

All About 786

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All About 786 - Part 1

This story dates back to several thousand years ago when man used to count things or events on his fingers. The Latin word for finger is ‘*digiti*.’ That has given us the English word ‘*digit*’ for a numeral. Then man learned to use symbols for each number he needed to represent. The Arabs used the alphabets of their language to denote numbers. Since the Arabic alphabet consists of 28 letters, the Arabs were able to count up to 1000- lucky for them. The discovery of zero was yet several hundred years ahead in the future. The Arabs devised two lines of poetry for that system as follows;

أبجد هوز حطي كلمن سعفص قرشت ثخذ ضظغ.

Consequently the numbers assigned to each letter came out to be as follows:

Letter	Value	Transliteration
ا	1	Alif
ب	2	Ba
ج	3	Jeem
د	4	Daal
هـ	5	Ha
و	6	Waw
ز	7	Za
ح	8	Ha (guttural)
ط	9	Ta
ي	10	Ya
ك	20	Kaaf
ل	30	Laam

م	40	Meem
ن	50	Noon
س	60	Seen
ع	70	‘Ayn
ف	80	Fa
ص	90	Saw-d
ق	100	Qaaf (guttural)
ر	200	Ra
ش	300	Sheen
ت	400	Ta
ث	500	Tha (as in <i>thimble</i>)
خ	600	Kha
ذ	700	Dhaal (as in <i>that</i>)
ض	800	Daad
ظ	900	Thah
غ	1000	Ghayn

This gave the Arab poets a tool for recording significant events in history. They were brilliant poets, so they would compose a few lines of poetry in such a way that a line or a number of lines together would represent the exact date of the event. The calculation of the date would be done just by adding the numbers assigned to each one of the alphabets employed in that line of poetry by applying the values given above. Such poetry is known in English as chronograms.

When Islam came, the holy Qur’an became the standard Arabic text in the community for all reading and writing.

The Prophet of Islam sent out letters of invitation to the surrounding areas. Each letter that the Prophet dictated to his scribes would always begin with Bismillah Ar-Rahman ar-Raheem.

That also became the standard for all letter writing for Muslims. However, there was a downside to that practice. Not all letters were of great significance to a reader. Some were of great importance and the reader of the letter would want to keep it. Others, on the other hand, were not important. They had to be disposed of. Now, here was the problem: you cannot, as a believing and practicing Muslim throw a piece of paper in the dust bin if Allah's name is written on it.

Then someone found a brilliant solution to the problem. Instead of writing the full '*bismillah*', one could write a symbol which would remind the reader so that he would immediately recite '*bismillah*' before begin to read the text of the letter, that would really solve the problem.

What better symbol could there be than depicting a number that would represent '*bismillah*'? The formula was already there. So '*bismillah*' was written in longhand and each letter used in that phrase was ciphered to depict the exact number from the ABJAD. That gave us the number 786. Hence the practice of starting a letter with that number. The '786' written at the head of a letter is a reminder to the reader to recite '*bismillah*' before starting to read the text of the letter. There is neither any superstition in it, nor is there any hidden black magic.

Curiously enough, I have not seen that practice among Arabic speaking Muslims. It is, however, very common among the Muslims of India and Pakistan. Newcomers to Islam and even some of the Arabs think that it is an innovation (*bid'at*). Nothing could be further from the truth. It is a very intelligent way to save a Qur'anic verse from desecration by carelessness and lack of concern.

All About 786 - Part 2

Numbers are an integral part of our daily lives, in the home, at school, at work, in travel, and in religion (Allah has declared a Yawm-ul-Hisab, there is no Yawm-ul-physics or Yawm-ul-chemistry). The problem of how to count, has always confronted man. Even before man knew how to write using a set of alphabets (in any language) man knew how to count. We find counting mechanisms recorded in hieroglyphics which are over 5,000 years old. We also

find in ancient cave reliefs the depiction of a herd of cows by repeating the carving of a cow so many times, the size of an army by carving the images of so many soldiers and so on.

