

**Software Tools**

Donation Management Software

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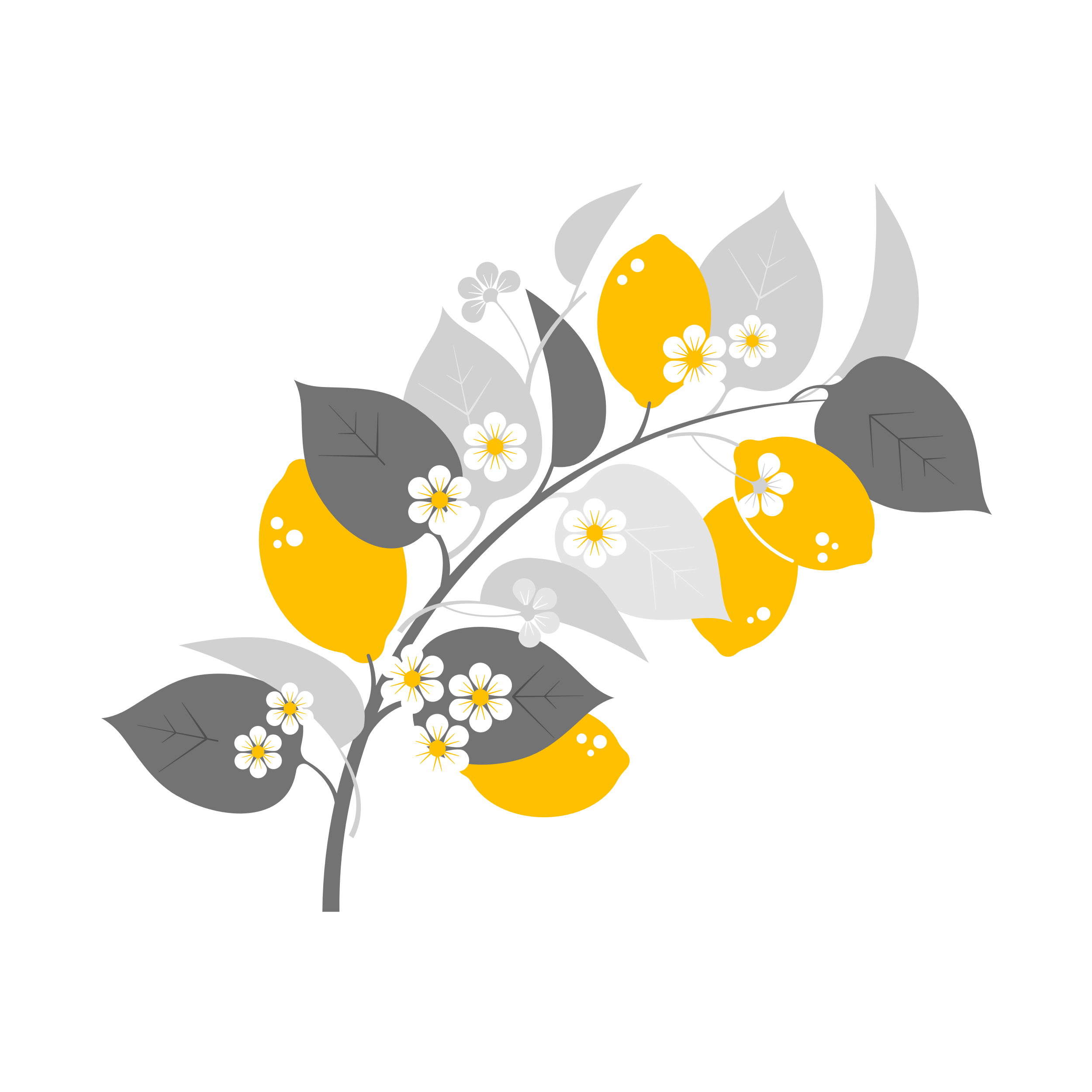
COMP 220-B: Software Engineering

