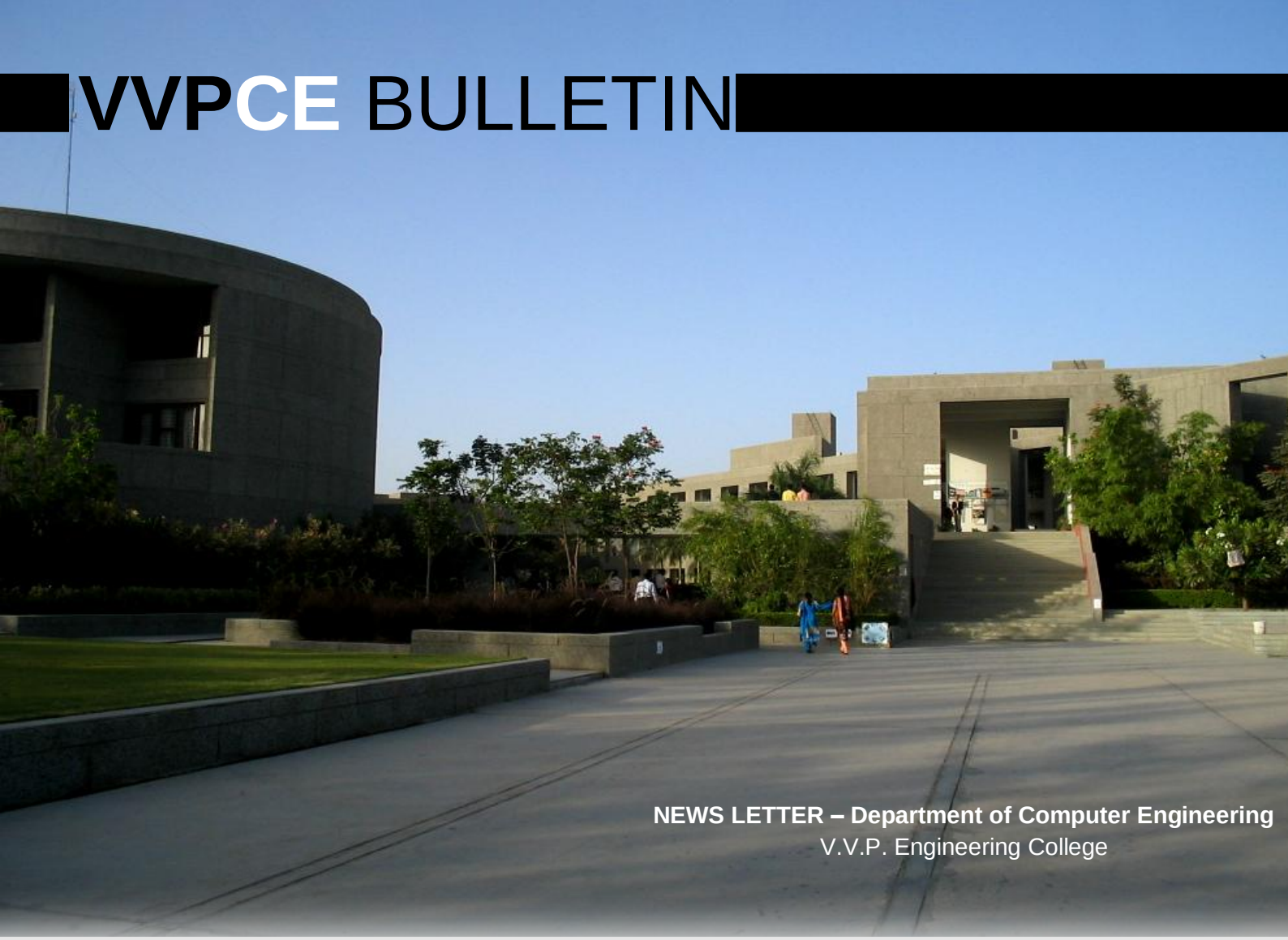
# VVPCE BULLETIN



**NEWS LETTER – Department of Computer Engineering**
V.V.P. Engineering College

## INTERNET ASSIGNED NUMBER AUTHORITY SUDOKU WHY VOTE!!! IANA SORTING ALGORITHM ECOLOGICAL FOOTPRINT VOIP VOICE OVER INTERNET PROTOCOL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# Internet Assigned Numbers Authority

