# Applications of Computer: A Review

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## ABSTRACT

Now a days, computers has revolutionized the way of our living style. Computers are being used in almost every walk of life. It does a vast variety of jobs with a great efficiency and accuracy. Computers have now become an important part of every profession. Therefore, this article set out a systematic review on the uses of computer in various fields. Moreover, this article has devoted to study in five bodies (Education, Medical, Business, Entertainment and Research).

**Keywords :** Computer, Applications of Computer, Education, Medical, Business, Entertainment and Research

## I. INTRODUCTION

Computer is a word which means "something which computes for performing calculations automatically" [1]. It is an electronic machine which is made of different components such as CPU(Central Processing Unit),Input device(keyboard, mouse) and output device(monitor, printer)[2].Various characteristics of a computer are as following:-
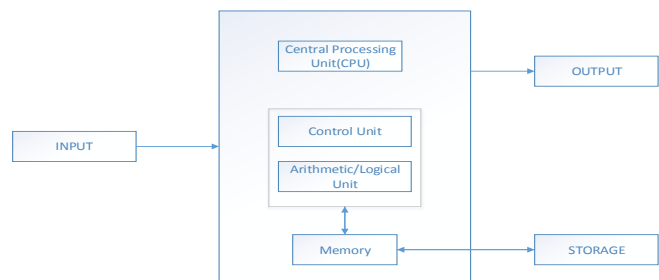
Speed:-Computers are very fast to perform complex calculations. They just take few seconds to calculate the results whereas human takes more than one day to do the same task.

Accuracy:-Computer's accuracy is very high. It always gives the correct results. Errors occur only due to human mistake such as inaccurate data, poorly designed system etc. rather than technological weakness.

Storage:-Computer has a vast storage and end number of data can be stored whereas human mind has limited storage, previous information can be forgotten sometimes. But it is not happening in case of computer.

Diligence:-Computers can perform n number of calculations continuously with the same speed and accuracy. But human can suffer from tiredness and lack of concentration.

Basic Organization of computer as shown in Fig.1 [2]:-



As shown in above Fig.1, there are four main components of computer 1) Input unit 2) Output unit and Storage unit

- **Input Unit:** - Input devices like keyboard, mouse, and joystick take input from the outside world.
- **Output Unit:-**output devices like printer, monitor, and speaker send the output to the outside world.
- **Storage Unit:-**Storage unit store the programs and data. There are mainly two storage classes 1)Primary Storage 2)Secondary Storage

- **Control Unit:-**This unit controls all the operations of computer. All arithmetic and logical operations performed by its unit i.e. ALU.

Computers are getting more popularity in almost every walk of life. They are being used in almost various sectors such as banking, medical, reservation, education etc. As literature indicates that most of the researchers have presented the survey on applications of computer in various fields. This article caters to enlighten the actual use of computers in various bodies and present a formal study on "how computers are useful in every profession"?
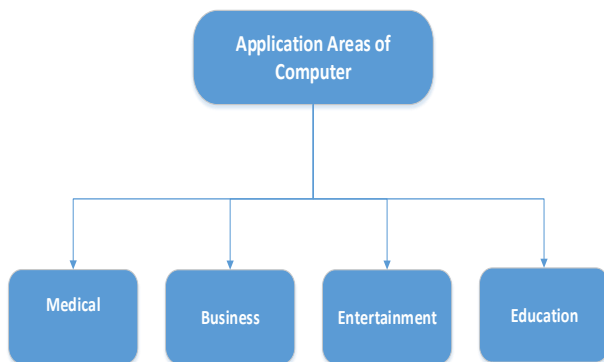


**Figure 2.** Uses of computer in various bodies

2.1 Application of computer in Medical:-

Medical field has drastically improved as the advent of computer. Computer, more specifically, Internet, provide a common meeting place where patient can take doctor's prescription without need to go doctor's place. Health informatics helps to determine the effectiveness of the particular treatment and harmful side-effects of a drug. Moreover, NHS (National Health Service) considers medical research as one of the main mission. Therefore, NHS continually improve its own IT infrastructure in order to improve information sharing and information base [3].NHS has proved very effective software in US and UK.

