IT GUIDE AND CARRERS

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CAREERS IN INFORMATION TECHNOLOGY [IT]

This file includes careers in IT field, steps to be taken for becoming an IT professional, including life of the worlds richest man Bill Gates (Owner of Microsoft Corp. and currently a philanthropist doing charity work)

LIFE OF BILL GATES

Bill gates at the age of 13 enrolled in the Lake side school. When he was in eight grade his school got a General Electric (GE) computer for the school students. Gates took an interest in programming the GE system BASIC and was excused from Math classes to pursue his interest. He wrote his first computer program on his machine : An implementation of Tic Tac Toe that allowed users to play games against the computer. Gates was fascinated by the machine and how it would always execute software code perfectly. He said in his flashback feelings – 'There was just something neat about the machine' . Four students from his group got banned for the summer after it caught from exploiting bugs on the Computer Center Corporation (CCC) in the operating system to obtain free computer time by hacking . Gates then went to CCC office and studied source code for various program that run on the system including programs in FORTRAN ,LISP and machine language .The Lake side students were offered to write payroll program in COBOL by Information Science Inc., providing them computer time and royalties. After his administrators became aware of his programming abilities ,Gate wrote the schools of computer program to schedule students in classes.

At age of 17, Gates formed a venture with Allen called Traf-O-Data to make traffic counter based on the Intel 8088 processor. Gates graduated from Lake Side School in 1973 and was a National Merit Scholar.

After reading the Jan 1975 issue of popular Electronics that demonstrated the Altair 8800 (hardware) ,Gates contacted Micro instrumentation and Telemetry System (MITS) , the creator of the new micro computer to inform them that he and others were working on a BASIC Interpreter for the platform. MITS made a deal and Gates created the ALTAIR Emulator (software and hardware) that ran on a mini computer and then the BASIC Interpreter. The demonstration was successful and MITS made a deal to distribute the interpreter as ALTAIR BASIC. Paul Allen was hired into MITS and Gates took a leave of absence from Harvard to work with Allen at MITS in Nov 1975. They named their partnership 'Micro-Soft' and had their first office located in Albuquerque.

Microsoft then became independent of MITS in lake 1976 and it continued to develop programming language software for various system .IBM (International Business Machines) made a deal with Microsoft and then gates and company developed DOS operating system for IBM computers, then Windows came in and the saga continues. He is now a richest man and is contributing to charity and social service as a philanthropist with his foundation named Melinda Gates Foundation .

Careers in IT

There are various streams of computers relating to hardware ,software and networking. To pursue in any of this streams, students must have a zeal to like the world of computers and must have good logical skills and mathematics. Careers in IT is considered one of the most high-paying jobs and is full of opportunities ,particularly when India's prowess in information technology industry is recognized across the globe. The pool of talented computer engineers working in IT companies of the USA and Canada shows that IT can take a person to higher levels. Numerous IT companies from India employ huge number of computer professionals in their Indian and over seas officed.

STEP BY STEP

BTech or BCA/ MCA can become an IT engineer. Person require +2 with mathematics to pursue BTech or BCA. Others without mathematics too can do various short term certification and diploma courses in various small packages. However ,there is a stringent selection procedure at place for computer engineer where in admission to the BE-BTech courses is extremely competitive. An internship program (training) at various IT companies would garner practical knowledge and employability and it is a must and can be either after or during the course.

START EARLY

Candidates willing to excel in computer engineering should have sound command over mathematics and science to clear entrance exam conducted soon after 12th class. Advanced knowledge of Chemistry and Physics would help the candidates get through the entrance exam conducted by engineering colleges in India .Candidates who wish to do BE/ BTech in computer engineering must have passed 10+2 or equivalent examination ,with Physics, Chemistry and Mathematics. Similarly those who wish to do diploma in Computer Engineering must have passed 10+2 with science subjects. Candidates may opt for ME/M.Tech in computer science for further specialization in computer science.

IS IT THE RIGHT CAREER FOR ME

Depending upon the interest the career in IT can be chosen. Those who love programming and coding can do software engineering and those who prefer networking and system administration ,can do hardware engineering. IT sector is quite broad in terms of employment and job options. Roles are varieties for computer engineer in IT sector ,but their primary role is to apply the knowledge of mathematics and science to design and develop software to be used by clients or users. There are network engineers, system management professionals besides the computer engineers . Computer software engineers have bright career prospects as the application of software and dependency on it various walks of life are increasing.

WHAT WORLD IT COST ME ?