IANA is broadly responsible for the allocation of globally unique names and numbers that are used in Internet protocols that are published as RFC documents. These documents describe methods, behaviours, research, or innovations applicable to the working of the Internet and Internet-connected systems. IANA also maintains a close liaison with the Internet Engineering Task Force (IETF) and RFC Editorial team in fulfilling this function.

In the case of the two major Internet namespaces, namely IP addresses and domain names, extra administrative policy and delegation to subordinate administrations is required because of the multi-layered distributed use of these resources.

**IP addresses**

IANA delegates allocations of IP address blocks to Regional Internet Registries (RIRs). Each RIR allocates addresses for a different area of the world. Collectively the RIRs have created the Number Resource Organization formed as a body to represent their collective interests and ensure that policy statements are coordinated globally.

The RIRs divide their allocated address pools into smaller blocks and delegate them in their respective operating regions to Internet service providers and other organizations. Since the introduction of the CIDR system, IANA typically allocates address space in the size of /8 prefix blocks for IPv4 and /23 to /12 prefix blocks from the 2000::/3 IPv6 block to requesting regional registries as needed.

**Domain names**

IANA administers the data in the root nameservers, which form the top of the hierarchical DNS tree. This task involves liaising with top-level domain operators, the root nameserver operators, and ICANN's policy making apparatus.

ICANN also operates the .int registry for international treaty organizations, the .arpa zone for Internet infrastructure purposes, including reverse DNS service, and other critical zones such as root-servers.

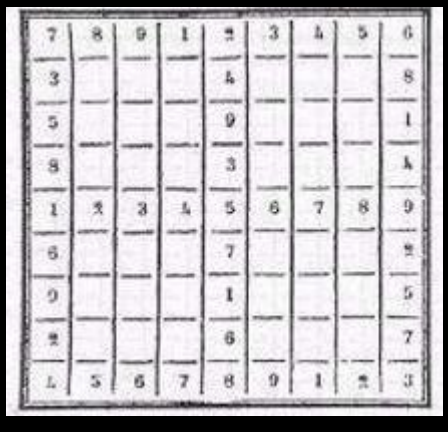
**Protocol parameters**

IANA administers many parameters of IETF protocols. Examples include the names of Uniform Resource Identifier (URI) schemes and character encodings recommended for use on the Internet. This task is undertaken under the oversight of the Internet Architecture Board, and the agreement governing the work is published in RFC 2860.

**Time zone database**

The IANA time zone database holds the time zone differences and rules for the various regions of the world and allows this information to be mirrored and used by computers and other electronic devices to keep accurate track of time zones through the Internet.

IANA resumed operation of the database on October 16, 2011, after the *Astrolabe, Inc. v. Olson et al.* lawsuit and the database's eventual shutdown.



# SUDOKU

Number puzzles appeared in newspapers in the late 19th century, when French puzzle setters began experimenting with removing numbers from magic squares. *Le Siècle*, a Paris-based daily, published a partially completed 9×9 magic square with 3×3 sub-squares on November 19, 1892. It was not a Sudoku because it contained double-digit numbers and required arithmetic rather than logic to solve, but it shared key characteristics: each row, column and sub-square added up to the same number.

On July 6, 1895, *Le Siècle*'s rival, *La France*, refined the puzzle so that it was almost a modern Sudoku. It simplified the 9×9 magic square puzzle so that each row, column and broken diagonals contained only the numbers 1–9, but did not mark the sub-squares. Although they are unmarked, each 3×3 sub-square does indeed comprise the numbers 1–9 and the additional constraint on the broken diagonals leads to only one solution.

These weekly puzzles were a feature of French newspapers such as *L'Echo de Paris* for about a decade but disappeared about the time of World War I.