But the real logical way of counting came about after the invention of alphabets. The very first set of alphabets that man invented was done by the Phoenicians some 2,000 years ago. Phoenicians were the precursors of the Jews. The very first set of alphabets that they invented did not have any vowels, only consonants. However, very soon they realized that there was no way to form any meaningful word just by putting a number of consonants together. They also realized that they were actually using vowels anyway. So after a few hundred years, they chose three alphabets in their set to depict the three basic vowels: a, i, o/u.

In the Arabic language and hence in Urdu and Farsi, these are placed above or below the consonants are called *kesra*, *fataha* and *zamma*. That basic set of alphabets travelled across the globe, and all other languages adopted it with more or less some modifications.

Phoenicians were a Semitic people. Arabic and Hebrew are Semitic languages. That is why it is easier to track back in history to the earliest alphabets using one of those languages. But, what is striking is that we find traces of the early set of alphabets in such modern languages as English.

Let us give you some examples. The Phoenicians called the camel '*jamal*'. To depict the first consonantal sound of that word they chose a letter which is exactly what the Arabic *jeem* is: ج.

Of course, they did not have the dot in the middle of the letter. This was done hundreds of years later. Now if you see the English letter 'C', particularly a letter in a serif font, you can see very clearly the similarity between the Arabic Jeem and the capital C. Hence the name "*camel*" for the camel.

We talked about finding traces of that mechanism in modern languages. When Mustafa Kamal changed the script of the Turkish language from Nastaleeq to Roman, the designers of that change chose the Roman letter C for the sound of *jeem*.

How did the *j* sound change into a *c* sound in the English language? Or in all European languages (although in some languages it depicts the "ch" sound) such as Russian and Italian? Even in English, it sometimes becomes an S and at other times a K. It's a long story. So, let us cut it short and come to the Roman alphabets, which are used in all Romance languages starting

from Latin to modern French, Spanish and Italian, as well as in English (although English is classified as a Saxon language, but it is greatly influenced by Latin).

The Latin speakers decided to use their alphabets for numbers. They took the first three numbers from the ancient hieroglyphics, I, II, III; and then devised a very intelligent system. They invented values for some select characters in the alphabet based on phonetics (because the language came from an oral tradition), starting with M for 1,000, since M is the first letter of the word millennium, which is a period of one thousand years; C for 100 because the word is CENT. Then they opened up to other values.

$$D = 500$$

$$L = 50$$

$$X = 10$$

$$V = 5$$

We can see that they were working in multiples of five. With that basic set, they developed a system of placement. For example, for 21 they would use XXI, for 49 they would use IL. Here is the brilliance of the scheme. They found a minimum number of characters to depict multiples of five up to a thousand and then devised a system which can be defined as follows:

A character can be placed in front of a character and that would depict the sum of those values, such as VI for six. But, if a lower value number is placed to the left of a higher value number, that would cause a subtraction of the lower value from the higher value. So, for fifteen XV, but for 4 it becomes IV, and so on. That was an improvement on the Arabic system of using the sum of all letters in a group.

But soon, they realized that for very large numbers, it would become an impossible situation.

The next improvement came from the Arabs though. They invented new shapes for nine numbers, from 1 to 9. That gave the mathematicians an unlimited scope to depict numbers.

Then came the invention of zero. Although the Arabs had borrowed the concept of zero from the Guptas of India, it was the Arabs who actually came up with the placement theory of numbers and thus the decimal numbers.

So, any number placed to the left of a number will be multiplied by ten and then added to the number on the right. If there is a third place on the left, it would be multiplied by the square of ten, i.e. 100 and so on. This was the beginning of a number theory which resulted in to the invention of algebra by the Arabs several centuries later.

The Arabic word for zero is *sifr*, and that gave rise to the English word cipher.

And the digits that we use today in English are called Arabic numbers, as opposed to the Roman numbers that we discussed above.

Then, man wanted to do all his arithmetic automatically. So, the Englishman named Charles Babbage created his analytical engine in 1837. This machine worked on a set of ten geared wheels. Every time a wheel made ten rotations, the next wheel would go up one. However, it was not a mere counter, Babbage's machine had a logic unit which took decisions such as, whether a number is equal to, greater than or less than another number, it could perform certain operations in a loop. Therefore, this machine could be operated by a pre-written program. This was the precursor of our modern computer.