Studying information technology can cost a lot in private engineering colleges. However, government sponsored engineering college charge comparatively low. IITs charge Rs.2,00000 to Rs.2,70,000 ,but the fee depends upon the rank of engineering college and reputation. Diploma programs on the other hand cost lens and a diploma in computer application can be done at 50,000 .

JOB PROSPECTS

Dooming IT sector in India has plenty of jobs for fresh computer science graduates. Candidates from top notch engineering colleges however get attractive job offers from MNC IT companies in comparison to not so known engineering colleges. Additionally ,candidates with high percentage of mark and good communication skills as well as sound computer knowledge do not face problem in getting a job whether they are from a reputed engineering college or not. Computer engineer can get jobs in non IT companies like universities ,research, private and public industries government departments ,business organizations, commercial organization and the manufacturing sector, etc. Besides the computer engineers have plenty of options to work in IT companies in department such as design ,development, assembly, manufacture and maintenance etc. Working as a programmer ,web developer & E-commerce specialist with telecommunication companies, automotive companies, aerospace companies ,etc can be a lucrative career option as well. Moreover, numerous national and multi-national computer manufacturing companies, computer hardware system design and development companies, computer networking companies, software development companies etc. require computer professionals in large numbers.

PAY PACKET

It is the attraction of higher salaries in IT sector which urges youngsters to opt for a course in computer science. In companies to other sector, computer science graduates fetch higher salaries from INR 15,000 – 25,000 in the beginning. After gaining +2 years of work experience ,they can get a salary of INR 40,000. Candidates who get opportunities to work in overseas project get numerous benefits and incentives which may even go to six figures. However, the salary depends a lot upon some factors. Such as the state of the industry, work experience ,qualifications and ability of the candidate ,etc amongst others. Computer science graduates who are in teaching can fetch a salary of INR 20,000 plus allowances and other benefits.

DEMAND AND SUPPLY

True to its global reputation ,the Indian IT sector has lots of scope in terms of growth in employment opportunities. A huge requirements of trained IT engineer is expected in next couple of years. While according to NASSCOM ,the Indian IT exports are expected to expand to the tune of US $175 billion by 2020 and the domestic sector will account for US $ 50 billion in terms of earnings. Similarly ,a huge quantum of profit is expected from the export and domestic IT sector which would be worth US $ 225 billion .

MARKET WATCH

Widening scope for computer science professional can be prophesied from the fact that after the recession is over ,new jobs would come in large numbers in IT sectors. Moreover with low service cost Indian IT companies have leverage over IT companies in the USA, Canada and Australia .The low cost Indian IT service attract lot more business even during recession as companies in developed nation try to reduce their production cost and out source their IT work to India IT firms.

INTERNATIONAL FOCUS

IT sector can truly be considered a global career in terms of its wide scope for professionals. India has been one of the leading exporters of IT talent and Indian computer engineers have played major role in the growth and development of IT sector in the USA, UK, Australia and Canada. Numbers of employment opportunities are waiting for Indian computer professional in these countries. Some new avenues too are being opened for Indian Computer Professionals in Dubai ,Singapore, Bangkok etc. Thanks to global demand for IT services ,which is around USD $ 70 trillion for many new and exciting international careers are opened up for computer professionals.

POSITIVES/ NEGATIVES

Desspite the fact that recent recession showed the worse days for computer engineers ,a great hope still persists for Indian computer science professionals for the reason that India has potential to offer IT services at the fraction of the cost of the USA software developing companies India has advantage in terms of IT professionals as it produces more in numbers then Western countries therefore, the demand can be filled only with Indian professionals who are par excellence vis-à-vis computer professionals of the west. Indian IT companies such as Wipro, Infosys, TCS, Patni, HCL, etc have been able to garner gains even during the recession and have hired a number of computer professionals.

DIFFERENT ROLES, DIFFERENT NAMES

• **Software Developers:** Software developers are professionals who are concerned with facets of the software development process which involves activities such as design and coding, computer programming, project management, etc.

• **Hardware Engineers:** These professionals do research, design, develop, test, and oversee the installation of computer hardware which inter alia includes computer chips, circuit boards, systems, modems, keyboards, and printers.

• **System Designer:** Professionals involved in system designing, Logical & Physical Designing wherein logical designing can be enumerated as the structure & characteristics such as output, input, files, database & procedures, etc.

• **System Analyst:** Computer engineers who work as systems analyst do research about the existing problems and plan solutions for the problem. They also recommend software and system related problems and coordinate development between business development teams.

• **Networking Engineers:** Networking engineers are computer professionals involved in designing, implementation, and troubleshooting of computer networks.