According to Will Shortz, the modern Sudoku was most likely designed anonymously by Howard Garns, a 74-year-old retired architect and freelance puzzle constructor from Connersville, Indiana, and first published in 1979 by Dell Magazines as *Number Place* (the earliest known examples of modern Sudoku). Garns's name was always present on the list of contributors in issues of *Dell Pencil Puzzles and Word Games* that included *Number Place*, and was always absent from issues that did not. He died in 1989 before getting a chance to see his creation as a worldwide phenomenon. It is unclear if Garns was familiar with any of the French newspapers listed above.

The puzzle was introduced in Japan by Nikoli in the paper *Monthly Nikolist* in April 1984 as *Sūji wa dokushin ni kagiru* (数字は独身に限る?), which also can be translated as "the digits must be single" or "the digits are limited to one occurrence." (In Japanese, *dokushin* means an "unmarried person".) At a later date, the name was abbreviated to *Sudoku* (數獨) by Maki Kaji (鍜治 真起 *Kaji Maki*?), taking only the first kanji of compound words to form a shorter version.[10] *Sudoku* is a registered trademark in Japan and the puzzle is generally referred to as *Number Place*. In 1986, Nikoli introduced two innovations: the number of givens was restricted to no more than 32, and puzzles became

"symmetrical" (meaning the givens were distributed in rotationally symmetric cells). It is now published in mainstream Japanese periodicals, such as the *Asahi Shimbun*.

*The Times* of London began featuring Sudoku in 2004.

# VOIP VOICE OVER INTERNET PROTOCOL

VoIP (voice over internet protocol) is a communication protocols and transmission techniques that use for delivery voice communication and multimedia session over internet protocol networks.
VoIP also refers to IP telephony or Internet telephony which use for communication services like SMS, Voice, fax that are transport via the internet rather than the conventional PSTN (public switched telephone network).

**VoIP Protocols:**

VoIP can be implemented using both the proprietary and open protocols. Some protocols are listed here which are used in VoIP.

- H.323
- IMS(IP Multimedia Subsystem)
- MGCP(Media Gateway Control Protocol)
- SIP(Session Initiation Protocol)
- RTP(Real-Time Transport Protocol)
- SDP(Session Description Protocol)
- IAX(Inter-Asterisk exchange)

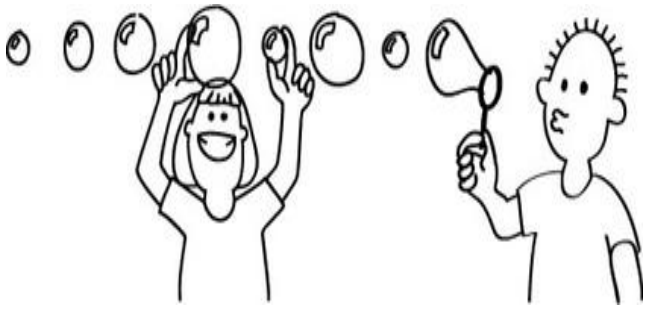
**How VoIP works?**

In the VoIP, the IP packets send on packet-switched network rather than circuit-switched network in PSTN. Hence the cost of the tolls charge from service providers can be reduced in an efficient way using VoIP. In all of above protocols the most widely used protocol is SIP because it is signaling protocol that is used in transfer of voice and video calls over IP. Using SIP, you can create or terminate point to point or multipoint sessions.

| Software | Operrating System |
|---|---|
| Skype | Linux,Mac OS X,Windows |
| BitWise IM | Linux,Mac OS X,Windows |
| Brosix | Windows |
| Fring | Nokia S60 |
| Google Talk | Windows |
| MS Netmeeting | Windows |
| Twinkle | Linux |
| Yahoo Messenger | Linux,Mac OS X,Windows |
| SIPSet | Linux |

Software that used VoIP:

In your day-to-day life, you often do text chatting, voice chatting or video chatting through any software. All this kind of software are mostly based of VoIP. Some of the software are listed below with their compatible operating system.
Or you can make your own VoIP server using some application like Asterisk operating system based on Linux



In computer science, a **sorting algorithm** is an algorithm that puts elements of a list in a certain order. The most-used orders are numerical order and lexicographical order. Efficient sorting is important for optimizing the use of other algorithms (such as search and merge algorithms) that require sorted lists to work correctly; it is also often useful for canonicalizing data and for producing human-readable output. More formally, the output must satisfy two conditions:

1. The output is in non-decreasing order (each element is no smaller than the previous element according to the desired total order);
2. The output is a permutation (reordering) of the input.

