Case Study 1:

Company: XYZ Inc., an e-commerce company

Issue: A customer, John, reports that his order is missing a product.

Issue Tracking Process:

1. John submits a support ticket through the company's website, describing the issue.

2. The issue tracking app assigns a unique ticket number (e.g., #1234) and notifies the support team.

3. The support team reviews the ticket and assigns it to a support agent, Jane.

4. Jane investigates the issue, checks the order details, and finds that the product was indeed missing from the shipment.

5. Jane updates the ticket with her findings and proposes a solution (e.g., resend the missing product).

6. John receives an email notification with the update and responds with his approval.

7. Jane implements the solution and closes the ticket.

8. The issue tracking app records the resolution and provides analytics on the issue type, resolution time, and customer satisfaction.

Case Study 2:

Company: ABC Corp., a software company

Issue: A customer, Sarah, reports a bug in the company's software.

Issue Tracking Process:

1. Sarah submits a bug report through the company's website, describing the issue and steps to reproduce it.

2. The issue tracking app assigns a unique ticket number (e.g., #5678) and notifies the development team.

3. The development team reviews the ticket and assigns it to a developer, Bob.

4. Bob investigates the issue, reproduces the bug, and identifies the root cause.

5. Bob updates the ticket with his findings and proposes a fix (e.g., a software patch).

6. The QA team tests the fix, and Bob deploys it to production.

7. Sarah receives an email notification with the update and confirms that the issue is resolved.

8. The issue tracking app records the resolution and provides analytics on the issue type, resolution time, and customer satisfaction.

Entities:

1. Tickets:

- Ticket ID (unique identifier, e.g., #1234 or #5678)

- Customer ID (foreign key referencing the Customers entity)

- Issue description

- Status (open, assigned, in progress, resolved, closed)

- Priority (low, medium, high)

- Created at

- Updated at

2. Customers:

- Customer ID (unique identifier)

- Name

- Email

- Phone number

3. Support Agents:

- Agent ID (unique identifier)

- Name

- Email

- Phone number

4. Developers (for Case Study 2):

- Developer ID (unique identifier)

- Name

- Email

- Phone number

5. Orders (for Case Study 1):

- Order ID (unique identifier)

- Customer ID (foreign key referencing the Customers entity)

- Order details (products, shipment information)

6. Software Bugs (for Case Study 2):

- Bug ID (unique identifier)

- Ticket ID (foreign key referencing the Tickets entity)

- Bug description

- Steps to reproduce

- Root cause

- Fix (software patch or solution)

Relationships:

1. A customer can have multiple tickets (one-to-many).

2. A ticket is assigned to one support agent (one-to-one).

3. A support agent can be assigned to multiple tickets (one-to-many).

4. A developer can be assigned to multiple bugs (one-to-many).

5. An order can have multiple products (one-to-many).

6. A software bug is related to one ticket (one-to-one).

Additional tables:

1. Ticket Updates:

- Ticket ID (foreign key referencing the Tickets entity)

- Update description

- Updated at

2. Ticket Analytics:

- Ticket ID (foreign key referencing the Tickets entity)

- Resolution time

- Customer satisfaction rating

- Issue type (e.g., product missing, software bug)