• **DBA:** DBA or Database Administrator are the professionals who are bestowed with the job to design, implement, maintain, and repair an organization's database. Inter alia DBA professionals are also known as Database Coordinator or Database Programmer in IT sector.

Top Companies
• Google
• Yahoo
• Hewlett-Packard
• International Business Machines Corporation
• Toshiba Corporation
• Dell Inc
• NEC Corporation
• Canon Inc
• Apple Inc
• ASUSTEK Computer Inc
• Acer Inc
• Lenovo Group Limited
• SAIC
• Sun Microsystem
• TCS
• Infosys
• HCL
• Wipro
• Techmahindra

Tips for Getting Hired

Like all other engineering professions, Computer Engineering too requires practical knowledge to be employable. There is no short-cut for computer professionals, whatever one knows needs to be put into practice and loopholes would come out only when exposed to projects and other practices. Therefore, candidates who are willing to make a career in IT industry should have maximum exposure to practical knowledge so that they can perform efficiently. Most of the top IT colleges impart practical knowledge and offer internship programs which enlarge the chances of getting hired. Additionally, candidates from not so known colleges should do add-on certification courses offered by Microsoft, Oracle, Redhat, etc. so that they have higher chances of getting hired.

INFORMATION TECHNOLOGY SCOPE

Booming IT sector with plenty of jobs for computer science graduates

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Lucrative salaries – Rs.15000 – 25000 (starting sal) Rs.40000 after 2 years

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Overseas projects get numerous benefits and lucrative which may even go to six figures

Requisite

Love for computer world, Good Logical and Mathematical skills, +2 with mathematics, Science graduates and preferably B.E ,B.Tech or any other stream with diploma holder with strong and talented computer skills.

Motivation

Watch computer related Hollywood Movies, Documentaries, Story of Bill gates, Etc, get aware..

Following are must watch movies : (download from internet via. Torrent)

1. Hackers   2. Antitrust   3. The Net   4. Pirates of Silicon Valley   5. Firewall
6. Takedown   7. Reboot   8.   23   9. Sneakers   10. Cyberbully
11. Mr.Robot and the latest releases! … :-)

Computer Fields

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Software	**Hardware**	**Networking**
⇕	⇕	⇕
3 D Animation or Graphic Design	Electronics Technician or	Networking or
Customer Service	Engineers	system administrator
Data Entry	Hardware,	
Database	Security Expert	
Freelancer		
Programmer or Software developer		
Quality Assurance (QA)		
System Analyst or Tester		
Repair and Fix		
Sales Technical Support		
(Technician and Help Desk)		
Technical Writing		
Security Expert		
Webmaster or Web Designer		

Fields
3D Animation or Graphic design
Customer service
Data Entry
Database
Electronics technician or engineer
Engineer
Freelancer
Hardware
Networking or System Administrator
Programmer or Software developer
Quality Assurance (QA), System analyst or Tester
Repair and fix
Sales
Technical Support (Technician or Help Desk)
Technical Writing
Security expert
Webmaster or Web Designer

3D Animation or Graphic design

Description: A position where you design and create either a graphic or 3D animations for software

programs, games, movies, and web pages; usually in with a team of other designers. The position may

also require that you work on existing graphics, animations, and movies, created by other people.

Requirements: An individual applying for this job would need to be talented in design and creating visuals, for most people this is not something you could learn in training. Also, you must have a good understanding of the software programs being used to create the visual designs or 3D animations.

Recommendations: If you want to get into graphic design, you should learn a major graphics programs such as Adobe Photoshop, Adobe Illustrator, and other programs used to create your own pictures or edit photos. See the animation definition for additional information about this term as well as a listing of some of the more popular animation programs. If you are applying for any design or animation company, it is also a good idea to have a portfolio of your work.

Difficulty: (MEDIUM - HIGH) Many of the programs used to create a graphic, edit a photo, or create a 3D render are complex and often require prior experience gained through training or schooling.

[Customer service](#)

Description: Helping customers with general questions relating to the company, ordering, status on orders, account information or status, etc.

Requirements: Good communication skills and a general understanding of the company and its products.

Recommendations: Great starting position for anyone who is looking to get their foot in the door at the company and who are not yet that familiar with computers.

Difficulty: (LOW) Customer service jobs only require basic computer proficiency and the ability to navigate through the company's system, but solemnly require the employee to be skilled in more technical areas.

[Data Entry](#)

Description: A job that commonly requires the employee to take information from a hard copy or other source and enter it into an electronic format. Position may also be taking electronic data and entering it into a database for easy sorting and locating.

