Lab 1.1. Answer the below questions in a text file (md, docx, txt) named Lab1.1 :

**What criteria should be used in choosing an appropriate requirements engineering tool?**

Six major capabilities exist for requirements engineering tools:

* Requirements elicitation
* Requirements analysis
* Requirements specification
* Requirements verification and validation
* Requirements management
* Other capabilities

Verification and validation features are indeed an important component of any automated requirements engineering tool

**Are there any drawbacks to using certain tools in requirements engineering activities?**

These studies have generally found that the tool market is rapidly changing and that tools are becoming increasingly complex and difficult to use. The complexity of the expensive commercial tools then creates opportunities for inexpensive tools to emerge but don’t offer sophisticated features. Furthermore, these studies have indicated that validation functionalities such as consistency, correctness, and completeness are still lacking in most of the tools.

**When selecting an open-source tool, what characteristics should you look for?**

Turn first to open-source repositories to look for tools before purchasing or trying to develop them from scratch. There are also utilities or resources for requirements engineering. We look at two such open-source utilities that can be of use to the requirements engineer.

**How can tools enable distributed, global requirements engineering activities? What are the drawbacks in this regard?**

The tools will take turns supporting each other with sources of methods. Depending on the application, different tools can be used but cannot be used at the same time to optimize

**If an environment does not currently engage in solid requirements engineering practices, should tools be introduced?**

No because following disciplined practices can result in better results from tool usage and a framework from which processes can be improved. Every project plan should include a description of the tools to be used and how they will be used.

**What sort of problems might you find through a traceability matrix that you might not see without one?**

Traceability is to visualize the relationship between artifacts. As the number and complexity of trace links increases, techniques for traceability visualization are necessary. Common visualizations for traceability information are matrices, graphs, lists, and hyperlinks.

**How is AI being proposed for knowledge acquisition and representation in requirements specifications?**

Reduce human intervention in the requirement gathering processes by using “Speech Understanding Methodology” techniques with the capability to “listen in” on a conversation and suitably collect stakeholders’ declarations into a distinct vision. Speech understanding methodology can be combined then with “Automatic Keywords Mapping,” another AI technique being investigated that can enhance the requirements elicitations

Case-based reasoning is also being investigated for requirement elicitation, which can reduce the problem of natural language understanding as well as save the time of the requirement expert. There has also been recent research on the use of machine learning algorithms to identify user preferences based on their sentiment

**Source: Requirements Engineering for Software and Systems (Philip A. Laplante) - 2022 edition.**