 ADNAN	295	0.00029
324 SHAMAS	414	0.00041	379 SALMA	294	0.00029
325 HAMAYUN	412	0.00040	380 MEHDI	289	0.00028
326 AWAIS	405	0.00040	381 PASHA	289	0.00028
327 MUJAHID	404	0.00040	382 SHAKIR	289	0.00028
328 KHATOON	402	0.00039	383 AMINA	288	0.00028
329 TAYYAB	399	0.00039	384 CHISHTI	286	0.00028
330 NIGHAT	396	0.00039	385 LODHI	283	0.00028
331 NIAZI	395	0.00039	386 JALIL	276	0.00027
332 ZARINA	395	0.00039	387 NAFEEES	275	0.00027
333 NAJAM	394	0.00039	388 ATTIQUE	272	0.00027
334 GHORI	391	0.00038	389 FARIDA	272	0.00027
335 NAJMA	391	0.00038	390 GHAZANFAR	268	0.00026
336 WARIS	391	0.00038	391 YAR	267	0.00026
337 JAFRI	389	0.00038	392 SHAGUFTA	266	0.00026
338 SALAM	388	0.00038	393 MEHR	263	0.00026
339 KAZMI	384	0.00038	394 ISRAR	260	0.00026
340 SIKANDAR	382	0.00037	395 FEROZE	258	0.00025
341 JAMILA	380	0.00037	396 HAMIDA	257	0.00025
342 ANSARI	379	0.00037	397 ATIF	255	0.00025
343 ZUBAIDA	378	0.00037	398 DILAWAR	255	0.00025
344 BASHARAT	374	0.00037	399 KALSOOM	253	0.00025
345 ATHAR	371	0.00036	400 AKMAL	250	0.00025
346 IKHLAQ	371	0.00036	401 FAKHAR	250	0.00025
347 WALI	371	0.00036	402 MUBEEN	249	0.00024
348 AQEEL	363	0.00036	403 ABBASI	248	0.00024
349 TABASSUM	362	0.00036	404 PARACHA	248	0.00024
350 KARAMAT	360	0.00035	405 FIDA	246	0.00024
351 FARZANA	358	0.00035	406 AISHA	244	0.00024
352 MOEEN	358	0.00035	407 SALAMAT	244	0.00024
353 SANA	357	0.00035	408 FAQEER	242	0.00024
354 MUSLIM	345	0.00034	409 RAFAQAT	238	0.00023
355 SAQIB	345	0.00034	410 KISHWAR	237	0.00023
356 MINHAS	342	0.00034	411 MANSHA	237	0.00023
357 ALEEM	341	0.00033	412 NAZIM	237	0.00023
358 RAO	338	0.00033	413 ZAFFAR	237	0.00023
359 NAYYAR	336	0.00033	414 ZAHIR	237	0.00023
360 NARGIS	335	0.00033	415 JAWAD	235	0.00023
361 WAZIR	335	0.00033	416 ZOHRA	235	0.00023
362 GHAZALA	334	0.00033	417 DILSHAD	234	0.00023
363 SYEDA	331	0.00032	418 SADAQAT	234	0.00023
364 ZAIB	329	0.00032	419 ALAMGIR	233	0.00023
365 FAHEEM	327	0.00032	420 FEROUZ	233	0.00023
366 FATEH	320	0.00031	421 IMAM	233	0.00023