Since the dawn of computing, the sorting problem has attracted a great deal of research, perhaps due to the complexity of solving it efficiently despite its simple, familiar statement. For example, bubble sort was analyzed as early as 1956.[1] Although many consider it a solved problem, useful new sorting algorithms are still being invented (for example, library sort was first published in 2006). Sorting algorithms are prevalent in introductory computer science classes, where the abundance of algorithms for the problem provides a gentle introduction to a variety of core algorithm concepts, such as big O notation, divide and conquer algorithms, data structures, randomized algorithms, best, worst and average case analysis, time-space tradeoffs, and upper and lower bounds.

SORTING ALGORITHM

**Classification**

Sorting algorithms used in computer science are often classified by:

- Computational complexity (worst, average and best behaviour) of element comparisons in terms of the size of the list ($n$). For typical serial sorting algorithms good behaviour is $O(n \log n)$, with parallel sort in $O(\log^2 n)$, and bad behaviour is $O(n^2)$. (See Big O notation.) Ideal behaviour for a serial sort is $O(n)$, but this is not possible in the average case, optimal parallel sorting is $O(\log n)$. Comparison-based sorting algorithms, which evaluate the elements of the list via an abstract key comparison operation, need at least $O(n \log n)$ comparisons for most inputs.
- Computational complexity of swaps (for "in place" algorithms).
- Memory usage (and use of other computer resources). In particular, some sorting algorithms are "in place". Strictly, an in place sort needs only O(1) memory beyond the items being sorted; sometimes $O(\log(n))$ additional memory is considered "in place".
- Recursion. Some algorithms are either recursive or non-recursive, while others may be both (e.g., merge sort).
- Stability: stable sorting algorithms maintain the relative order of records with equal keys (i.e., values).
- Whether or not they are a comparison sort. A comparison sort examines the data only by comparing two elements with a comparison operator.
- General method: insertion, exchange, selection, merging, *etc.* Exchange sorts include bubble sort and quick sort. Selection sorts include shaker sort and heap sort. Also whether the algorithm is serial or parallel. The

remainder of this discussion almost exclusively concentrates upon serial algorithms and assumes serial operation.

- Adaptability: Whether or not the presortedness of the input affects the running time. Algorithms that take this into account are known to be adaptive.

**Stability**

Stable sorting algorithms maintain the relative order of records with equal keys. (A key is that portion of the record which is the basis for the sort; it may or may not include all of the record.) If all keys are different then this distinction is not necessary. But if there are equal keys, then a sorting algorithm is stable if whenever there are two records (let's say R and S) with the same key, and R appears before S in the original list, then R will always appear before S in the sorted list. When equal elements are indistinguishable, such as with integers, or more generally, any data where the entire element is the key, stability is not an issue. However, assume that the following pairs of numbers are to be sorted by their first component:

(4, 2) (3, 7) (3, 1) (5, 6)

In this case, two different results are possible, one which maintains the relative order of records with equal keys, and one which does not:

(3, 7) (3, 1) (4, 2) (5, 6) (order maintained)
(3, 1) (3, 7) (4, 2) (5, 6) (order changed)

Unstable sorting algorithms may change the relative order of records with equal keys, but stable sorting algorithms never do so. Unstable sorting algorithms can be specially implemented to be stable. One way of doing this is to artificially extend the key comparison, so that comparisons between two objects with otherwise equal keys are decided using the order of the entries in the original data order as a tie-breaker. Remembering this order, however, often involves an additional computational cost.

Sorting based on a primary, secondary, tertiary, etc. sort key can be done by any sorting method, taking all sort keys into account in comparisons (in other words, using a single composite sort key). If a sorting method is stable, it is also possible to sort multiple times, each time with one sort key. In that case the keys need to be applied in order of increasing priority.

