EXPERIMENT 8

Develop Risk Mitigation, Monitoring and Management Plan.

Ferry Ticketing System

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TE COMPS B - Batch B/B2

AIM

To identify risks and prepare RMMM plan for your case study for at least 5 risks

PROBLEM STATEMENT:

For a ferry ticketing system, the class diagram would encompass essential components to facilitate passenger reservations, considering multiple ferry operators, diverse ticket classes, and various payment methods. The system should allow passengers to search for ferry routes, book tickets, check ferry availability, select seats (if applicable), and complete reservations. Key attributes for ferry instances include route details, departure and arrival information, departure dates, and the number of available seats, associated with specific ferry operators. Passengers need to provide personal details and choose from multiple payment methods, such as credit cards, cash, and others. The ferry system should support different ticket classes, each with distinct seat types and pricing. Additionally, provisions for reservation cancellations with appropriate refund mechanisms should be in place. Administrative functionalities should be available for managing ferry operators, routes, schedules, and passenger reservations.

THEORY

Risk Identification (Risk Item List):

1. **Server Outage**: This risk pertains to the possibility of one or more servers used for the reservation system going offline, resulting in the unavailability of the system. A server outage could be due to hardware failures, software issues, or other unforeseen circumstances.
2. **Data Security Breach**: This risk involves the unauthorized access or breach of sensitive customer data within the reservation system. It may result from cyberattacks, inadequate security measures, or human error, potentially leading to data leaks and privacy concerns.
3. **Network Connectivity Issues**: Network connectivity issues encompass problems with the internet or communication links that affect users' ability to access the reservation system. These issues could lead to slow or disrupted service and dissatisfied customers.
4. **Booking System Errors**: This risk relates to errors or defects in the booking system's software that may cause incorrect bookings, flight cancellations, or other issues. Such errors can lead to customer complaints and operational disruptions.
5. **Staffing Shortage**: Staffing shortages occur when there are not enough trained personnel to manage and support the reservation system. This risk can lead to inadequate customer service and system maintenance.
6. **Payment Gateway Failure**: A payment gateway failure involves the malfunction or unavailability of the system's payment processing component. It can disrupt the booking and payment processes, potentially causing financial losses.
7. **Changes in Regulatory**: Regulatory changes refer to updates in legal and industry standards that may affect the Ferry Ticketing system's

operation. Failure to adapt to these changes can result in non-compliance and associated penalties.

8. **Data Backup Failure**: This risk pertains to the failure of the data backup system used to safeguard critical data. If backups fail, the system may be vulnerable to data loss during outages or other unforeseen events.
9. **Weather Disruptions**: Weather disruptions involve adverse weather conditions affecting flight schedules and reservations. This can result in delays, cancellations, and the need for contingency planning to minimize customer inconvenience.
10. **Hardware Failures**: Hardware failures encompass issues with the physical components of the reservation system, such as servers, network equipment, or booking terminals. These failures can lead to system downtime and service interruptions.

RISKS	CATEGORY	PROBABILITY	IMPACT	RMMM
Server Outage	TS	80%	1	Fig 1
Data Security Breach	TS	50%	1	Fig 2
Network Connectivity Issues	TS	50%	2	Fig 3
Booking System Errors	PS	20%	1	Fig 4
Staffing Shortage	HR	50%	3	Fig 5
Payment Gateway Failure	TS	20%	1	
Changes in Regulatory	BU	50%	3	
Data Backup Failure	TS	20%	2	
Weather Disruptions	ES	50%	2	
Hardware Failures	TS	50%	2	

THE RMMM PLAN

Risk Documentation Form:

Risk ID: *001*	**Classification:** *TS*	**Report Date:** *31/10/23*
Description: *Server outage – Unavailability of reservation system*		
Probability: *80%*	**Impact:** *80%*	**Risk Exposure:** *64%*
First Indicator: Sudden server downtime.		
Mitigation Approaches: *Implement redundant servers.*		
Date Started: *31/10/23*	**Date to Complete:** *02/11/23.*	**Owner:** *Vignesh*
Current Status: *Redundant servers are in place, and the risk is being closely monitored. No outages reported.*		
Contingency Plan: *Switch to backup servers in case of a server outage.*		
Trigger for Contingency Plan: *Complete system downtime for more than 2 hours.*		