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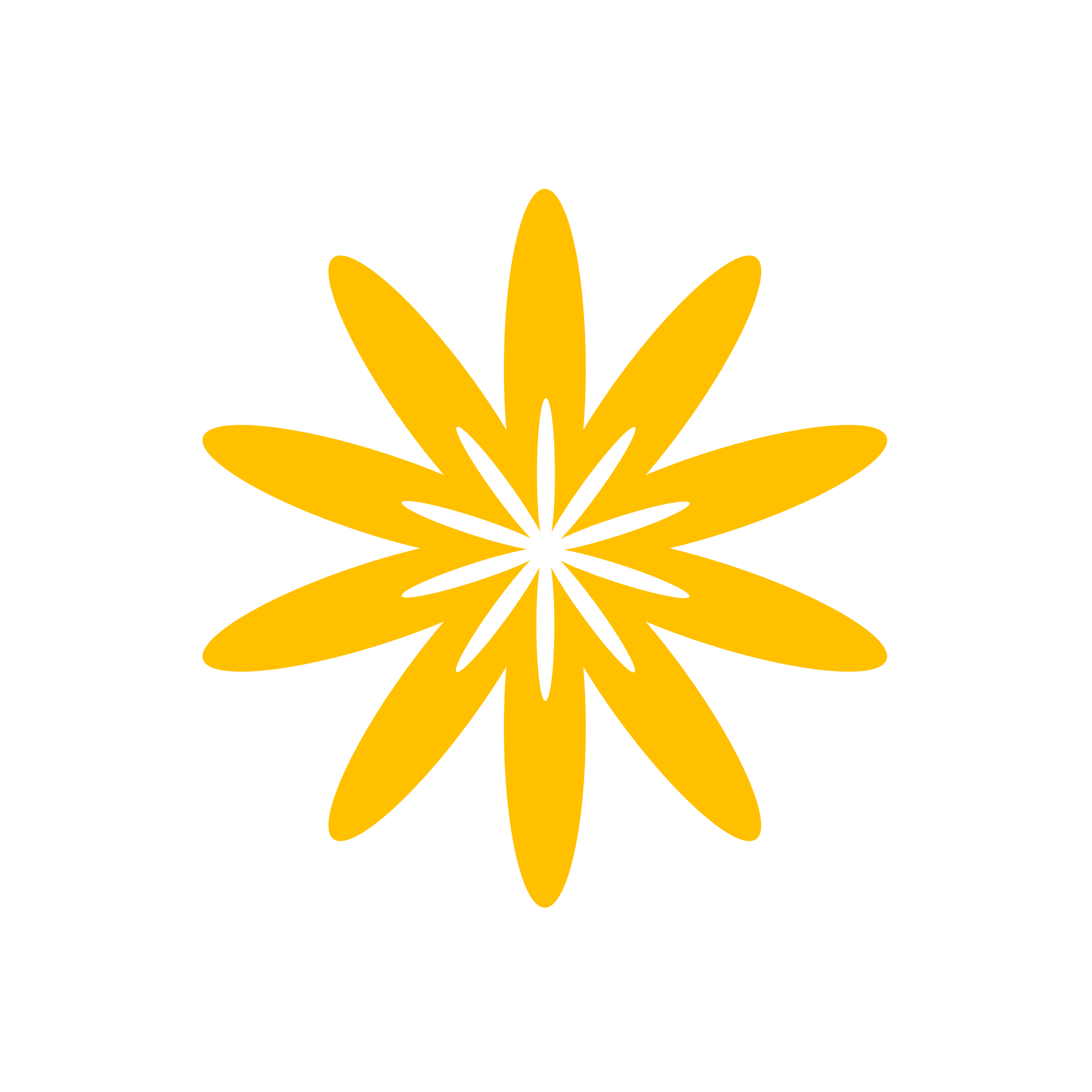
Assignment Due Date: 04/06/2023

