Instructions on an illustration Example and Report Preparation

I need a text that I can edit and pose my questions directly within your text.
Therefore, I ask you to prepare all future texts in:

1. **Tex** (LaTex, MikTex, etc.), compatible editors (preferably) or **Word** (in the worst case).

2. In case of your English uncertainty you are welcome to add comments in Russian (or your native language).

3. Do not mix up fragments of your problem formulation, solution steps and codes.
A detailed informal interpretation of all solution steps in your small example in terms of the original data are welcome.
The size of your input matrix is not more than 10 x10.

4. Printouts of the source data and the results of the solution steps for your problem under consideration MUST BE INCLUDED.

5. A detailed informal description of the problem statement in terms of your small example should be provided including a formal formulation.

6. Your ideas for solving the provided example at least by a complete enumeration with all computational steps leading to an optimal (high quality) solution is a necessary fragment of your repot.
6.1. After solving an instance add a detailed commentary on the found solution w.r.t. its feasibility (feasible or infeasible).
6.2. If it is infeasible, then details why and where its fragments are feasible (if any) and infeasible.
6.3. Separately describe the infeasible fragments of your solution and, if any, the feasible fragments.
6.4. In the case of obtaining a feasible solution, describe in detail which fragments will always be feasible and which infeasible and why.

7. Explain in detail how to analyze the (non)uniqueness of the found solution(s) and why?

8. Find all optimal solutions. Explain why we are looking for all optimal solutions and how the set of all (almost all) solutions might be analyzed from the prospective of additional constraints?

9. Completely solve a small example using the Branch-and-Bound (or any other enumeration type) Algorithm.

10. Indicate bounds (lower and/or upper), heuristics (if any), pruning (discarding) and branching rules including their informal and formal justifications.

11. Draw the graph of your complete search tree and comments in detail on each vertex of the search tree and each arc leading from the root to each leaf.
12. Describe in detail the role of each arc in the search tree and the current values of associated solutions recorded inside each vertex.

13. In the figure of the search tree, **indicate reasons** why the branching is terminated. For example:
13.1. Artificially created infeasibility of the obtained solution,
13.2. Natural infeasibility of the obtained solution,
13.3. a feasible solution is received,
13.4. a lower bound is at least the value of current best feasible solution (called record).

14. **Provide statistics for your search tree (later on, you will add** the CPU times**)**
14.1. Number of generated subproblems.
14.2. Number of Solved subproblems.
14.3. The number of subproblems discarded by their infeasibility.
14.4. The number of subproblems discarded by feasibility of found solution (terminated branches due to the found feasible solution).
14.5. The number of subproblems discarded by completely computed lower bound.
13.6. The number of subproblems discarded by NOT completely computed lower bound (interrupted solution of the current AP).
14.7. The number of subproblems discarded by the VIRTUAL lower bound (ONLY for data correcting algorithms).
14.8. The number of subproblems discarded by the VIRTUAL upper bound (ONLY for correcting algorithms).