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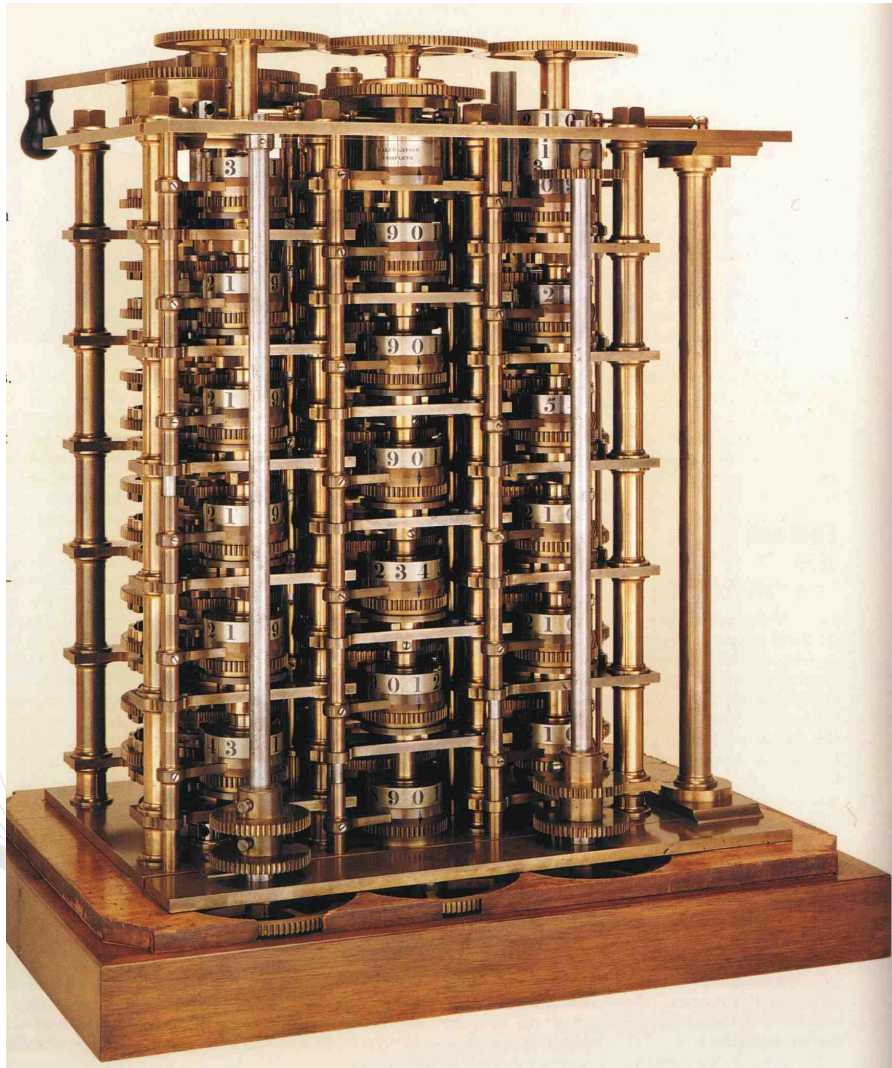


Figure 1: an early model of Charles Babbage's machine.

The first programmer who wrote programs for Babbage's machine was Lady Lovelace, the daughter of the famous poet Lord Byron. Her first name was Ada. In memory of Lady Lovelace, a computer language was created and named Ada in 1979.

Unfortunately, Babbage's project failed due to lack of funds and because of that, there was no available engineer who would work on Babbage's plans. It took another hundred years for the first computer to materialize into a working shape.

The basic problem the engineers realized was that working on a decimal number in a mechanical system was much too cumbersome and had a limited scope. By this time the wide

usage of electric current had become commonplace. So they changed the mechanical machine into an electric machine and they modified the counting based on a decimal system to a binary system. This was revolutionary. Now, zero and one could be depicted by the on/off position of an electrical device such as a light bulb or a vacuum tube. A row of such bulbs would be able to depict any number. But the size and cost of such a device was becoming prohibitive. But soon the transistor was invented. That did away with the bulk, size and weight of the vacuum tube. Better and better devices (based on magnetic material) were created to depict the numbers.