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**Software Tools**

**Donation Management Software**

1. Requirement Engineering:
2. IBM Rational DOORS: IBM Rational DOORS is a widely used requirements management tool that helps teams capture, analyze, and manage requirements throughout the development lifecycle. It provides features for requirements elicitation, documentation, traceability, and collaboration.
3. Jama Connect: Jama Connect is a collaborative requirements management solution that enables teams to define, review, and manage requirements. It offers features such as requirement capture, version control, impact analysis, and real-time collaboration.
4. Sparx Systems Enterprise Architect: Sparx Systems Enterprise Architect is a comprehensive modeling and design tool that supports requirement engineering. It provides capabilities for capturing requirements, creating use case diagrams, generating documentation, and managing traceability between requirements and other system artifacts.
5. Planning:
6. ****Microsoft Project: Microsoft Project is a popular project management software that helps in planning, scheduling, and tracking projects. It offers features such as Gantt charts, resource management, task dependencies, and reporting.
7. JIRA Software: JIRA Software is a widely used agile project management tool that facilitates planning and tracking of tasks, user stories, and sprints. It provides features for backlog management, sprint planning, issue tracking, and team collaboration.
8. Trello: Trello is a visual collaboration tool that enables teams to plan and organize projects using boards, lists, and cards. It allows users to create task cards, assign them to team members, set due dates, and track progress in a flexible and intuitive manner.
9. Modelling- Analysis and design of the software:
10. Visual Paradigm: Visual Paradigm is a comprehensive modeling and design tool that supports various modeling languages and notations, such as UML (Unified Modeling Language), BPMN (Business Process Model and Notation), and ERD (Entity-Relationship Diagram). It offers features for creating diagrams, generating code, performing analysis, and collaborating with team members.
11. Astah: Astah is a versatile modeling tool that supports UML, SysML, flowcharts, ER diagrams, and other diagramming notations. It provides a user-friendly interface and a range of features for capturing requirements, designing system architectures, and generating code. Astah also supports collaboration, allowing multiple team members to work on the same project concurrently.
12. Lucidchart: Lucidchart is a web-based diagramming tool that allows users to create various types of diagrams, including flowcharts, UML diagrams, ER diagrams, and more. It provides an intuitive interface, collaboration features, and integrations with other software tools, making it suitable for modeling and design activities.

