



NAME: Muhammad Arbaz Ali Khan

REG NO: 04072113039

SEMESTER: 3rd

COURSE CODE: PY-101

SUBMITTED TO: Mam Noreeta Suleman

RELATION OF COMPUTER MEMORY SYSTEM WITH HUMAN MEMORY SYSTEM

- **COMPUTER MEMORY SYSTEM**

Memory is the part of the computer where programs and data are stored.

Computer memory system is divided into two parts:

- **Internal memory**

External memory Internal Memory Data/instruction stored inside this storage can be accessed easily by CPU.

It's a part of the main component of a computer system.

Types: register, cache memory and main memory

- **External Memory**

External Memory Data/instruction stored inside this storage cannot be accessible easily by CPU, and must go through an I/O Module or I/O unit not an integral part of the main component of a computer system

Examples: magnetic disks, optical disks, etc.

Now Here we are relating to Human Psychology

- **Cognitive psychology**

Cognitive psychology is defined as the study of individual-level mental processes such as information processing, attention, language use, memory, perception, problem-solving, decision-making, and thinking.

These decisions most likely involve several parallel psychological processes. An improved understanding of how these processes are involved in decision-making on corruption could improve the design of anti-corruption programs directed toward societies where corruption is the norm or towards individual power-holders.

- **Memory Processing Comparison:**

For Computer

- **Input:**

power or energy put into a machine or system for storage, conversion in kind, or conversion of characteristics usually with the intent of sizable recovery in the form of output

- **Processing:**

Data processing occurs when data is collected and translated into usable information. Usually performed by a data scientist or team of data scientists, it is important for data processing to be done correctly as not to negatively affect the end product, or data output.

- **Output:**

Some data produced or delivered by a machine or system (as for storage or for conversion in kind or in characteristics)

- **Storage:**

Storage is a process through which digital data is saved within a data storage device by means of computing technology. Storage is a mechanism that enables a computer to retain data, either temporarily or permanently.

For human

Cognitive Psychologists conceptualize memory in terms of four processes.

- **Encoding**

The early learning of information is called encoding. The information must be transformed into a form that can be kept in memory when it enters our memory system (via sensory input). Information is changed into memory by encoding.

Sometimes, after being presented to someone, you notice that you cannot recall their name a few seconds later, possibly because you were preoccupied and failed to initially encode the name

- **Storage**

Storage is the process of holding information in memory to be processed or used. Some memories we will hold for years, other memories we hold only long enough to use the information, such as looking up a phone number and retaining it long enough to place the call.

- **Retrieval**

Reactivating information that has been stored in memory is referred to as retrieval. Without the ability to access stored information, memory would be meaningless.

accessing or reviewing information that has been stored in memory

- **Maintenance Rehearsal**

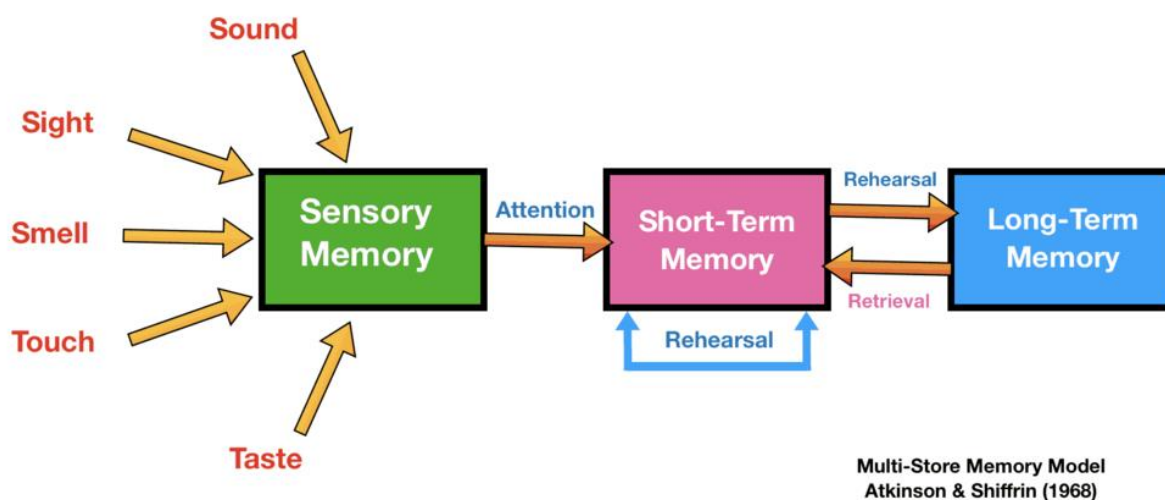
The act of mentally repeating the knowledge that has been stored with the intention of retaining it in memory is known as maintenance rehearsal.

We engage in maintenance rehearsal to recall what we want to remember (such as a person's name, email address, or phone number) for long enough to write it down, use it, or possibly transfer it to long-term memory.

