1. **CAREER PATH**

**IT Industry Today**

Information technology (IT) is a specific sector that is responsible for the building of computer systems and the management of computer networks. IT continues to change the way we live, play, and do business, so it should come as no surprise that IT is the fastest growing career field, and will continue to be for years to come. Information technology (IT) involves the study and application of computers and any type of [telecommunications](https://en.wikipedia.org/wiki/Telecommunication) that store, retrieve, study, transmit, manipulate data and send information.

**Careers for computer professionals (career opportunities)**

The most popular IT roles today : **developers, software engineers, hardware engineers, QA testers, systems analysts, database administrators, designers, IT security specialists, project managers.** The work of a **software engineer** typically includes designing and programming system-level software: operating systems, database systems, embedded systems and so on. **Hardware engineer** researches, designs, and develops computers or parts of computers and computerized elements of appliances, machines and vehicles. He is also involved in their manufacture, installation and testing.

To stay competitive in our careers, we must not only do our jobs well today, but be prepared for how we’ll be doing our jobs well in two, five, ten years from now. So, what skills and experience will be most important in the future?

* Emotional intelligence
* Adaptability
* Working with and managing remote teams
* Data science expertise
* critical thinking etc

We know, that communication is one of the major concerns at the workplace. So, what are the most effective communication strategies?

- Start using the right tools for your business (like ProofHub, Slack, Zoom)

- Encourage two-way communication. Encourage your employees to ask questions

- Specific and descriptive feedback. (understand what needs to be improved)

- Organise engaging team building activities

CPD

Continuing Professional Development (CPD) is a process of building, maintaining and enhancing your knowledge and skills. CPD helps you to plan your development, review what you have learnt and evaluate the effectiveness of your activity.

**A successful specialist today**

The IT profession is respected globally because of the impact IT has on society.IT is a particularly broad discipline, so the skills you need here will largely depend on the role you’re hiring for. Employers like to refer to “hard skills” and “soft skills” when defining the necessary skill set for a particular job. Hard skills are usually focused on specific tasks and processes such as the use of tools, equipment, or software. But you also need to function well within the broader context of your workplace. You should be creativity, adaptability, emotional intelligence and team-oriented to collaborate productively. And the people skills to communicate effectively. Those are **soft skills**.

1. **ICT**

Digital Revolution refers to the change in technology that has been going on in the last 40 years, from analog technology and mechanical technology to digital technology. It has been characterized by rapid developments in information technology.

Information technology has become an essential part of our life, and people are becoming dependent on it. Information is easy to access and affects many aspects of everyday life.

We use computers on a daily basis, at home, at university etc. Computers have changed the way we study, work and play. Computers assist people in education, entertainment, business, store valuable data for as long as needed and much more.

Computer is a device that input, stores, processing data & output information. The main mission is to transform data into information. 4 characteristics: fast, accurate, versatile, multitasking. Computer also has a series of stored instructions that allows to switch between tasks.

Stages of the digital revolution:

* Cloud computing(2000) store data on outsourse server, don’t use compesety harddisk or SSD, you can get your data using any devices
* Personal computing(1980e) personal nits, stand alone computer for personal
* Data processing (1950e) for corporations and government, it required qualificated stuff, everything stored on magnetic tape
* Ubiquitous computing works with the help of virtual reality
* Network computing (1980) share information for a long distance, opening to public use because between each others connected by cables

Computers have become faster, cheaper, more powerful, and smaller. Computers and other digital devices work with such things as texts, numbers, music, images, speech, and video. The amazing aspect of digital technology is that it distills all these different elements down to simple pulses of electricity and stores them as 0s and 1s(digits).Data representation refers to the form in which data is stored, processed and transmitted. Devices such as smARTPHONES, COMPUTERS ETC STORE DATA IN DIGITAL FORMATS THAT CAN BE HANDLED BY ELECTRONIC CIRCUITRY. Data becomes information when it is presented in a format that people can understand and use. Data is used by machines, such as computers, information is used by humans.

For today we use computers everywhere and for every task we need a special function or generally special computer. Because of this fact we have a lot of various computers. For instance, desktop PC, laptop, mainframe, tablet PC etc.

/\* Convergence – the fact that two or more things, ideas etc become simiar or come together.\*/

Typical PC includes CPU and peripherals. CPU (central processing unit = processing device= alu + cu) is a core of computer and it contains memory, microprocessor. Peripherals are devices which help us interact with computer. ALU – processing – using registers & CU – find access to RAM, control all parts of computer, fetch data, clear registers

ROM(on) contains BIOS(basic input output system) (startup routine). BIOS – selfcheking – find access to harddisk – find OS in harddisk – transfare OS from harddisk into RAM(on). Harddisk store data when the comp off, Ram – on. Cashe memory we can use virtual memory

Input devices are devices which let us enter information and interact with computer. I can name such input devices as keyboard, mouse, scanner, microphone etc. Output devices are the peripherals which let us see the result of processing data or convert it from a digital form. For example printers, displays.

The main component of any computer is a processing unit which includes microprocessor and memory - main processing devices. Microprocessor is a heart of every computer and it contains of 3 typical parts: the control unit, the arithmetic and logic unit, the registers.

Memory is a crucial component of any computer and because of this fact we need different types of data storages. Today typical storages for computer are HDD(hard disk drive ) and SSD(solid state drive), but SSD today is more popular because this type of storage is faster and smaller then HDD. (alsoThere are flash drivers and flash memory cards. Flash drivers are more popular today because of their portability and versatility. Nevertheless, flash memory cards are the only storage for photo cameras because they are thin.)

The issue of E-waste is really actual nowadays. Today every person has at least one gadget. And sooner or later this will be thrown away. Consequently we have a lot of waste of gadgets and this waste aren’t biodegradable. Therefore we must recycle our E-waste. But here there is a problem too. It is very difficult to recycle batteries from our gadgets. And this is the meaning of the E-waste issue.

Solutions (?)

* Designing better products
* Extended producer responsibility
* Better recycling