What does the binary system look like? Off is zero, on is one. To depict a higher number such as 15, we will see something like this graphically: 1111. Starting from the left, the first one equals 8, the next one equals 4, the next one equals 2 and the last one is one. By adding all the values we get 15. Electronically, we will have to add additional bits in memory which could be switched on and off to depict higher numbers.

A few days ago, our friend Javed Jamil, had elaborated the rules of Arooz, the prosody of Urdu, Farsi and Arabic poetry. He had used a binary system to depict the short and long syllables, except he had chosen 1 and 2 instead of 0 and 1.

Soon the engineers realized that these bits could be grouped into 4 and 8 to create octal and hexadecimal systems of counting. Such groups came to be called bytes.

The problem with hexa-decimal was that the system needed additional characters to depict 11, 12, 13, 14 And 15. They chose A, B, C, D, E and F.

If we wrote “10” it would mean sixteen. An eight-bit byte of value “FF” will be equal to 255. That gave enormous scope to computer technology.

That is how we have our modern laptop with 4-megabyte storage and hard disks with up to a terabyte capacity, and they do not weigh more than ten pounds. And it costs as low as \$200. Our seven year olds use the laptop without any help; in fact they can do things much faster and better as compared to adults. Compared to the first working computer ENIAC, which was completed in 1946 at the U.S Defense Lab.

- The name was abbreviated from Electronic Numerical Integrator and Computer
- It took 18,000 vacuum tubes.
- Occupied a 30 by 50 foot room (1,500 sq. foot of space).

- It was programmed by plugging wires into a patch panel. This was very difficult to do, because this style of programming requires intimate knowledge of the computer.

So, we can see that the methodology of counting had started from very basic principles, had evolved over the centuries, and now we are coming back to the very ancient basic principles to do our work using the most modern technology.

All About 786- Part 3

Every language has two aspects to it: one, The spoken word, which is the phonetic aspect of the language, and two, the orthography of the language which is the written word. The discussion we are having here relates to the orthography of the Arabic language, and all other languages which have borrowed the script from Arabic such as Farsi, Urdu, Old Turkish and Sindhi languages. We saw that the Romans selected only a very small subset of their alphabet to depict numbers. As opposed to that, the Arabs gave a numerical value to each one of their alphabets. That naturally created a very strong relationship between the written text and numbers in the Arabic language that we do not find in any of the Romance languages. One other aspect of the Arabic language is worth explaining here: We saw that one of the first alphabets was created by the Phoenicians around 900-1000 B.C. All other alphabets emanated from that original source.

The idea of alphabets was that man needed a small set of characters to depict meaningful sounds of voices he generated in speaking in written form. As opposed to that, the Chinese alphabet consisted of pictures. For example, if someone wanted to write the word “house” in Chinese, he/she would draw the picture of a house. And that became the origin of the Chinese writing system. The Phoenicians divided the words that they spoke into syllables. Each such syllable is identified as a phoneme in terms of linguistics. Then they decided to give a unique shape to each one of the phonemes. In linguistics, these shapes are called graphemes.

When we discussed the origin and the shape of the Arabic letter ح in the previous post, we saw that it was actually a pictorial representation of a camel. So, originally, even the oldest graphemes relate to some graphical representations, which over time, have become the shapes of the letters.

So, in principle, we should have one and only one grapheme representing a phoneme. If we look at the Arabic language we will see that each letter of the alphabet has only one sound associated with it. That makes Arabic a perfect language vis-à-vis the relationship of its phonology to its orthography. This one characteristic of the language makes Arabic an ideal candidate for writing chronograms.

As opposed to that, English is an imperfect language in terms of the relationship between its phonology and the orthography. Just look, for example, at the letter *t*, and the various diverse sounds it makes in words such as “Thomas”, “thin”, “the”, “tradition”, “capture”, and “stick”. Or the letter *c*, which becomes an *s* in “cite” and a *k* in “critical.”