**Comparison Table:**

1. Requirement Engineering:

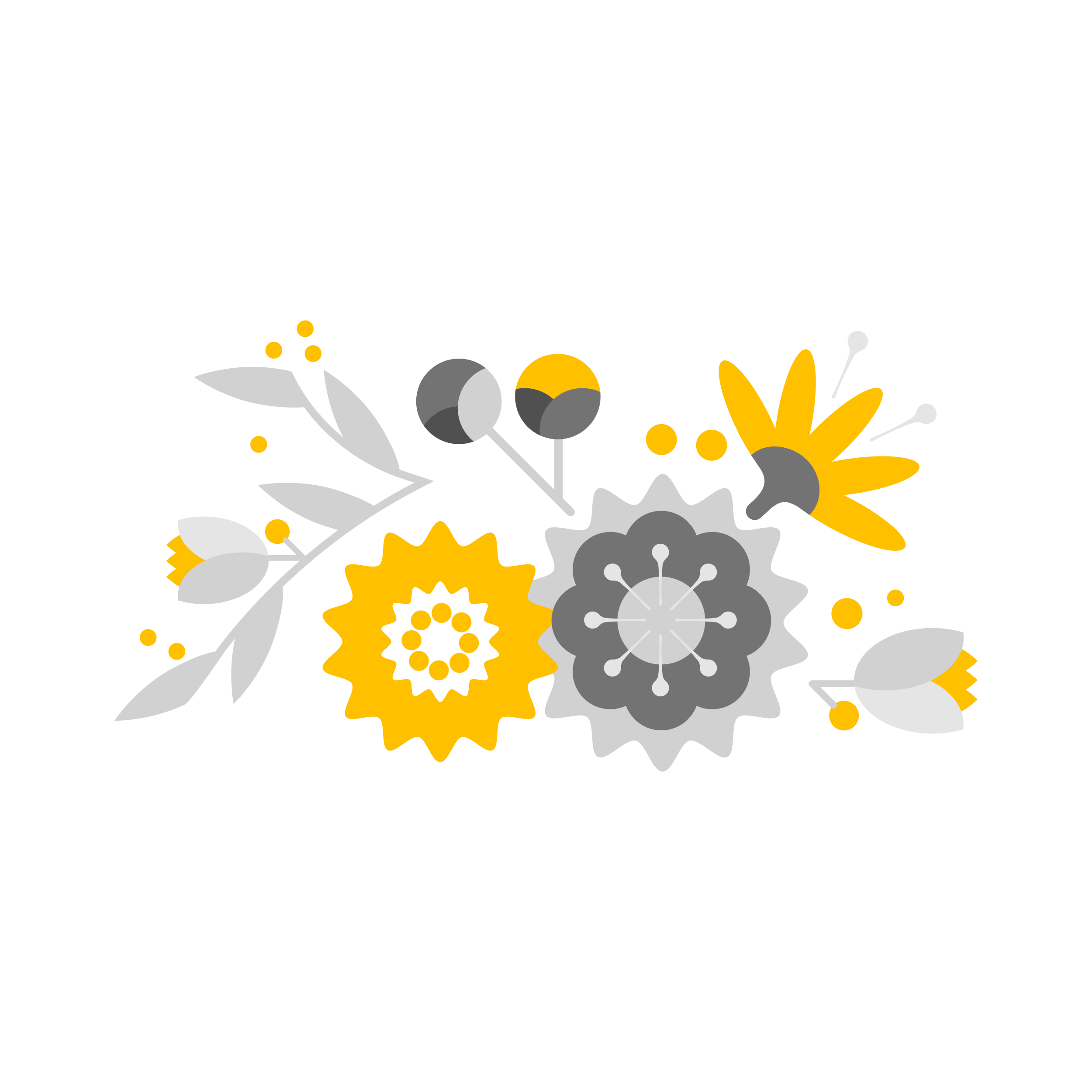
| **Features** | **IBM Rational DOORS** | **Jama Connect** | **Sparx Systems Enterprise Architect** |
| --- | --- | --- | --- |
| Requirements Capture and Management | ✓ | ✓ | ✓ |
| Traceability | ✓ | ✓ | ✓ |
| Collaboration and Communication | ✓ | ✓ | ✓ |
| Version Control | ✓ | ✓ | ✓ |
| Pros | - Highly customizable | - User-friendly interface | - Supports multiple modeling languages |
|  | - Robust traceability features | - Real-time collaboration capabilities | - Rich set of modeling and design tools |
|  | - Integration with other IBM tools | - Advanced reporting and analytics | - Code generation and reverse engineering |
| Cons | - Steep learning curve | - Limited customization options | - Complex user interface |
|  | - Requires a dedicated server for optimal performance | - Limited support for non-technical stakeholders | - Steeper learning curve compared to other tools |

1. Planning:

| **Features** | **Microsoft Project** | **JIRA Software** | **Trello** |
| --- | --- | --- | --- |
| Task Scheduling and Tracking | ✓ | ✓ | ✓ |
| Resource Management | ✓ | ✓ | - |
| Gantt Charts | ✓ | ✓ | - |
| Agile Project Management | - | ✓ | ✓ |
| Pros | - Robust scheduling and resource management | - Agile-focused features and workflows | - Easy to use and intuitive |
|  | - Extensive reporting and visualization options | - Advanced issue tracking and workflow management | - Flexible and adaptable |
|  | - Integration with other Microsoft tools | - Customizable dashboards and project configurations | - Lightweight and accessible |
| Cons | - Expensive licensing and maintenance costs | - Steep learning curve | - Limited advanced features |
|  | - Complex interface | - Limited scalability for larger projects | - Lack of advanced project features |

Modeling/Analysis/Design:

| **Features** | **Sparx Systems Enterprise Architect** | **Visual Paradigm** | **Astah** |
| --- | --- | --- | --- |
| UML Modeling | ✓ | ✓ | ✓ |
| SysML Modeling | ✓ | - | - |
| BPMN Modeling | - | ✓ | - |
| Code Generation | ✓ | ✓ | - |
| Pros | - Wide range of modeling languages supported | - Intuitive and user-friendly interface | - Lightweight and easy to use |
|  | - Advanced analysis and design capabilities | - Extensive diagramming options and templates | - Collaboration capabilities |
|  | - Robust documentation and reporting features | - Code generation and reverse engineering | - Supports multiple platforms |
| Cons | - Complex user interface | - Limited support for certain modeling notations | - Limited advanced modeling features |
|  | - Steep learning curve | - Higher learning curve compared to other tools | - Limited support and updates |

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