422 KARAM	233	0.00023	477 NOON	166	0.00016
423 JANG	232	0.00023	478 TAJAMAL	165	0.00016
424 MOAZZAM	232	0.00023	479 DIL	162	0.00016
425 DOGAR	231	0.00023	480 SUGHRAN	162	0.00016
426 SAJIDA	225	0.00022	481 HAMEEDA	161	0.00016
427 ISHRAT	224	0.00022	482 PIRZADA	161	0.00016
428 GOHAR	221	0.00022	483 VIRK	160	0.00016
429 SHAHZADA	221	0.00022	484 ZEESHAN	159	0.00016
430 BASIT	219	0.00021	485 JANJUA	158	0.00015
431 SAADAT	219	0.00021	486 SHARAFAT	158	0.00015
432 MUFTI	218	0.00021	487 UZMA	158	0.00015
433 FARZAND	216	0.00021	488 AURANG	157	0.00015
434 BARI	208	0.00020	489 FARAH	157	0.00015
435 ABDUR	207	0.00020	490 RANI	157	0.00015
436 REHAN	207	0.00020	491 SHAMA	157	0.00015
437 SAMAD	206	0.00020	492 WAQAS	157	0.00015
438 ATTIQ	203	0.00020	493 HASHIM	156	0.00015
439 SAKINA	203	0.00020	494 SHAKEELA	156	0.00015
440 IMDAD	202	0.00020	495 TAUQEER	156	0.00015
441 TOOR	201	0.00020	496 SHAFQAAT	155	0.00015
442 HADAYAT	197	0.00019	497 TASLEEM	155	0.00015
443 NASRULLAH	197	0.00019	498 WAHAB	155	0.00015
444 NOMAN	197	0.00019	499 YAHYA	154	0.00015
445 NAJEEB	196	0.00019	500 HASEEB	153	0.00015
446 RAEES	195	0.00019	501 TAHSEEN	153	0.00015
447 DURRANI	194	0.00019	502 ALMAS	152	0.00015
448 SINDHU	193	0.00019	503 HASHMAT	152	0.00015
449 ZAMIR	193	0.00019	504 UDDIN	152	0.00015
450 MUZAMIL	192	0.00019	505 GHIAS	151	0.00015
451 PIR	189	0.00019	506 SACHAL	151	0.00015
452 KABIR	188	0.00018	507 AMAR	148	0.00015
453 KHUDA	188	0.00018	508 GONDAL	148	0.00015
454 KANEEZ	187	0.00018	509 MEHTAB	148	0.00015
455 AZAD	186	0.00018	510 NABILA	148	0.00015
456 NUZHAT	186	0.00018	511 NADIR	148	0.00015
457 ANSAR	185	0.00018	512 NAILA	148	0.00015
458 IZHAR	185	0.00018	513 SHAISTA	148	0.00015
459 MATEEN	185	0.00018	514 SARWAT	147	0.00014
460 SHAZIA	184	0.00018	515 HAMAD	146	0.00014
461 ZAKIA	184	0.00018	516 ZEENAT	146	0.00014
462 ZAKIR	184	0.00018	517 ROSHAN	145	0.00014
463 RABBANI	183	0.00018	518 ZAKRIA	143	0.00014
464 NAWAZISH	181	0.00018	519 MEHMOODA	142	0.00014
465 SHAHAB	181	0.00018	520 SHAMSI	142	0.00014
466 CHIRAGH	179	0.00018	521 FARKHANDA	141	0.00014
467 ZAKA	179	0.00018	522 SHAMI	141	0.00014
468 MURAD	176	0.00017	523 RIASAT	140	0.00014
469 SHAHZADI	176	0.00017	524 BATOOL	136	0.00013
470 ABU	175	0.00017	525 IFFAT	136	0.00013
471 JUNAID	173	0.00017	526 NIZAMI	136	0.00013
472 NIZAM	172	0.00017	527 SABRI	136	0.00013
473 ZAREEN	172	0.00017	528 ZAKI	136	0.00013
474 YAQUB	171	0.00017	529 ZAMEER	136	0.00013
475 GULSHAN	169	0.00017	530 MISBAH	134	0.00013
476 BHUTTA	168	0.00016	531 RAI	134	0.00013