DISCUSS MEMORY TYPES AND PROCESSES ALONG WITH THEIR FLOW CHART

- Atkinson and Shiffrin came up with the memory phases concept in 1968. The human memory has three stages, each with a different function, capacity, and time frame.
- Sensory Memory (SM)
- Short Term Memory (STM)
- Long Term Memory (LTM)

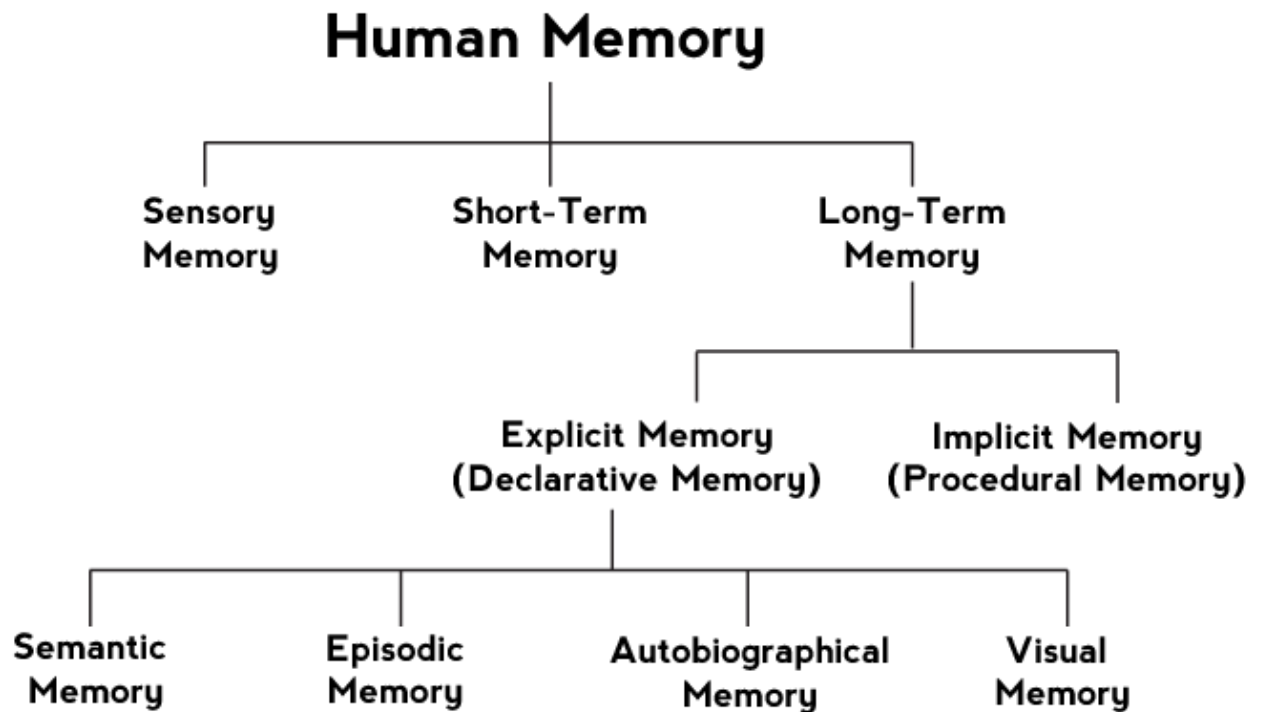
Memory Model



Types of Memory

There are three major types of memory and it has further divisions.

FLOWCHART OF HUMAN MEMORY



- **Sensory Memory**

Sensory memory is the term used to describe the temporary storing of sensory data. The memory is immediately lost after transmitting the data for further processing. Sensory memory serves this goal to allow the brain some time to comprehend the incoming experiences.

- **Iconic memory**

Iconic is sensory memory for visual information and visual experiences,

- **Echoic memory**

Echoic is the sensory memory for sound.

- **Short-Term Memory**

Most information stored in sensory memory is lost, but information focused on with the intention of being remembered may be stored in short-term memory.

Small amounts of information can be temporarily stored in short-term memory (STM) for longer than a few seconds, but typically for less than one minute.

Working memory refers to the processes we use to make sense of, modify, interpret, and store information in short-term memory (STM). Information in STM is not permanently stored; rather, it becomes available for us to process.

- **Long-Term Memory**

If information from the short term-memory enters long-term memory (LTM),

the memory storage can hold information for days, months, and years. The capacity of long-term memory is large, and there is no known limit to what we can remember (Wang, Liu, & Wang, 2003).

There are further divisions of Long Term Memory

- **Explicit/Declarative Memory**

Explicit/declarative memory refers to knowledge or experiences that can be consciously and easily remembered. There are two types of explicit memory:

- **Episodic Memory**

Refers to the experiences that we have had in life. Life episodes

For example, recollections of our high school graduation day or Semester days

- **Semantic Memory**

Refers to our knowledge of facts and concepts about the world. For example, capital of Pakistan is Islamabad, Independence Day

- **Implicit/Non declarative Memory**

Implicit/non declarative memory refers to knowledge that we cannot consciously or directly access. However, implicit memory has a direct effect on our behavior. One type of implicit memory is:

- **Procedural Memory**

Refers to our knowledge of how to do things. When we walk from one place to another, speak to another person, dial a cell phone, or play a video game, we are using procedural

memory. Procedural memory allows us to perform complex tasks, even though we may not be able to explain to others how we do them.

- **Autobiographical memory**

Our memories of our own past experiences are referred to as autobiographical memories. The episodic memories we have about ourselves are referred to as autobiographical memories.

For instance, we frequently forget details about our past that conflict with how we currently perceive ourselves.