Example: sorting pairs of numbers as above by second, then first component:

(4, 2) (3, 7) (3, 1) (5, 6) (original)
(3, 1) (4, 2) (5, 6) (3, 7) (after sorting by second component)
(3, 1) (3, 7) (4, 2) (5, 6) (after sorting by first component)

On the other hand:

(3, 7) (3, 1) (4, 2) (5, 6) (after sorting by first component)
(3, 1) (4, 2) (5, 6) (3, 7) (after sorting by second component, order by first component is disrupted).

# ECOLOGICAL FOOTPRINT

The **ecological footprint** is a measure of human demand on the Earth's ecosystems. It is a standardized measure of demand for natural capital that may be contrasted with the planet's ecological capacity to regenerate. It represents the amount of biologically productive land and sea area necessary to supply the resources a human population consumes, and to assimilate associated waste. Using this assessment, it is possible to estimate how much of the Earth (or how many planet Earths) it would take to support humanity if everybody followed a given lifestyle. For 2007, humanity's total ecological footprint was estimated at 1.5 planet Earths; that is, humanity uses ecological services 1.5 times as quickly as Earth can renew them. Every year, this number is recalculated to incorporate the three-year lag due to the time it takes for the UN to collect and publish statistics and relevant research.

Although the term *ecological footprint* is widely used and well known, the methods used to calculate it vary greatly. However, standards are now emerging to make results more comparable and consistent.

**Overview**

The first academic publication about the ecological footprint was by William Rees in 1992. The ecological footprint concept and calculation method was developed as the PhD dissertation of Mathis Wackernagel, under Rees' supervision at the University of British Columbia in Vancouver, Canada, from 1990–1994 Originally, Wackernagel and Rees called the concept "appropriated carrying capacity".[ To make the idea more accessible, Rees came up with the term "ecological footprint", inspired by a computer technician who praised his new computer's "small footprint on the desk". In early 1996, Wackernagel and Rees published the book *Our Ecological Footprint: Reducing Human Impact on the Earth*.

Ecological footprint analysis compares human demands on nature with the biosphere's ability to regenerate resources and provide services. It does this by assessing the biologically productive land and marine area required to produce the resources a population consumes and absorb the corresponding waste, using prevailing technology. Footprint values at the end of a survey are categorized for Carbon, Food, Housing, and Goods and Services as well as the total footprint number of Earths needed to sustain the world's population at that level of consumption. This approach can also be applied to an activity such as the manufacturing of a product or driving of a car. This resource accounting is similar to life cycle analysis wherein the consumption of energy, biomass (food, fiber), building material, water and other resources are converted into a normalized measure of land area called global hectares (gha).

Per capita ecological footprint (EF), or ecological footprint analysis (EFA), is a means of comparing consumption and lifestyles, and checking this against nature's ability to provide for this consumption. The tool can inform policy by examining to what extent a nation uses more (or less) than is available within its territory or to what extent the nation's lifestyle would be replicable worldwide. The footprint can also be a useful tool to educate people about carrying capacity and over-consumption, with the aim of altering personal behaviour. Ecological footprints may be used to argue that many current lifestyles are not sustainable. Such a global comparison also clearly shows the inequalities of resource use on this planet at the beginning of the twenty-first century.