532 ASMA	133	0.00013	587 ASHAQ	101	0.00010
533 AZIM	133	0.00013	588 ULFAT	101	0.00010
534 MANAN	133	0.00013	589 AFSHAN	100	0.00010
535 SAMEER	133	0.00013	590 MUJTABA	100	0.00010
536 SHAHEENA	132	0.00013	591 ADEEL	99	0.00010
537 GHAZI	131	0.00013	592 FARMAN	99	0.00010
538 LUBNA	131	0.00013	593 MAROOF	99	0.00010
539 BASHIRAN	129	0.00013	594 BABU	98	0.00010
540 NISHAT	129	0.00013	595 USMANI	98	0.00010
541 RAZI	129	0.00013	596 AFSAR	95	0.00009
542 HALEEM	128	0.00013	597 SUGHRA	95	0.00009
543 ILAM	128	0.00013	598 AHAD	94	0.00009
544 FAZIL	127	0.00012	599 AMTUL	93	0.00009
545 SALEEMI	127	0.00012	600 BAQAR	92	0.00009
546 QURBAN	126	0.00012	601 DOST	92	0.00009
547 SHERAZ	126	0.00012	602 NABEEL	92	0.00009
548 FARYAD	124	0.00012	603 WASIF	91	0.00009
549 SAKHAWAT	123	0.00012	604 ZULQARNAIN	90	0.00009
550 DILDAR	122	0.00012	605 NOREEN	89	0.00009
551 KHAIR	122	0.00012	606 RATHORE	89	0.00009
552 KHIZAR	120	0.00012	607 RUSTAM	89	0.00009
553 KAZIM	119	0.00012	608 SETHI	89	0.00009
554 MUDASSAR	119	0.00012	609 RAJPUT	88	0.00009
555 YASIR	119	0.00012	610 SAMIA	88	0.00009
556 NASIRA	118	0.00012	611 FEHMIDA	87	0.00009
557 FAHMIDA	117	0.00011	612 ZAIN	87	0.00009
558 HAYEE	117	0.00011	613 DAN	86	0.00008
559 RABIA	117	0.00011	614 NAGINA	86	0.00008
560 RASHEEDA	117	0.00011	615 TAUSEEF	86	0.00008
561 YAWAR	117	0.00011	616 DASTGIR	85	0.00008
562 JAMIA	116	0.00011	617 JOHN	85	0.00008
563 JILLANI	116	0.00011	618 ROOHI	85	0.00008
564 MEHFOOZ	116	0.00011	619 SAIMA	85	0.00008
565 NAQI	116	0.00011	620 HUMA	83	0.00008
566 NAQI	116	0.00011	621 KANWAL	83	0.00008
567 SABIHA	115	0.00011	622 NAZLI	83	0.00008
568 TAQI	113	0.00011	623 REHMANI	83	0.00008
569 SHERAZI	111	0.00011	624 BAHADAR	82	0.00008
570 WALAYAT	111	0.00011	625 MOHAD	82	0.00008
571 FAWAD	110	0.00011	626 MUSHARAF	82	0.00008
572 RAB	110	0.00011	627 NASEEB	82	0.00008
573 FARHAN	109	0.00011	628 SAFI	82	0.00008
574 MAQSOODA	109	0.00011	629 WAJAHAT	82	0.00008
575 MAKHDOOM	108	0.00011	630 ABDUS	81	0.00008
576 SAIRA	108	0.00011	631 MUNSHI	81	0.00008
577 KOKAB	104	0.00010	632 MUSA	81	0.00008
578 SHARIFAN	104	0.00010	633 SAIGAL	79	0.00008
579 MEHARBAN	103	0.00010	634 LUQMAN	78	0.00008
580 SHAN	103	0.00010	635 RAFIA	78	0.00008
581 CHAND	102	0.00010	636 RAHI	78	0.00008
582 MATLOOB	102	0.00010	637 SUBHANI	78	0.00008
583 RAHEEL	102	0.00010	638 MUJEEB	77	0.00008
584 SADIA	102	0.00010	639 RASHAD	77	0.00008
585 SHABANA	102	0.00010	640 NAZIRAN	76	0.00007
586 SHOA	102	0.00010	641 ABAD	74	0.00007