Requirements: Requires someone capable of typing 40-50 or more WPM, basic computer proficiency, and familiarity with word processors.

Recommendations: Practice your typing and take online typing tests to determine your overall speed.

Difficulty: (LOW) Most data entry jobs are beginner level jobs and don't require much or any prior experience or formal education.

[Database](#)

Description: A job that requires creating, testing, and maintaining one or more databases.

Requirements: Requires a familiarity with or extensive knowledge of databases at the place of employment. For example, Access, FoxPro, MySQL, SQL, and Sybase.

Recommendations: Become familiar with the database being used at the business. If the job is for the continued development of a database, you should also have a good understanding of its corresponding programming language. Often, this knowledge requires experience or formal education.

Difficulty: (MEDIUM - HIGH) Developing or maintaining a database can be a difficult and complex job. As mentioned above, you need to have past experience or formal education to be considered by most companies.

[Electronics technician or engineer](#)

Description: Assembling, testing, and repairing electronic equipment.

Requirements: A strong understanding of basic and advanced electronics.

Recommendations: Get a formal education in electronics and electro-mechanical, or self-teach yourself by building an electronic system or device.

Difficulty: (HIGH) Having a strong understanding of electronics often takes several years of formal education or on-the-job experience.

[Engineer](#)

Description: An engineer designs and implements mechanical and electronic equipment. A broad and difficult field, engineering almost always requires a college degree or at very least several certifications. Although used broadly in this document, the engineer is usually specified in the job requirement. For example, a software development engineer may be a highly skilled computer programmer.

Requirements: The requirements for this job change depending on the engineering field that interests you. However, as mentioned above, any engineering job requires a vast knowledge of the subject matter; usually from school, certifications, training, or years of experience.

Recommendations: Get training and education on the subject of interest from books, college, the Internet, and other sources. Often before you can qualify for many engineer positions you need experience; therefore, it's a good idea to get an entry-level job in the same field. For example, if you want

to be a software engineer, get a job in programming or create a program. If you want to become a network engineer, get a job that requires you to setup, maintain, or otherwise work with professional networks. You can start learning by setting up your home network.

Difficulty: (HIGH) At the median level, this is a job and position requires experience or a degree.

Freelancer

Description: Thanks to the Internet its possible for anyone to become a freelancer and apply for one of the millions of positions available around the Internet. See our how to make money on the Internet page for a listing of online services that list work available for freelancers.

Requirements: Computer and high-speed Internet connection.

Recommendations: There is a wide array of freelance jobs available online, so it is difficult to give any specific recommendation. However, keep in mind that if you have never worked from home that it is not as easy as you may think, there are more distractions, and it is easy to put work off until later. Set a strict work schedule and always make sure you work for what you feel your time is worth.

Difficulty: (LOW - HIGH) This all depends on the type of job you apply for since there are plenty of low difficulty freelance jobs such as customer service and high difficulty jobs like freelance programming.

Hardware

Description: A position as a hardware designer, circuit design, embedded systems, firmware, etc. is a job that requires you to design and create a complete hardware package or portions of a hardware device.

Requirements: Jobs that design or create hardware devices require that you have a good understanding of electronics, circuits, firmware, or design. For this position, you need to have several years of prior experience or a degree in the field.

Recommendations: If you are interested in this field we suggest you get a degree in the field.

Difficulty: (HIGH) Hardware design is a difficult position to learn and understand unless you get training or a degree.

Networking or System Administrator

Description: Computer networking jobs involve designing, setting up, and maintaining a network.

Requirements: Although most users today have a home networks, setting up, troubleshooting, and maintaining a corporate network can be a much more complicated task. Often, networking jobs also require a good understanding of how a network works, and in some cases how all the underlying protocols and structure of how networks work.

Recommendations: There are numerous network and network related certificationsavailable today, such as the CCNA, MCSE, etc. Often depending on the level of certification and the job you are applying for, the certifications will be more than enough to qualify you for most network jobs. Some of the higher networking positions, especially in the development of network hardware or programming side, may also require experience in networking or a degree.

Difficulty: (MEDIUM - HIGH) Depending upon the job specifications and the complexity of the network usually determines the difficulty of this job.

Programmer or Software developer

Description: A job that requires the development or continued development and maintenance of a software program.

Requirements: A basic to extensive understanding of a programming language. Because most job positions require the ability to help develop a program, they require several years of experience or a degree.

Recommendations: Learn one or more programming languages. Depending on what programs or scripts you want to create may change the language you want to learn. See the dictionary programming languages definition for a listing of popular programming languages and programs they create. If you need experience, creating software programs or working on an open source project is a great way to learn a language and demonstrate your abilities at a job interview.

