Human Computer Interface (HCI) was previously known as the man-machine studies or man-machine interaction. It deals with the design, execution and assessment of computer systems and related phenomenon that are for human use.

HCI can be used in all disciplines wherever there is a possibility of computer installation. Some of the areas where HCI can be implemented with distinctive importance are mentioned below –

- **Computer Science** – For application design and engineering.
- **Psychology** – For application of theories and analytical purpose.
- **Sociology** – For interaction between technology and organization.
- **Industrial Design** – For interactive products like mobile phones, microwave oven, etc.

The world’s leading organization in HCI is ACM — SIGCHI, which stands for Association for Computer Machinery – Special Interest Group on Computer–Human Interaction. SIGCHI defines Computer Science to be the core discipline of HCI. In India, it emerged as an interaction proposal, mostly based in the field of Design.

**Objective**

The intention of this subject is to learn the ways of designing user-friendly interfaces or interactions. Considering which, we will learn the following –

- Ways to design and assess interactive systems.
- Ways to reduce design time through cognitive system and task models.
- Procedures and **heuristics** for interactive system design.

**Historical Evolution**

From the initial computers performing batch processing to the user-centric design, there were several milestones which are mentioned below –

- **Early computer e.g. ENIAC, 1946** – Improvement in the H/W technology brought massive increase in computing power. People started thinking on innovative ideas.
- **Visual Display Unit 1950s** – SAGE semi – automaticgroundenvironment, an air defense system of the USA used the earliest version of VDU.
- **Development of the Sketchpad 1962** – Ivan Sutherland developed Sketchpad and proved that computer can be used for more than data processing.
- **Douglas Engelbart introduced the idea of programming toolkits 1963** – Smaller systems created larger systems and components.
- **Introduction of Word Processor, Mouse 1968** – Design of NLS oNLi neS ystem.
- **Introduction of personal computer Dynabook 1970s** – Developed smalltalk at Xerox PARC.
- **Windows and WIMP interfaces** – Simultaneous jobs at one desktop, switching between work and screens, sequential interaction.
- **The idea of metaphor** – Xerox star and alto were the first systems to use the concept of metaphors, which led to spontaneity of the interface.
- **Direct Manipulation introduced by Ben Shneiderman 1982** – First used in Apple Mac PC 1984 that reduced the chances for syntactic errors.
- **Vannevar Bush introduced Hypertext 1945** – To denote the non-linear structure of text.
- Multimodality *late* 1980s.
- **Computer Supported Cooperative Work 1990’s** – Computer mediated communication.
- **Ubiquitous Computing** – Currently the most active research area in HCI. Sensor based/context aware computing also known as pervasive computing.

**Roots of HCI in India**

Some ground-breaking *Creation* and *Graphic Communication* designers started showing interest in the field of HCI from the late 80s. Others crossed the threshold by designing program for CD ROM titles. Some of them entered the field by designing for the web and by providing computer trainings.

Even though India is running behind in offering an established course in HCI, there are designers in India who in addition to *creativity* and *artistic expression*, consider design to be a *problem-solving activity* and prefer to work in an area where the demand has not been met.

This urge for designing has often led them to get into innovative fields and get the knowledge through self-study. Later, when HCI prospects arrived in India, designers adopted techniques from usability assessment, user studies, software prototyping, etc.