642 KAYANI	74	0.00007	697 FALAK	61	0.00006
643 SAQLAIN	74	0.00007	698 GULRAIZ	61	0.00006
644 RAIS	73	0.00007	699 WARAICH	61	0.00006
645 RANDHAWA	73	0.00007	700 ALIA	60	0.00006
646 SABA	73	0.00007	701 ASGHARI	60	0.00006
647 GHOUS	72	0.00007	702 SHERWANI	60	0.00006
648 MASROOR	72	0.00007	703 ZAID	60	0.00006
649 RAHEELA	72	0.00007	704 ANWARI	59	0.00006
650 SAAD	72	0.00007	705 FAIZI	59	0.00006
651 ZADA	72	0.00007	706 NADIA	59	0.00006
652 HADI	71	0.00007	707 FAIZA	58	0.00006
653 KANIZ	71	0.00007	708 MANZAR	58	0.00006
654 KHUSHNOOD	71	0.00007	709 SAHIBZADA	58	0.00006
655 SUBHAN	71	0.00007	710 TARAR	58	0.00006
656 BISMILLAH	70	0.00007	711 SAUD	57	0.00006
657 KHALIFA	70	0.00007	712 AMBREEN	56	0.00005
658 KHALIQUE	70	0.00007	713 FAZEELAT	56	0.00005
659 MILLAT	70	0.00007	714 JILANI	56	0.00005
660 TASAWAR	70	0.00007	715 MISTRI	56	0.00005
661 WALA	70	0.00007	716 NEELAM	56	0.00005
662 CHATTA	69	0.00007	717 SADAF	56	0.00005
663 SEEMA	69	0.00007	718 BURHAN	55	0.00005
664 YAZDANI	69	0.00007	719 NADIRA	55	0.00005
665 ABAID	68	0.00007	720 BABA	54	0.00005
666 FARAZ	68	0.00007	721 DILBAR	54	0.00005
667 ITTEFAQ	68	0.00007	722 FARASAT	54	0.00005
668 SIAL	68	0.00007	723 KALA	54	0.00005
669 SITA	68	0.00007	724 MEHERBAN	54	0.00005
670 FURQAN	67	0.00007	725 NABA	54	0.00005
671 HAJRA	67	0.00007	726 SALEEMA	54	0.00005
672 HANIFA	67	0.00007	727 TEHMINA	54	0.00005
673 LAEEQ	67	0.00007	728 TIPU	54	0.00005
674 RUKH	67	0.00007	729 WAKEEL	54	0.00005
675 AFAQ	66	0.00006	730 ARIFA	53	0.00005
676 ASHGAR	66	0.00006	731 DANISH	53	0.00005
677 BAKAR	66	0.00006	732 FARHANA	53	0.00005
678 MARYAM	66	0.00006	733 GHALIB	53	0.00005
679 SHABNAM	66	0.00006	734 HINA	53	0.00005
680 WARSI	66	0.00006	735 HUMAIRA	53	0.00005
681 AFZAAL	65	0.00006	736 RUQIA	53	0.00005
682 ASIFA	65	0.00006	737 SALEH	53	0.00005
683 HAMDANI	65	0.00006	738 TASSADAQ	52	0.00005
684 HAMZA	65	0.00006	739 ZAWAR	52	0.00005
685 NAGI	65	0.00006	740 ALIM	51	0.00005
686 NAJMI	65	0.00006	741 BALOCH	51	0.00005
687 NAZAKAT	65	0.00006	742 JAMES	51	0.00005
688 SAKHI	65	0.00006	743 SHEZAN	51	0.00005
689 WASI	65	0.00006	744 SHUJAT	51	0.00005
690 ZAINAB	65	0.00006	745 ANJUMAN	50	0.00005
691 NAIK	64	0.00006	746 ASHAR	50	0.00005
692 GHUMAN	63	0.00006	747 QUDSIA	50	0.00005
693 IRAM	63	0.00006	748 RIZWANA	50	0.00005
694 NAIMAT	63	0.00006	749 SABOOR	50	0.00005
695 TAYYABA	63	0.00006	750 SANAULLAH	50	0.00005
696 AMANULLAH	61	0.00006	751 SOFI	50	0.00005

752 INTIZAR	49	0.00005
753 KANWAR	49	0.00005
754 SARA	49	0.00005
755 SHAFAT	49	0.00005
756 SHAHNAWAZ	49	0.00005

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APPENDIX B

Table B.1. shows the different spellings of the same names found in the directory. Only those names that were selected are included. Each unique name is assigned a unique number.

Table B.1 Different spellings of the same name found in the PTCL directory

Spellings:	#		
MUHAMMAD	1	BEGUM	11
M	1	BAGUM	11
MOHAMMAD	1	MEHMOOD	12
MOHD	1	MAHMOOD	12
MUHAMAMD	1	GHULAM	13
MOHAMAMD	1	GULAM	13
MUHAMAD	1	AKHTAR	14
MUHAMMD	1	AKHTER	14
MUHMAD	1	KHALID	15
MOHAMMD	1	MIAN	16
MUHD	1	SAEED	17
MUHAMMA	1	SAID	17
MOHAMAD	1	ASLAM	18
MUHAMADM	1	SALEEM	19
MUHAMMED	1	SALIM	19
MUHMAMAD	1	BASHIR	20
MOHMMAD	1	BASHEER	20
ALI	2	SHAH	21
AHMED	3	JAVAID	22
AHMAD	3	JAVED	22
AHAMD	3	JAVID	22
AHEMD	3	JAVEED	22
KHAN	4	JAVIAD	22
KAHN	4	JAVEID	22
HUSSAIN	5	JAWAID	22
HUSSIAN	5	TARIQ	23
HUSAIN	5	ANWAR	24
HASSAIN	5	ANWER	24
HUSSIN	5	RIAZ	25
CH	6	RAIZ	25
CHAUDHRY	6	RASHID	26
CHAUDHARY	6	REHMAN	27
CHOUDHRY	6	RAHMAN	27
CHOUDHARY	6	ASHRAF	28
CHUDHRY	6	SHAHID	29
MALIK	7	SHAIID	29
SYED	8	NAZIR	30
SAYED	8	NAZEER	30
IQBAL	9	BHATTI	31
BUTT	10	BHATI	31
BUT	10	AFZAL	32
		ARSHAD	33
		ARSHED	33
		ARSHID	33
		AKRAM	34
		RANA	35
		MIRZA	36
		YOUSAF	37
		QURESHI	38
		QURASHI	38
		TAHIR	39
		MUNIR	40
		MUNEER	40
		LATIF	41
		LATEEF	41

