

Careers in Information Technology

The phenomenal growth that this industry is witnessing has led to it being recognised as one of the highly paid industry says **Shikha Malhotra**.

* What is Information Technology?

IT is short for Information Technology, a broad term covering all aspects of managing and processing information. IT professionals design, develop, support and manage computer software, hardware, and networks. Today Computers have not only assumed strategic importance in the corporate world, they are being effectively used in other fields ranging from Computer software used to write an online exam, computer generated animation in a blockbuster movie, ordering books over the Internet, banking, satellites and systems that enable NASA to explore Mars, are all developed by innovative IT professionals. In this era of Information Technology, which has revolutionised the whole world, INDIA has stood to the world standards and is being regarded the World over for it's skilled IT Professionals.

The domestic hardware industry has witnessed quantum growth in the turnover and profits, which is largely attributable to our liberalised economy and the presence of Multinationals like IBM, HP.

On the software front various software giants like IBM, Motorola, Oracle, Samsung, HP, Digital, Unisys, AT&T, ICL, Fujitsu etc. have opened software development centres in the country.

The phenomenal growth that this industry is witnessing has lead to it being recognised as one of the highly paid industry. The availability of skilled, qualified professionals is hardly able to meet the requirement, leaving a large gap to be filled by those with ambition, aptitude and willingness to work hard.

Careers in IT

With an ever expanding business needs, a wide variety of career opportunities are available in computing. This list is by no means exhaustive and is only meant to be representation of the types of jobs available, mainly being categorised under two heads -

1. **Software**
2. **Hardware**

HARDWARE

Computer Engineers

Computer engineers work with the hardware and software aspects of systems design and development. They often work as part of a team that designs new computing devices or computer-related equipment. Computer hardware engineers usually design, develop, test, and supervise the manufacture of computer hardware—such as chips or device controllers.

Network Specialist

The rapid spread of computer networks has resulted in the increase of requirement of specialists responsible for the security and administration of the networks they design and implement systems that keep networks functioning smoothly. Their Duties may be planning and installation of the hardware and software that comprise the network, addition - deletion of files to the network server, maintaining the peripherals connected to the network, troubleshooting problems

Certain Reputed Certification programmes as follows, gives one, further specialisation in this stream -

1. **Cisco Certified Network Associate** - CCNA certified professionals can install, configure, and operate LAN, WAN, and dial access services for small networks (100 nodes or fewer), including but not limited to use of these protocols.
2. **Cisco Certified Network Professional** indicates advanced knowledge of networks. With a CCNP, a network professional can handle all networks from 100 to more than 500 nodes. The content emphasises topics such as security, converged networks, quality of service (QoS), virtual private networks (VPN) and broadband technologies.
3. **Multi-layer Switched Networks engineer**
This programme explains how resilient campus networks can be designed, built and configured.
4. **Remote Access Networks engineer**
This explains how to build remote access networks to interconnect central sites to

branch offices and home office / telecommuters, it is intended for network administrators, support or design staff.

5. Internet work troubleshooters

It provides learners with hands-on experience in troubleshooting sub-optimal performance in a converged network.

SOFTWARE

Computer Programmers

Computer programmers write, test, and maintain the programs or software. They also conceive, design, and test logical structures for solving problems by computer.

Programmers are of two broad types:

Applications programmers

They usually focus on business, engineering, or science. They write software to handle a specific job they may also revise existing packaged software.

Systems Programmers

The Computer Systems software such as Operating System, Compilers etc are maintained and controlled by them.

Content Development

Content typically includes product descriptions, basic operations and field applications, installation and configuration, alignment procedures, maintenance and system performance information. Content developers write, edit, shape, and aggregate information. They are responsible for producing high quality, comprehensive product and system materials for documentation by interpreting technical data into written content that can easily be used by technical personnel and end users with varying degrees of knowledge.

Database Administrators

They are the keepers of database accuracy, efficiency, maintenance and development. The

DBA function requires Database Planning, requirements gathering and conceptual design, logical design and transaction design, physical design and implementation, testing and debugging. Database operations and maintenance, installation, conversion and migration, training and support are also their work activities.

They should be able to communicate well, verbally and in writing. Database administrators may advance to managerial and leadership positions.

Database Specialist

Database Specialists design, install, update, modify, maintain, and repair computer databases.

Duties may include:

- Providing technical support for existing databases
- Modifying existing databases
- Customising commercial databases for specific needs
- Planning and designing databases for new clients
- Solving problems to meet the needs of clients
- Programming databases for a wide variety of applications
- Overseeing the installation of new databases
- Training staff in client companies about the use of new or existing databases.

E-Commerce

E-Commerce deals with doing business over the Internet and World Wide Web. These professionals are responsible for exploring and developing the ever - growing sales channels and the expanding customer base. The primary activities may be identifying E-commerce fields, customers, marketing, providing online technical support and finally administration, resulting into improvement of online B2B transactions, improving the product sales on Internet.

IT and Education

To match the speed at which the IT industry is growing, we need more trained professionals every year. They could be a faculty at of the training institutes that impart training on

various subjects or working with universities. All you need to have is your degrees in place and a passion to teach.

Interface Designer

Human-computer interaction is a relatively upcoming field in computer science, which deals with ergonomic and interface details in computing. Interface designers design the user interface of a computer system, the communication system between the user and the computer, what you see on the computer screen while using a program and, how a user is led through a program or process.

Quality Assurance

QA , when applied to web sites, is the process of enforcing quality control standards and working to improve the processes that are used in producing the web site and its components, infrastructure and content. When well implemented, a web site should see progressive improvement in terms of both lessening rate of defects *and* general increase in site usability and performance.

Even the best designed and developed sites will experience problems and failures, so a good quality assurance team should set expectations -- for the entire web site team *and* with management -- for what QA can effectively accomplish.

Software Engineers

Software engineers or software developers working in applications development analyse users' needs and design, create, and modify general computer applications software or specialised utility programmes.

Those involved with the systems software may research, design, and test operating system software, compilers, network distribution software.

Systems Analyst

Also referred as a systems developer and systems architect. They enable computer technology to meet individual needs of an organisation. This may include planning and

developing new computer systems or devising ways to apply existing systems' resources to additional operations.

They also may prepare cost-benefit and return-on-investment analyses to help management decide whether implementing the proposed system will be financially feasible.

They coordinate tests and monitor the system to ensure it performs as planned. They prepare specifications, work diagrams, and structure charts for computer programmers to follow and then work with them to "debug," or eliminate errors from the system.

Technical Writer

They have a varied number of activities to perform, which may be to design, write and edit manuals, brochures and online help in the software industry

Web Design

Multimedia and Web developers build, design / write or edit on-line information, supporting websites including on-line help.

Interface Design and Usability Testing

Usability engineers and interface designers help software developers make and test programmes that are user-friendlier.

Proposal Writers

These help engineers and scientists write successful proposals.

Web Designer

They are responsible for creating, maintaining and supporting Internet sites for organisations. They are responsible for day-to-day site design and creation. They should be comfortable working closely with clients and developing web sites according to the client's requirements.

Shikha Malhotra, Assistant Professor at [MET Institute of Computer Science](#) has authored this article.