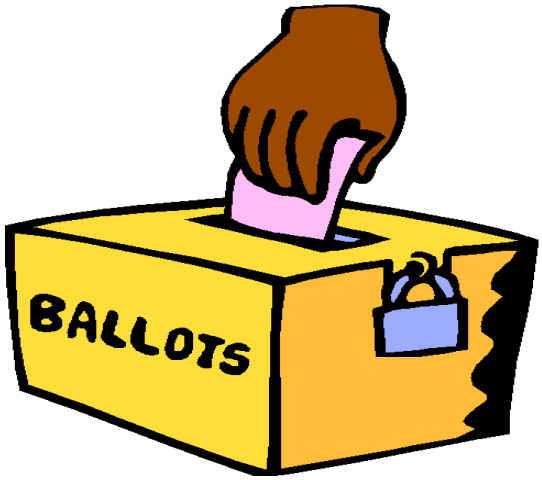
In 2006, the average biologically productive area per person worldwide was approximately 1.8 global hectares (gha) per capita. The U.S. footprint per capita was 9.0 gha, and that of Switzerland was 5.6 gha, while China's was 1.8 gha.[10][11] The WWF claims that the human footprint has exceeded the bio capacity (the available supply of natural resources) of the planet by 20%.[12] Wackernagel and Rees originally estimated that the available biological capacity for the 6 billion people on Earth at that time was about 1.3 hectares per person, which is smaller than the 1.8 global hectares published for 2006, because the initial studies neither used global hectares nor included bio productive marine areas.

A number of NGOs offer ecological footprint calculators.

Ecological footprint analysis is now widely used around the globe as an indicator of environmental sustainability. It can be used to measure and manage the use of resources throughout the economy. It can be used to explore the sustainability of individual lifestyles, goods and services, organizations, industry sectors, neighborhoods, cities, regions and nations. Since 2006, a first set of ecological footprint standards exist that detail both communication and calculation procedures. They are available at www.footprintstandards.org and were developed in a public process facilitated by Global Footprint Network and its partner organizations.

# WHY VOTE!!!!

If you check out the polls, you will see that in most constituencies, a max of 60% people go and vote (shocking!). Now this 60% of the votes is typically shared between 4-6 candidates who may be contesting the election for that place. Even assuming that only 3 are the popular ones, the vote distribution will be approximately 10-15% each (of the 60) among the popular ones and the rest among the others. So we will usually have a victory with just 15-20% of the votes of a given constituency! So a person will come into power with a "majority" vote of just 15-20%, usually much less, maybe even 10-12%!!! This in itself is pretty flawed according to me, you will have a very hard time convincing me that 49% is a majority, let alone 12-20%.




Our politicians seem to be pretty good at maths, and they have done this calculation, and so know that to win an election, they need to worry ONLY about getting 20% of the votes. So they divided the country into OBC, and SC/ST

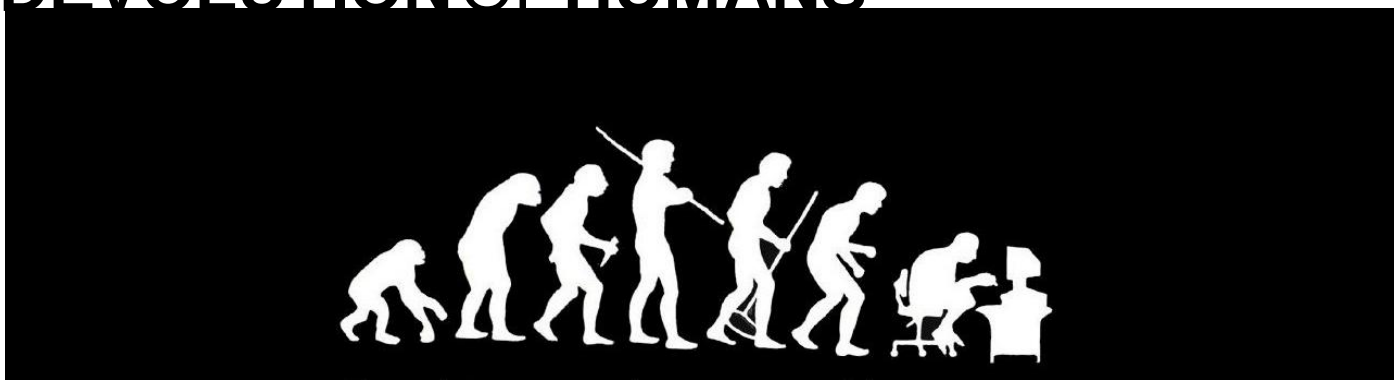
and minority castes and so on, so that they could see a clear 20% of the population they would need to take care of (appease) so that they would be able to secure their vote and stay/get into power.

When you see it this way, almost every single government policy will make perfect sense.