Moreover, Health Management Information System [HMIS] is a decision tool which has been used by various popular hospital of India like AIIMS. This tool particularly helps to gather, analyze and use the information for taking decisions. A more advanced Comprehensive Rural Health Services Project (CRHSP) software project which has also been used in India's rural areas. This project is successfully running at Ballabhgarh[4].Greta Nasi et.al.[5] describe the importance of mobile technology during the health care processes and prove with the reference as case of cancer supportive care.

There are various fields of medical in which computers have been used successfully [6].These fields are broadly characterize into five categories as shown in Fig.2.Detail description of these five categories have been given below:-

1.1.1 Life Support System

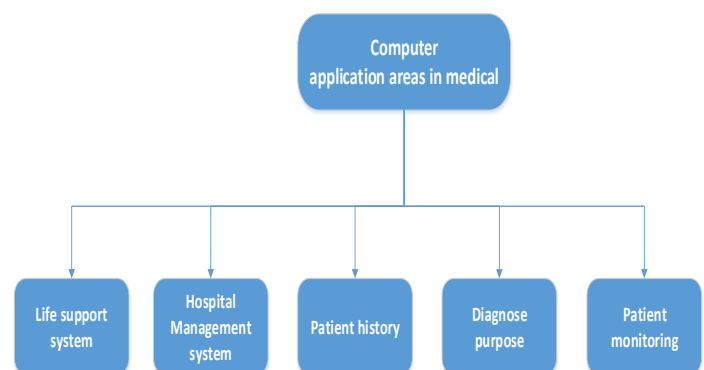There are various specialized devices like hearing aids which help the impaired patients.



**Figure 3.** Use of computer in medical field

1.1.2Hospital Management System(HMS)

HMS automate the day to day procedures and operations in hospitals such as appointments, payroll admittance and discharge records etc.

1.1.3Patient History

Computers help to store data about patients with disease, symptoms, and prescribed medicines.

1.1.4Diagnose Purpose

Various software like ECG, CT SCAN etc. have been used to investigate the symptoms.

1.1.5 Patient Monitoring

Various monitoring devices like a thermometer, BP machine are used to monitor the patients continuously. These machines are installed in medical wards.

## II. APPLICATIONS OF COMPUTER

Computers are widely used in every profession. Now a days, they have become the "only support" for every profession. People cannot imagine their profession's success without computer support. Therefore, applications of computers are being describes in detail below:-                                      1.3

### 1.2 Application of computer in Business

There is no doubt that technological revolutionized has improved the business industry. Information Technology (IT) has been used in various ways in business processes[7] as described below:-

1.2.1 *Information technology helps to solve complex problems*

Availability of advanced hardware with smart applications like X-Mind, Kanban boards, organizers like Google Calendar have made easier to analyze data and plan scalability.

1.2.2 *Information technology helps in decision making*
Good decisions can be taken through various ways like video conferences, review the *fig. 1* public sentiments on social media, online surveys to get customer's feedback.

1.2.3 *Information technology helps in marketing*
Various advertising methods (SEO, PPC, Facebook ads) helps in marketing. We can easily identify that how many people clicked on online banner. But it is difficult in offline marketing.

1.2.4 *Information technology has improved the resource management*
Cloud computing is a latest technology which allows to company's employees to access the data from anywhere to access their company level software.

2.2.5 *Information technology has improved the customer support*

There are various channels (telephone, emails, and social media platform) from where customer can receive support. Customer Relationship Management software helps to understand the customer behavior.

Julia Eatock et. al.[8] also suggest that information system can be incorporated into design of simulation models.IT allows information to be made more accessible anywhere.IT has changed the way of business processes.