ZAFAR	42	WAHEED	71
SIDDIQUE	43	RAZA	72
SIDDIQ	43	AMJAD	73
SADDIQUE	43	AMJID	73
SADIQUE	43	MAJEED	74
ASIF	44	HAFIZ	75
HASSAN	45	BAIG	76
HASAN	45	BEG	76
MUSHTAQ	46	BEIG	76
MUSTAQ	46	MASOOD	77
SHEIKH	47	MASUD	77
SHAIKH	47	AKBAR	78
SHIEKH	47	AKBER	78
SH	47	NASEEM	79
HAQ	48	NASIM	79
HAQUE	48	SARWAR	80
AZIZ	49	ILYAS	81
ARIF	50	ALYAS	81
SHARIF	51	IJAZ	82
NAEEM	52	EJAZ	82
ZAHID	53	AJAZ	82
FAROOQ	54	NOOR	83
AMIN	55	LIAQAT	84
AMEEN	55	LIAQUAT	84
PERVAIZ	56	LIQAT	84
PERVEZ	56	FAZAL	85
PARVAIZ	56	MAQSOOD	86
PERVIAZ	56	RASHEED	87
PERVAZ	56	PERVEEN	88
PERVEIZ	56	PARVEEN	88
BIBI	57	SHAHZAD	89
HANIF	58	SHEHZAD	89
HANEEF	58	SHAZAD	89
ASGHAR	59	IMRAN	90
ASGHER	59	YAQOOB	91
MANZOOR	60	ABID	92
NADEEM	61	HAFEEZ	93
NADIM	61	SOHAIL	94
SADIQ	62	SUHAIL	94
SADDIQ	62	AMIR	95
NAWAZ	63	AMER	95
RAFIQUE	64	AAMIR	95
RAFIQ	64	RAMZAN	96
JAMIL	65	SHAFI	97
JAMEEL	65	ZULFIQAR	98
HAMID	66	ZULIFQAR	98
HAMED	66	ZULFQAR	98
ABBAS	67	MUKHTAR	99
ABBASS	67	HABIB	100
ABASS	67	ALAM	101
IFTIKHAR	68	ZIA	102
IFTEKHAR	68	HAIDER	103
NASIR	69	HAIDAR	103
NASAR	69	HYDER	103
HAMEED	70	YOUNAS	104

YOUNIS	104	ISHFAQ	134
YOUNUS	104	ISLAM	135
SULTAN	105	GHAFOOR	136
AWAN	106	SULTANA	137
SHAUKAT	107	HAYAT	138
SHOUKAT	107	HAYYAT	138
SHUKAT	107	ZAHEER	139
SHOKAT	107	ISHAQ	140
AZAM	108	ISHAQUE	140
KH	109	NISAR	141
KHAWAJA	109	MUSTAFA	142
KHAWJA	109	FAYYAZ	143
MUMTAZ	110	MUNAWAR	144
SARDAR	111	MUNWAR	144
RASOOL	112	MANAWAR	144
RASUL	112	QAMAR	145
IMTIAZ	113	QAMER	145
AZHAR	114	QAMMAR	145
AZHER	114	REHMAT	146
KHURSHID	115	RAHMAT	146
KHURSHEED	115	AYUB	147
KHURSHED	115	AYYUB	147
TANVEER	116	BABAR	148
TANVIR	116	BABER	148
MAQBOOL	117	RAZZAQ	149
IRSHAD	118	RAZAQ	149
SHAMIM	119	RAZZAK	149
SHAMEEM	119	UMER	150
SAJJAD	120	UMAR	150
SAJAD	120	OMER	150
TUFAIL	121	OMAR	150
AFTAB	122	SALMAN	151
YASIN	123	SULMAN	151
NAVEED	124	SADAF	152
MASIH	125	HUDA	153
MASHI	125	NAYYARA	154
ASHIQ	126	NAYARA	154
ASHIQUE	126	NAYYERA	154
NASEER	127	SARFRAZ	155
SHABBIR	128	SARFARAZ	155
SHABIR	128	KARAMAT	156
SHABEER	128	SHAHNAZ	157
IRFAN	129	SHEHNAZ	157
ARFAN	129	SHANAZ	157
ANJUM	130	NIGHAT	158
ANJAM	130	SARMAD	159
ELAHI	131	GULZAR	160
ELLAHI	131	KHOKHAR	161
ILAH	131	KHOKAR	161
SHAFIQ	132	KHOKHER	161
SHAFIQUE	132	DAR	162
SABIR	133	DAWOOD	163
SABAR	133	DAUD	163
SABBIR	133	TIPU	164
ASHFAQ	134		