1. Project vs Routine Jobs: Projects are not routine jobs. They involve innovative tasks and are not repetitions. They require training and testing. They have a goal, but attainment is not always certain.
2. Software Projects: Software projects are different from other projects. They involve changing requirements and customer involvement. The nature of the product is intangible.
3. Project Characteristics: Projects need to have a plan, different activities, and processes. They aim at a specific goal with a specific objective. They are constrained by time and resources.
4. Software Product Characteristics: Software products are complex, conforming, flexible, and intangible. They cannot be touched.
5. Project Life: A project consumes resources such as human resources, technological resources, and budget. It can be initiated to build a role or a software product.
6. Project Management: Managing a project requires different kinds of metrics, tools, and discipline.
7. Project Management Skills: Project management requires specialized skills. It involves measuring success and developing skills. Success can be measured by meeting the deadline and the end goal.
8. Project Phases: A project can be broken down into phases which include initiation, planning, monitoring, control, and closure.
9. Software Processes: Each kind of project should have software processes. In software development, these processes include requirement elicitation, validation, specification, system architecture, interface design, and testing.
10. Project Initiation: Project initiation involves identifying the problem and understanding the customer. In software projects, this could involve sending an analyst to deal with the customer.
11. Software Development Life Cycle (SDLC): The SDLC includes requirement gathering, software design, and coding. These are project processes but are not part of the product.
12. Software Project Management: Software project management is the management of any software project. Specialized skills are needed to manage these projects.
13. Software Testing: Software testing is a crucial part of software development. It helps ensure the software is working as expected and meets customer satisfaction.
14. Software Uniqueness: Software is unique, intangible, flexible, and complex. Its success depends on customer satisfaction.

15. Project Phases: The phases of a project include initiation, planning, monitoring, and control.
16. Software Processes in Project Phases: Each project phase can have software-related processes. For example, in project initiation, there could be processes related to software initiation.
17. Software Development Activities: Software development involves various activities such as requirements management, design management, software building, testing, and deployment.
18. Project Initiation: Project initiation involves producing a project charter, defining the project scope and objectives, and making initial effort and cost estimates.
19. Software Initiation: Software initiation involves conducting market analysis, estimating product development cost, defining product features, and determining marketing channels and product delivery methods.
20. Product Development: If a product is similar to an existing one, the goal could be to reverse engineer an already available software. Market analysis is crucial to validate the problem and understand the need for the product.
21. Software Product Implementation: The initial tasks in software product implementation include identifying the effort for each activity, having an initial schedule estimate, and creating a project charter.
22. Project Management: Project management involves initiation, planning, monitoring, controlling, and closure. These processes run in parallel with the software development life cycle.
23. Role of a Project Manager: A project manager doesn't necessarily need to be a senior software engineer. They need to have a good understanding of the product and the field. They should be ready to manage the team and ensure the smooth evolution of the work.
24. Scrum Master: A scrum master ensures that the rules or manifesto of Scrum are respected. They are responsible for coaching the team and facilitating meetings.
25. Software Project Processes: A software project will have processes like software lifecycle processes, project processes, and software configuration. These processes can run in parallel to the project.
26. Project Control: Project control involves overseeing all development. The manager needs to control the development team, possibly through a team leader.
27. Project Evaluation: Project evaluation involves using relevant, meaningful, and practical metrics. These metrics need to be related to the activity level, suitable for different activities, and calibrated on different scales.
28. Project Charter: The project charter is made by top management. It defines the purpose of the project and why it is being started. It includes the project scope and objectives.

29. Project Scope: The project scope defines the boundaries of the project. For a software project, it includes the functionalities needed in the software product to be developed and the level of quality needed in the software product.
30. Software Project: A software project is similar to any other project. It involves solving a problem, which could involve developing software or creating a certain entity.
31. Role of a Project Manager: A project manager doesn't necessarily need to be a software engineer. They need to understand the process and manage the organization.
32. Volatility: In the context of software development, volatility refers to the degree of change that a software system is expected to undergo over time. This could be due to changes in requirements, technology advancements, or changes in the business environment.
33. Project Charter: The project charter is a document that outlines the purpose, scope, and objectives of the project. It also includes an initial budget estimate.
34. Project Budget: The project budget includes the salaries of the personnel involved, the cost of tools and licenses, and other expenses such as travel and presentations.
35. Project Conflict: Conflicts can arise in a project due to different parties having different interests. These conflicts need to be managed effectively for the successful completion of the project.
36. Project Costs: The costs of a project are directly related to the project cycle and the effort needed. The effort estimate determines the limit of the project costs.
37. Cost Measurement: The cost of a software project is measured by considering the cost of tools, resources, and human resources involved in the development. The effort needed for the project plays a crucial role in determining the cost.
38. Cost Estimation: Cost estimation for a project is done based on a certain metric, such as person-months. The estimate considers the number of people needed and the time required to complete the project.
39. Effort Estimation: Effort estimation is crucial for determining the cost of a project. It is based on the number of lines of code or the functionalities that need to be developed.
40. Project Schedule: An initial project schedule is prepared based on the experience of everyone involved. The entire project effort is broken down into smaller tasks, and a time estimate is given for each task.
41. Work Breakdown Structure: A work breakdown structure is produced to identify the different tasks in a project. This helps in planning and scheduling the project.

42. Project Bidding: After preparing the project charter and scope, and making an effort and cost estimate, bids are invited from software development companies or project planning organizations based on the cost.
43. Project Initiation: Project initiation is the first step where the charter, scope, objective, and initial budget are defined. The budget includes salaries, cost of tools, licenses, and other expenses.
44. Project Development: The project manager doesn't necessarily need to develop the project. They identify the project's objectives, scope, and charter, and then launch bids for development companies.
45. Software Project Features: In the context of a software project, the different features of the software product are identified during the requirement analysis phase.
46. Effort and Cost Estimation: The effort is estimated in person-months and the cost estimate includes salaries and a certain percentage for different overhead expenses.
47. Project Plan: The project plan includes the schedule, cost, resource plan, quality plan, and risk response plan. These plans are made at the beginning of the project.
48. Different Perspectives: Different perspectives are involved in a project, including the view of the customer, the assistant, and the service provider.
49. Project Bidding: After the preliminary requirements are done and the different functionalities are studied, bids are invited from software development companies. The bids are analyzed and a service provider is selected.
50. Project Execution: Once all the planning is done, the project execution begins. This involves scheduling, making a project team, and adjusting the software.
51. Project Objectives: Project objectives should be SMART - Specific, Measurable, Achievable, Relevant, and Time-bound. They should focus on the outcome rather than the activities.
52. Objective Allocation: Objectives can be allocated to different individuals or teams. Each objective can help fulfill the overall goal of the project.
53. Project Initiation Phase: The project initiation phase involves defining the charter, scope, and objectives. An initial budget is also estimated for the project.
54. Project Charter: The project charter outlines the purpose of the project. For example, a Software as a Service (SaaS) vendor might want to become a leader in their arena, and their customers might be eagerly waiting for their solutions.