Difficulty: (HIGH) Learning a programming language can be as difficult as learning a second language and takes lots of experience and practice to become a skilled programmer.

Quality Assurance (QA), System analyst or Tester

Description: This job requires that the employee test out all features of a product for any problems or usability issues.

Requirements: Requires that you have a good understanding of computer software, hardware, and the product being tested.

Recommendations: Become familiar with computers, software, hardware, and the products the company makes.

Difficulty: (LOW - MEDIUM) Depending on what is being tested and how much needs to be tested determines the difficulty of this job. However, for users familiar with the product or similar products, you should not have much difficulty locating and reporting issues.

Repair and fix

Description: A job that requires you to fix and repair computer and computer equipment. Often this involves removing a component from within the computer and replacing it with a good component.

Requirements: A good understanding of computer hardware, computer disassembly, proper tools, and good troubleshooting skills.

Recommendations: Build your own computer or disassemble and re-assemble a computer. Become familiar with computers, software, hardware, and the products the company makes.

Difficulty: (MEDIUM - HIGH) With this job it requires a good understanding of disassembling a computer, knowing what can be repaired, and how to fix or replace components.

Sales

Description: Selling a product or service to another person or company.

Requirements: Good communication skills and a general understanding of computers and the product that is being sold.

Recommendations: If you are selling computers, computer hardware, or computer software, become familiar with all aspects of the product. Sites like Computer Hope are a great resource to learn about computers. If you are selling a specialized product developed by the company, visit their web page and become as familiar with the product as possible.

Difficulty: (LOW) Sales for computer software, hardware, electronics, or related products is a good first job and can be a good way to learn more about computers.

[Technical Support (Technician or Help Desk)](#)

Description: Helping an end-user or company employee with their computers, software program, and hardware device. A technical support position is a great first step for people interested in working in the computer industry.

Requirements: A basic understanding of computers, computer's software, and hardware.

Recommendations: Become as familiar as possible with computers, computer software, and computer hardware. Although almost all technical support centers provide some form of training, most still require that you be familiar with computers.

Help desks for corporations do not usually have any training; these positions require that you have a good understanding of computers and troubleshooting computer problems.

- How can I become a computer technician?
- How do I learn more about computers?

Difficulty: (LOW - MEDIUM) The difficulty of this job depends on the training you get. However, someone who is familiar with computers or works with computers often has an easy time with these positions after a few days.

[Technical Writing](#)

Description: This position often involves creating or editing technical papers or manuals.

Requirements: This position often requires that the individual has a basic understanding about the subject being written about and have good writing skills.

Recommendations: Many of these positions require that you have a degree and often test a user before hiring them. It is also a good idea to be familiar with at lease one major word processor.

Difficulty: (LOW - MEDIUM) For someone who has good writing skills and familiarity with the subject, this job can be an easy job.

[Security expert](#)

Description: Test and find vulnerabilities in a system, hardware device, or software program.

Requirements: This position is for someone who has a strong familiarity with how software, hardware, and networks work and how to exploit them. Often, you need to have a good understanding of how the overall system works as well as good programming skills.

Recommendations: Keep up-to-date with all security news, advisories, and other related news. To get a good understanding of vulnerabilities and how to identify them, you'll need to understand how to program and how software interacts with computers.

Difficulty: (MEDIUM - HIGH) The difficulty of this job depends on what you are testing or how your are testing for vulnerabilities.

Webmaster or Web Designer

Description: Create, maintain, or completely designs a web page.

Requirements: For basic web designing positions you should have a good understanding of HTML, the Internet, and web servers. Have a good understanding of the technologies and code used to create a web page and the HTML editor or program used to create the page. More advanced positions may also require a familiarity of CGI,CSS, Flash, FTP, JavaScript, jQuery, Linux, Perl, PHP, Python, RSS, SSI, Unix, or XHTML.

Recommendations: One of the best learning experiences for people who are interested in this job is to create a web page or help maintain another website. Keep in mind that designing and posting a web page using WYSIWYG editor without some basic understanding of HTML may not be enough for most jobs.

Difficulty: (MEDIUM - HIGH) The complexity of this job is depends on the project. Creating and posting a simple website with no interaction is not that hard. However, creating an interactive site with forms, databases, and overall more interaction with the user and the server can increase the difficulty of the job significantly.

■ PREETAM SIR

GOOD LUCK !

Career Choices are Life Choices
Take them Seriously...
Do it Right!

IT JOBS with the HIGHEST PAY & FASTEST GROWTH