Having said all that, let us explain that writing chronograms is a function of orthography and not of phonology. When a word (a name or action or sentiment) is written, every letter in the word is counted for the total number, whether a letter is pronounced or not. Let us give an example. Consider the two words:

وَالشَّمْسُ

وَالْقَمَرُ

The *laam* in the first word is silent, but it will be counted when calculating the total numerical value of that word. As opposed to that the *laam* in the second letter is sounded and it will, obviously, be counted when calculating the total number for that word. Similarly, the *sheen* in the first word has a *tashdeed*, so it is sounded twice, but it will only be counted once when calculating the total numerical value of the word. There is no value attached to the vowels. So much so, that if we have an *alif-khanjaria* a letter, such as the one in the word “*rahman*”, it is not counted in evaluating the total numerical value of the word. That is where Urdu orthography differs from the original Arabic. In Urdu we sometimes write names such as Rahman and Isma’eel with a full alphabetical *alif* rather than an *alif-khanjaria*. Actually, that can be of help when writing chronograms in Urdu. If we are short of one, we can write such names in poetry with *alif*

and make up the number. With those simple rules, let us see how we arrive at the numerical value of بسم الله الرحمن الرحيم .

Following those rules, we find a total of 19 letters in the phrase which add up to 786.

Serial number	character	value
1	ب	2
2	س	60
3	م	40
4	ا	1
5	ل	30
6	ل	30
7	هـ	5
8	ا	1
9	ل	30
10	ر	200
11	ح	8
12	م	40
13	ن	50
14	ا	1
15	ل	30
16	ر	200
17	ح	8
18	ى	10
19	م	40

Now, we can see that the actual numerical values of the characters in the Arabic alphabet are fixed. What shall we do about new characters in Farsi such as پ چ گ ژ and

for the letters in the Urdu and Sindhi alphabets depicting purely Indo-Aryan sounds such as ٹ ٲ ٲ. Luckily, our able and learned friend, Kamal Abdali has already dealt with that issue, so we will move on. The next issue we have to deal with is the fact that we can find umpteen number of words and phrases written using the Arabic alphabet which will result in a total of 786 by adding all the numerical values of the letters found in such phrases. Here, we have to evaluate the purpose of writing 786 at the head of a significant document. What do we want to say by that indication? Do we want to remember that we have to recite Bismillah before starting to read the rest of the document or is it just frivolous fun and entertainment?

If we want to convey to the reader that they must recite “Bismillah” before reading the rest of the document, and the reader is aware of that method of communication, then we have found the purpose in writing the number 786 in all our correspondence and other significant documents. The basic reason for doing that was to preserve the sanctity of Allah’s High Names from abuse and destruction, which we did achieve in this method.

Writing “786” at the beginning of a document is simply a reminder to the reader that he should recite “Bismillah” before beginning to read the rest of the text.

For the last few years a message has been circulating on the internet that it is a secret trick to make Muslims deviate from the right path because 786 is the numerical value of the Hindu phrase “Hari Krishna”. This is one the most “brilliant” red-herrings someone has created.

The *abjad* dates back some thousands of years in Arabia via the original Phoenician alphabet, as we have seen. Hari Krishna is a phenomenon of India. The Indians did not read, write or speak Arabic, they used many different languages, Sanskrit to start with, that is written in Devnagari script. Arabic is a Semitic language and Sanskrit and all its derivatives are Indo-Aryan languages. The Hare Krishna cannot be connected to the Arabic *abjad* by any stretch of historical facts. Arabic is written right to left and has its unique character set. Sanskrit is written left to right and its character set is totally different from Arabic. So, forget about Hari-Krishna, that has nothing to do with 786. It is one of those things that was done between “*Khuda hafiz*” and “*Allah hafiz*”. When people become obsessed with something and they suffer from religious extremism, and on top of

that, they have nothing better to do, and so this kind of rubbish germinates. As the English cliché goes, “an empty mind is the Devil’s workshop.”

Be thankful to those intelligent Muslims who designed the system of writing 786 at the head of a letter to save the potential desecration of a Qur’anic verse.



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