### Application of computer in Entertainment

However, computers and Internet have been used in the field of entertainment. People can watch movies, live matches and watch videos on different stuff. The field of entertainment is characterized into different categories as shown below in Fig.4.
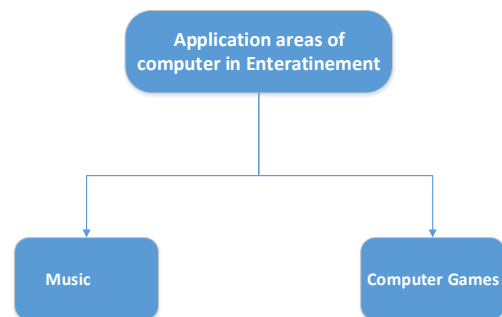


Fig.4 various bodies of entertainment

*Computer Game*
Today, the computer games market is booming and growing. However, computer games are very popular among young generation as well as adults for their entertainment. There are various devices like Sony Play Station2 etc. which are being used for playing games on computer. But, Now a days, computer games are not only limited to entertainment, they are playing a big role in learning through the games. Alice Mitchell et.al.[9] highlights many interesting game-oriented learning materials. The authors emphasize the "m-learning" project which aims to identify the potential of handheld technologies to provide learning experience relating to literacy and numeracy skill development and encourage the development and achievement of lifelong learning

objective. Now a days, very popular learning application "ByJu's" is getting popularity among the students in which students learn in the form of games.

### 1.3.2 Music

Computers have been using in the field of music since 1951.The first music was recorded on Mark1 computer. After 1951, involvement of computers in music industry has been increasing continuously. M. Brandao et.al.[10] categorizes the computer applications in music in various ways:-

- Fundamentals of music can be learn by computer
- Musical performance skills can be developed by computer
- Analysis of music can be performed by computer
- Use of computer in mixing, composition, recording and mastering.

There are various software that can be used in music such as MuseScore, Sibelius, Finale etc.

## 2.4 Applications of computer in Education

Computing technology has deeply impact on modern education system. The first computer was introduced in 1950 in to the field of education as students and teachers learning program[11].Software sophistication and instruction design is also improve the learning process. Y.Bo et.al[12] present a report on usage of computer in the field of education and also suggest that computer technology should be used to reform the teaching methods and curriculum program. According to Li.Yumei[13], computer can be used in education by three different ways such as "As a teacher", "As a learner", and "As an assistant" and also describe the each role in detail. Broadly, one can consider the following forms of education where computer has been effectively used as shown in Fig.5.
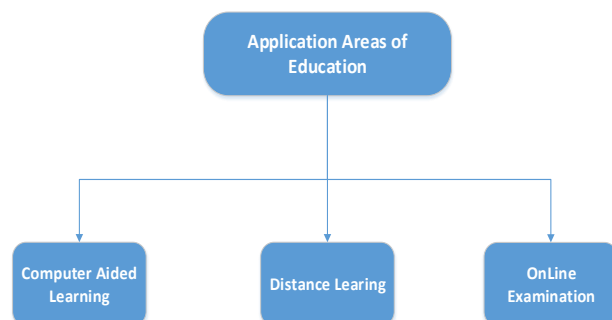


Fig. 5 Areas of Education

### 2.4.1 Computer Aided Learning

Today, computers have improved the quality of teaching and enhance the learning process with the help of various tools such as multimedia projector, PowerPoint presentations etc.

### 2.4.2 Distance Learning

Virtual classrooms play an important role in distance learning. Students can raise their doubts and teachers can provide the solutions without going to one's place. This way of learning save the time as well as resources.

### 2.4.3 On-Line Examination

Today, various exams like GRE, GMAT, SAT, CCNA, MCSE and many more have been conducting through computers in all over the world.

There are other more benefits of using computer in education are as following:-

- Computer can improve the student learning and basic skill area.
- Computers not only improve the learning process, it also increases retention of the students.
- Effective and adequate teacher learning is an integral element of successful learning program.

## 1.4 Application of computer in Research

Computers have been used significantly in the every phase of research such as Conceptual Phase, Design and planning phase, Data collection and analysis phase and Research publication phase. A. Singh [14] presents a detail description about usage of computers in research. Apart from general research, computers have proven its better results in scientific research. Computers have been used in scientific research to solve the complex mathematical equations. Scientists can write the programs (software) to answer the questions of the specific problems. Prediction modeling is also a very popular

field of research in which computers have been used immensely [15].

## III. CONCLUSIONS

Computers have been widely used in almost every profession. They impact on our life. They provide the fast, adequate results of vast variety of data. Now a days, they have become the backbone of every field. In this paper, we enlighten the various application areas of computer .This paper also cater the specific usage of computer in the field of medical, business, education, research and entertainment.

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