Now how can you confound this happy little scheme? Well, if more than 90% of the population goes and votes, then just securing that cozy 20% of the votes is not going to get them into power. Then, they will have to actually take care of everyone… the majority as well as the minority, which they should have been doing in the first place, but don't, coz the majority DOESN'T VOTE!

So to force the hand of the government to be "by the people, for the people and of the people" more PEOPLE need to vote.

# DEVOLUTION OF HUMANS



we, the humans, frequently brag about our phenomenal evolution from apes to what we are. We often cherish the successful journey that we have accomplished through crossing this massive path of development and growth. But where are we really going? Has anyone really on this planet given a thought to it?

Humans are considered the most intelligent, smart and shrewd species of the planet. This fact is obviously the one to take pride in as we have developed these qualities after a long route of evolution. From something ordinary, we have become so capable that "extra-ordinary" can be used synonymously to human-beings. Evolution up to humans was good, in fact great. But what lies beyond? Apes to humans…but humans to what? The answer is easily visible in our lifestyles. It's there…in plain sight…yet hidden, or shall I say ignored?

A real human, in its true sense, is characterized by superior intelligence, articulate speech, kindness, considerateness and greater emotional quotient. While Robots are mechanical devices that sometimes resemble a human and are capable of performing a variety of often complex human tasks on command or by being programmed in advance.

There is no animosity between humans and robots. There shouldn't be, for former has invented the latter and the latter is quite helpful to the inventor species. In today's world, machines define life-styles and lay roads to advancement. They have provided new dimensions to our existence and development. As Sir Arthur C. Clarke has said, "Any sufficiently advanced technology is indistinguishable from magic." We have seen the evolution of automation from wheel to space-shuttles. All of these inventions have served wonders in our

lives. Life without these mechanical wonders has become unimaginable, perhaps impossible.

The problem is not how far the technology advances or how much inseparable they become in our lives, but the catch is that we, the so-called human-beings, are becoming like them. Efforts are being made to imbue human qualities in robots, but the process seems to be moving the other way round.

In the race to superiority, sublime characteristics which define a human-being are being neglected. Altruism, love, mercy, sympathy, sentiment – they are no longer the concepts that drive a human life. Instead, the forces which control our lives are greed, lust, materialistic pleasures, violence and hatred.

In the following paragraphs, some light has been flashed on the characteristics that we share with robots.

**We are programmed:** Life has become monotonous and automated. The program is already written in our brains and we '*execute*' it day by day.

**Command and function:** If we are lucky (or unlucky), we get a promotion – 'system upgrade'. We receive more salaries, but we have to be more productive and efficient than the previous '*configuration*' of ourselves.

**At your service round the clock:** Working timings are set like we have nothing else to do in life. Robots don't sleep, likewise, we stay up during nights taking pills to stay awake and finish the job.

**Social life!!? Do we have one?** We have time to earn a few more bucks doing over-time, but can't arrange an hour to take our children to amusement park. We sit for hours with business partners, but can't even attend a call of a friend.

**Do we mean what we speak?** Some of the students just read the matter and store it in their memory bank without understanding them. Then in the examinations they just '*output*' it like recovering some data from the retrieval system.

**"Unemotionality":** If you are upset, robot will not console you. If anyone has programmed the tin-box to do so, it is just cosmetic with no heart involved. We are following the same course today. There is no room for true feelings, compassion and values. If there are any traces of them, they are just superficial.

**Forced labor:** The word "robot" is derived from a Czech word – "robota", which means "**forced labor**". Children are forced to study like maniacs; adolescents are compelled to concentrate on their professional courses.

**Change:** We change our boyfriends/girlfriends, life-partners, houses, jobs and what not. We just keep asking for newer and advanced '*versions*' all the time.

**Conclusion:** It was good if becoming robotic meant becoming more accurate, precise, highly memory-powered, quick and efficient. But we have not transformed ourselves in that sense. The above mentioned qualities make a robot an admirable figure. These are the very qualities which we should learn from them, and not the adverse ones like stiffness and unemotional behavior.