FIG 1

Risk ID: *002*	**Classification:** *TS*	**Report Date:** *30/10/23*
Description: *Data security breach – Unauthorized access to sensitive customer data.*		
Probability: *50%*	**Impact:** *80%*	**Risk Exposure:** *40%*
First Indicator: Unusual data access or unauthorized login attempts.		
Mitigation Approaches: E*nhance security measures.*		
Date Started: *31/10/23*	**Date to Complete:** *2/11/23*	**Owner:** *Pranay*
Current Status: *Enhanced security measures have been implemented and are actively monitored.*		
Contingency Plan: *Activate incident response plan in case of a breach.*		
Trigger for Contingency Plan: *Detected unauthorized access or data breach.*		

FIG 2

Risk ID: *003*	**Classification:** *TS*	**Report Date:** *9/11/23*
Description: *Network Connectivity Issues – Disruptions in internet connectivity affecting reservation system access.*		
Probability: *50%*	**Impact:** *50%*	**Risk Exposure:** *25%*
First Indicator: Frequent network outages or slow connection.		
Mitigation Approaches: Establish redundant Internet Service Providers (ISPs).		
Date Started: *10/11/23*	**Date to Complete:** *12/11/23*	**Owner:** *Pranay*
Current Status: *Redundant ISPs have been established, and network connectivity is more stable.*		
Contingency Plan: *Switch to the backup ISP in case of prolonged network downtime.*		
Trigger for Contingency Plan: *Network downtime exceeding 4 hours with the primary ISP.*		

FIG 3

Risk ID: *004*	**Classification:** *PS*	**Report Date:** *22/09/23*
Description: *Booking System Errors – Software defects leading to incorrect bookings and flight disruptions.*		
Probability: *20%*	**Impact:** *80%*	**Risk Exposure:** *16%*
First Indicator: Customer complaints about incorrect bookings.		
Mitigation Approaches: Regular quality assurance (QA) and testing.		
Date Started: *23/09/23*	**Date to Complete:** *26/09/23*	**Owner:** *Vignesh*
Current Status: *QA and testing procedures have been established and are ongoing to identify and rectify software defects.*		
Contingency Plan: *Rapid response team to manage and resolve any booking system errors in real-time.*		
Trigger for Contingency Plan: *A significant increase in customer complaints regarding booking issues.*		

FIG 4

Risk ID: *005*	**Classification:** *HR*	**Report Date:** *22/08/23*
Description: *Staffing Shortage – Inadequate personnel to manage and support the reservation system.*		
Probability: *50%*	**Impact:** *20%*	**Risk Exposure:** *10%*

First Indicator: Increased workload and extended response times for customer queries.		
Mitigation Approaches: Cross-training of existing staff and backup staff recruitment.		
Date Started: *22/08/23*	**Date to Complete:** *23/08/23*	**Owner:** *Pranay*
Current Status: *Cross-training and backup staff recruitment processes are underway to address staffing shortages.*		
Contingency Plan: *Temporary outsourcing of support services during peak periods.*		
Trigger for Contingency Plan: *Prolonged customer response times due to staffing shortages.*		

FIG 5

CONCLUSION

In this experiment, we learned how to effectively manage risks in the context of a Ferry Ticketing system. By creating a risk table and detailed documentation forms, we were able to systematically identify, assess, and prioritize potential risks.This structured approach helps project managers and teams proactively address issues like server outages, data breaches, and network connectivity problems. It also enables us to develop mitigation strategies and contingency plans, ensuring that the system can adapt to changing circumstances. Through this process, we've gained valuable insights into how to enhance the reliability and resilience of the reservation system, ultimately leading to improved customer satisfaction and a smoother operation of the service.