MIT 7116 RESEARCH METHODOLOGY
Problem Identification

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Research Problem

- The Aspect of knowledge you are to investigate
  - What exactly is that you want to do?
  - Is there a gap really?

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  - Some clear open research questions

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- Thematic placement is key
  - Where is knowledge actually generated
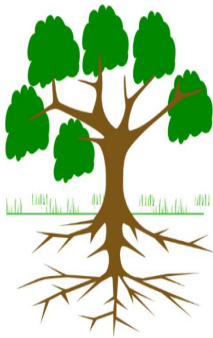 - The mix of knowledge and tools have to be clear

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    - Bottom up
    - Top down
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- Enough time has to be put on problem identification

  - Clarity
  - Scope
  - Existing theories
  - etc

-
- Its preparation and has to be taken carefully

Top - Down (Root Cause)
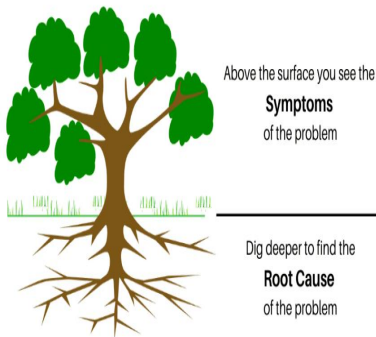

Above the surface you see the **Symptoms** of the problem
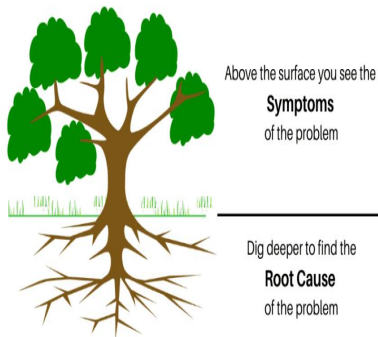
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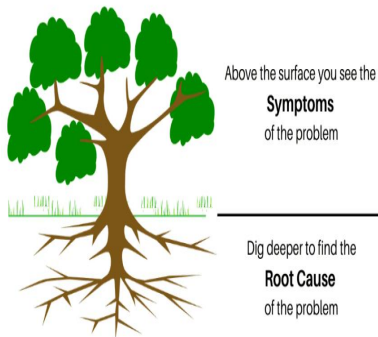**Root Cause**
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- ROOT
  - Root Causes
  - Granular
  - Researchable problems

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- Seek some issues
    - Recommendations for future research
    - Relaxing some assumptions
    - Dealing with another set of assumptions
    - Shift the scope
    - Adjust the focus of the investigation

Hybrid

- Normally concretises a top down identified root cause
- Identify
    - What other researchers are doing about the cause
    - Different interpretations of the problem - possibly relate to yours
    - Existing methods, tools, assumptions, etc Some things that are proved not to work
- Rarely do we hybridize on bottom up
    - Problem is clear (in case the researcher is not the problem)
    - Normally project works where the root causes were done
    - The risks must be clearly identified

Assignment 1

In groups of two/three

1. Idetify the broad area of research / degree track
2. Identify the theme of research
3. Chose a broad research topic
4. Using the rootcause approach,
   - Idetify three canoppy level features for the research topic identifed
   - Identify three trunk level problems that manifest into the canoppy features
   - Identify Four root level problems (trunk item may/may not have multiple roots)
   - For two root level problems, identify two sub roots

Submit during 27/06 lecture. Max 2 pages double printed (Font 12). Names/reg No appear as footers