Experiment - 6

Aim: To perform **Risk Analysis and Management** for the Event Management System.

Requirements:

Hardware Requirements:

- Computer
- Keyboard
- Mouse
- CPU

Software Requirements:

- Microsoft Word
- Any risk analysis tool (optional)

Theory:

Risk Analysis and Management is a critical process in software engineering to identify, assess, and mitigate potential risks that may impact the successful completion of a project. It helps in minimizing the adverse effects of risks by planning mitigation strategies. The key steps in risk analysis and management include risk identification, risk assessment, risk prioritization, and risk mitigation.

Types of Risks:

1. **Project Risks** - Risks that affect project schedule and resources.
2. **Technical Risks** - Risks associated with technology, performance, and integration.
3. **Financial Risks** - Risks affecting budget, revenue, and payment transactions.
4. **Security Risks** - Risks related to data security and privacy.
5. **Operational Risks** - Risks affecting the day-to-day functioning of the system.

1. Introduction

Risk analysis and management is crucial for ensuring the successful development and deployment of the Event Management System.This document identifies potential risks, their impact, likelihood, and corresponding mitigation strategies to ensure smooth operation and security.

2. Risk Identification

2.1 Financial Risks

- **Unauthorized Events:** Users may misuse the system to log fraudulent or non existing events.
- **Budget Overruns:** Users may overspend beyond set budgets due to lack of real-time tracking.
- **Delayed Reimbursements:** Inefficient approval workflows can cause payment delays.
- **Transactions Fluctuations:** International transactions may be impacted by currency value changes.

2.2 Technical Risks

- **System Downtime:** Unexpected server failures or software bugs may cause downtime, affecting accessibility.
- **Data Security Breaches:** Unauthorized access or hacking attempts may compromise sensitive financial data.
- **Data Loss:** Improper database management or software crashes could lead to loss of transaction history.
- **Integration Issues:** Challenges in integrating third-party payment gateways or accounting tools.
- **Scalability Concerns:** Performance bottlenecks may arise with increased users and transactions.

2.3 Operational Risks

- **Policy Non-Compliance:** Events reports may not comply with company policies or tax regulations.
- **User Errors in Data Entry:** Users may input incorrect financial data, affecting accuracy.
- **Approval Workflow Bottlenecks:** Delays in approvals due to inefficient workflows.
- **System Adoption Challenges:** Users may find the system complex, leading to low adoption rates.

2.4 Project Management Risks

- **Missed Deadlines:** Delays in development phases due to unforeseen technical or resource issues.
- **Resource Constraints:** Limited availability of skilled developers, testers, or financial experts.
- **Stakeholder Misalignment:** Conflicting requirements from management, finance teams, and users.

3. Risk Analysis

The table below categorizes risks based on their probability and impact:

Risk	Probability	Impact	Severity
Unauthorized Events	High	High	Critical
Budget Overruns	Medium	High	High
Incorrect Events Categorization	Medium	Medium	Medium
Delayed Reimbursements	High	Medium	High
Transactions Fluctuations	Medium	Medium	Medium
System Downtime	Medium	High	High
Data Security Breaches	High	High	Critical
Data Loss	Medium	High	High
Integration Issues	High	Medium	High
Scalability Concerns	Medium	Medium	Medium
Policy Non-Compliance	Medium	High	High
User Errors in Data Entry	Medium	Medium	Medium
Approval Workflow Bottlenecks	High	Medium	High
System Adoption Challenges	High	Medium	High
Missed Deadlines	Medium	High	High
Resource Constraints	High	High	Critical
Stakeholder Misalignment	Medium	High	High

4. Risk Mitigation Strategies

4.1 Financial Risk Mitigation

- Implement multi-level approval workflows to detect unauthorized expenses.
- Set real-time budget tracking and alerts to prevent overspending.
- Use AI-based categorization to ensure correct expense classification.
- Automate reimbursement processes to avoid payment delays.
- Implement real-time currency conversion tools to handle exchange rate fluctuations.

4.2 Technical Risk Mitigation

- Implement automated backup mechanisms to prevent data loss.
- Use robust security protocols like encryption and two-factor authentication.
- Conduct stress testing to ensure scalability and prevent system downtime.
- Ensure compatibility testing before integrating third-party services.

4.3 Operational Risk Mitigation

- Establish clear compliance rules and integrate tax regulations into the system.
- Implement validation checks to reduce user errors in data entry.
- Optimize approval workflows to reduce bottlenecks.

- Provide comprehensive training and user-friendly interfaces to encourage adoption.

4.4 Project Management Risk Mitigation

- Set realistic deadlines with buffer time for unexpected delays.
- Allocate sufficient resources and ensure proper workload distribution.
- Conduct regular meetings to align stakeholders and address conflicting requirements.

5. Conclusion

A well-planned risk management strategy is essential for ensuring the success of the Event Management System. By proactively addressing potential risks, the project can be delivered on time, within budget, and with high security and reliability standards.