This devolution has to stop. We have to roll our sleeves up to combat this deterioration. By using our conscience to its best effect, this silent but definite conversion of humans to robots has to be curbed.

## **LIFE** IS A GIFT


Today before you think of saying an unkind word–
think of someone who can't speak.
Before you complain about the taste of your food–
think of someone who has nothing to eat.

Before you complain about your husband or wife–
think of someone who is crying out to God for a companion.
Today before you complain about life–
think of someone who went too early to heaven.

Before you complain about your children–
think of someone who desires children but they're barren.
Before you argue about your dirty house, someone didn't clean or sweep–
think of the people who are living in the streets.

Before whining about the distance you drive–
think of someone who walks the same distance with their feet.
And when you are tired and complain about your job–
think of the unemployed, the disabled and those who wished they had your job.
But before you think of pointing the finger or condemning another–
remember that not one of us are without sin and we all answer to one maker.

And when depressing thoughts seem to get you down–
put a smile on your face and thank God you're alive and still around.

**Life is a gift – Live it, Enjoy it, Celebrate it, and Fulfill it.**

# **HOCKEY :** OUR NATIONAL GAME ???

In India the craze of cricket is on such level that many of the Indians did not even bother to know about our National game- HOCKEY. Most of the Indians know only that much about Hockey that it is the game played in movie 'Chak De India'....For such Indians who know only one game Cricket, here is something worth reading to understand the glory of our National Game.

The Golden Era in Indian Hockey lasted for 28 years between 1928 to 1956. Between 1928-1956 India at the Olympics, won the gold medal consecutively, 6 times. India played 24 Olympic matches, won all 24, scored 178 goals (at an average of 7.43 goals per match) and conceded only 7 goals. India has also won gold medals at the 1964 and the 1980 Olympics, taking the total gold tally to 8. The first sporting achievement of independent India was the 1948 Olympic hockey gold medal. Over 25,000 spectators watched the 1948 Olympic hockey final between India and Britain, played at Wembley. This was the first time that India and Britain played an official hockey match, and India went on to beat Britain 4-0. That was the first time that India's national flag was displayed and India's national anthem, *Jana Gana Mana*, was played at an Olympic venue. So dominant was the Indian hockey team of old that it took 28 years for India to score only 1 goal in a match (India 1 - Germany 0 in the 1956 Olympic semi-final), and it took 40 years before a country scored

more than one goal against India in the Olympics (New Zealand 2 - India 1 in the 1968 Olympics).In the 1936 Berlin Olympics, Dhyan Chand, who was the captain of the team, had the distinction of scoring 11 out of 38 goals scored by his side.

**Other interesting facts about Indian hockey:**

The Indian Hockey Federation was formed at Gwalior in 1925. India joined the International Hockey Federation (FIH) in 1928, becoming the first non-European member of the FIH. The first Indian sports teams to ever set foot in Australia/New Zealand (1926), Europe (1928) and Japan/USA (1932) were the Indian hockey teams. The first Indian sports team to do around-the-world tour was the 1932 Indian hockey team. They played matches in Colombo, Malaya, Tokyo, Los Angeles, Omaha, Philadelphia, Amsterdam, Berlin, Prague and Budapest, before triumphantly returning to the shores of India.

India also has to her credit, the largest victory margin in a pool match (India 24 - USA 1 in the 1932 Olympics), and the largest number of consecutive victories (30 wins on the trot from 1928 to 1960)

Sansarpur, a tiny village on the outskirts of Jalandhar, has the distinction of producing 9 Olympians - Gurmit Singh (1932), Udham Singh (1952, '56,'60, '64), Gurdev Singh (1956), Darshan Singh (1964), Jagjit Singh (1964,'68), Balbir Singh - Services, Balbir Singh - Punjab and Tarsem Singh (1968),and the World Cup winning captain Ajitpal Singh (1968, '72, '76).

The most common surname among Indian hockey players is Singh. As a foreign journalist wrote in his dispatch, "Singh initiated the move. After dodging past a defender, Singh passed the ball to Singh, who centered it to Singh and Singh scored the goal with a reverse flick."