What is research?
Research is a systematic process of inquiry, aimed at discovering new knowledge, understanding phenomena and solving problems.

Objectives of research
Generate new knowledge
Improve existing knowledge
Practical application: solving real world problem

Types of research
They are:

1. **Basic (or Fundamental) Research:**
   To increase general knowledge and understanding of fundamental principles. It is curiosity-driven and explores theoretical aspects without immediate practical application.

2. **Applied Research:**
   To solve specific, practical problems or address immediate needs. It aims to apply theoretical knowledge to real-world situations and often results in practical outcomes.

3. **Exploratory Research:**
   To explore an area where little is known, aiming to gain insights and understanding. It helps identify key variables and formulate hypotheses for further research.

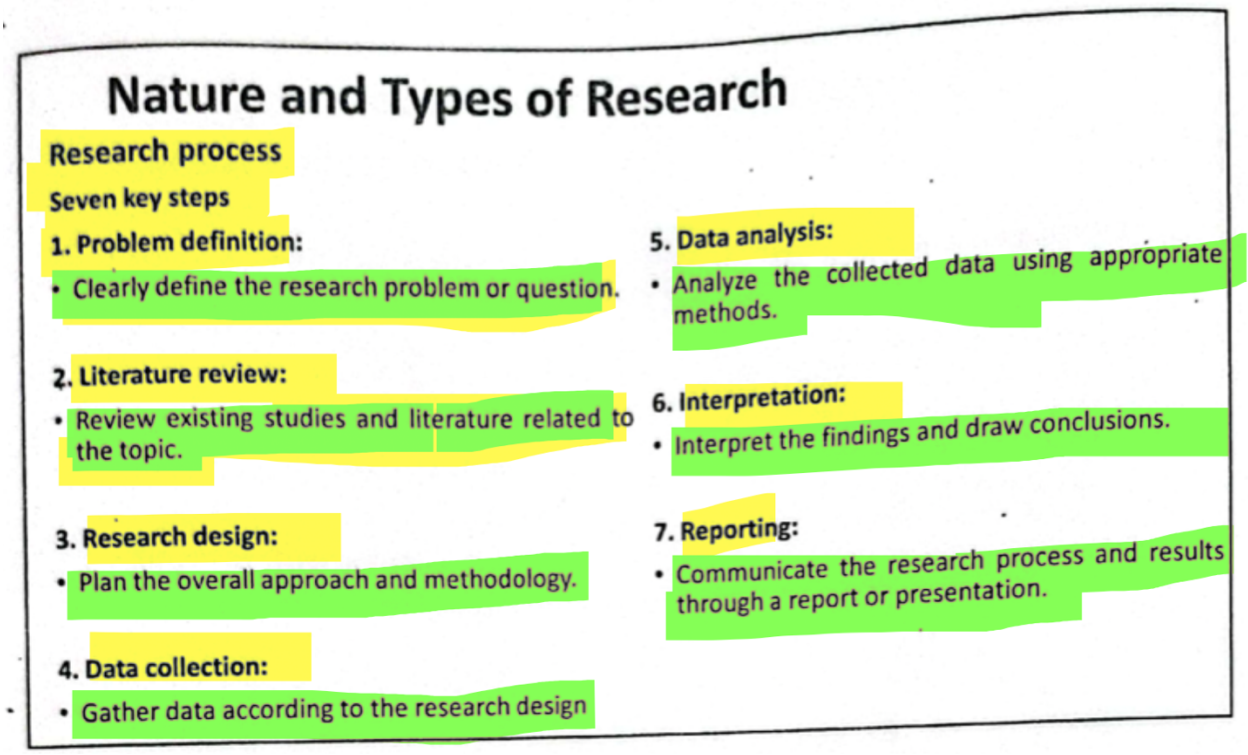
4. **Descriptive Research:**
   To provide a detailed account of a phenomenon, focusing on describing characteristics, behaviors, or conditions without manipulating variables.

5. **Explanatory Research:**
   To explain the reasons behind a phenomenon or the relationships between variables. It often involves testing hypotheses to understand causality.

6. **Predictive Research:**
   To forecast future events or trends based on current data and patterns. It often uses statistical models and analysis.

7. **Qualitative Research:**
   To gain an in-depth understanding of human behavior, experiences, and social phenomena through non-numerical data.

8. **Quantitative Research:**
   To quantify variables and analyze relationships using statistical methods and numerical data.



What is Scientific research?

Scientific research is a systematic, methodical process of investigating and acquiring knowledge about the natural world and its phenomena through observation, experimentation, and analysis

Scientific research and its process

What is scientific research?

- **Definition:**
- Scientific research is a systematic and empirical investigation into phenomena, conducted to expand knowledge and contribute to the understanding of natural or social world.

- **Systematic inquiry:**
- Follows a structured and organized approach to ensure precision and reliability.

- **Empirical observation:**
- Relies on direct observation and evidence obtained through the senses.

Scientific research and its process

Scientific research process

1. Problem identification:

- Clearly define the research problem or question to be addressed.

2. Literature review:

- Survey existing research to understand what is known and identify gaps in knowledge

3. Hypothesis formulation:

- Develop a clear and testable hypothesis based on the literature review.

4. Research design:

- Plan the methodology and procedures for data collection.

5. Data collection:

- Gather data according to the research design, using systematic methods.

6. Data analysis:

- Employ statistical or qualitative analysis to interpret the collected data.

7. Results interpretation:

- Interpret the findings in the context of the research question.

8. Discussion and conclusion:

- Draw conclusions based on the analysis and discuss the implications of the results.

9. Publication:

- Communicate the research process and outcomes through publication in journals or presentations.