

SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

EXPLORING A FEASIBLE PLATFORM FOR PROJECT MANAGEMENT

PROJECT ID: R24_002







OUR TEAM



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AGENDA







INTRODUCTION

- Project Management through Enhanced Communication and management Strategic Practices.
- The critical challenges faced in project management, with a focus on risk management and the team allocation dilemma.
- Develop Al system for optimizing project team formation and risk assessment with KPl's.
- Assess likelihood and impact of identified risks and provide time- forecasting's.





PROBLEM STATEMENT

- This project aims to develop enhanced communication protocols, strategic planning techniques, and risk management tools to address these challenges.
- Inadequate risk management practices that fail to proactively identify and mitigate project risks.

 Without proper risk assessment, unanticipated problems can emerge leading to costly delays and disruptions







RESEARCH PROBLEM

What communication protocols, strategic planning techniques, and risk management tools are most effective for improving project management outcomes related timeline performance, risk mitigation, and stakeholder satisfaction?







OBJECTIVES OF THE STUDY

Main Objective

 Evaluate the applicability and benefits of adopting agile project management practices for agile software project development.

Sub Objective

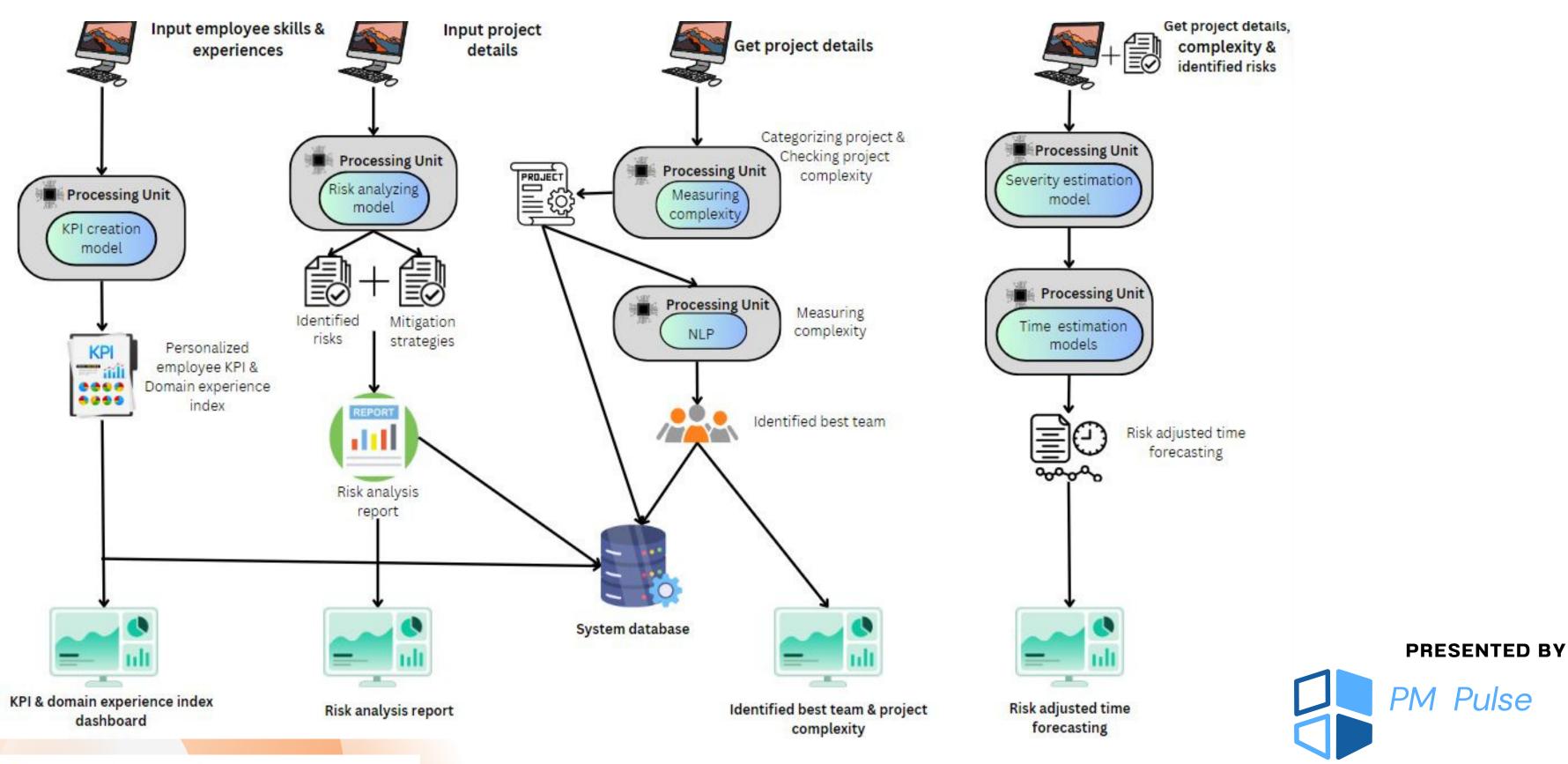
- Identify core APM principles and frameworks that can be implemented for agile software projects.
- Develop a customized APM framework optimized for web application development life cycles.
- Provide recommendations for integration, adaptation, and continuous improvement of the APM framework for web teams.
- Review literature on current agile project management (APM)
 practices and frameworks used for software/web development.







SYSTEM OVERVIEW DIAGRAM





METHODOLOGY

- Machine Learning
- MYSQL DATABASE
- Agile Methodolgy
- AWS Azure









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Specialization - ISE

Component

Risk-adjusted Time Forecasting





BACKGROUND OF THE STUDY

- Software projects often miss schedules and budgets due to defects and risks.
- Prior research shows significant delays from fixing bugs and rework.
- Existing time estimation models do not adequately consider defects.
- Some techniques predict defects, but don't integrate with time forecasts.
- Other models incorporate risks but lack defect analysis.





RESEARCH PROBLEM

- Failure to properly incorporate project risks leads to unrealistic schedules.
- Lack of integrated framework that combines defect prediction, risk analysis, and continuous re-estimation.
- Challenges in modeling the complex relationships between defects, risks, and developer productivity.
- Difficulty gathering sufficient historical data across projects to train accurate predictive models.
- Validating new techniques against real-world software projects with imperfect data.







RESEARCH GAP OF THE STUDY

FEATURES	RESEARCH [1]	RESEARCH [2]	RESEARCH [3]	RESEARCH [4]	RESEARCH [5]	AGILE PULSE
Evaluating and comparing different ML techniques	\bigcirc	*	*	*	*	Ø
Testing generalizability across project types	*	(A)	*	×	*	\bigcirc
Incorporating agile-specific factors	*	*	8	×	×	\bigcirc
Optimizing prediction model transparency	*	*	*	\bigcirc	*	Ø
Continuous refinement and feedback loop	*	*	*	*		\bigcirc





OBJECTIVES

Develop a new integrated framework that incorporates defect prediction, risk analysis, and continuous reestimation for software project timelines.

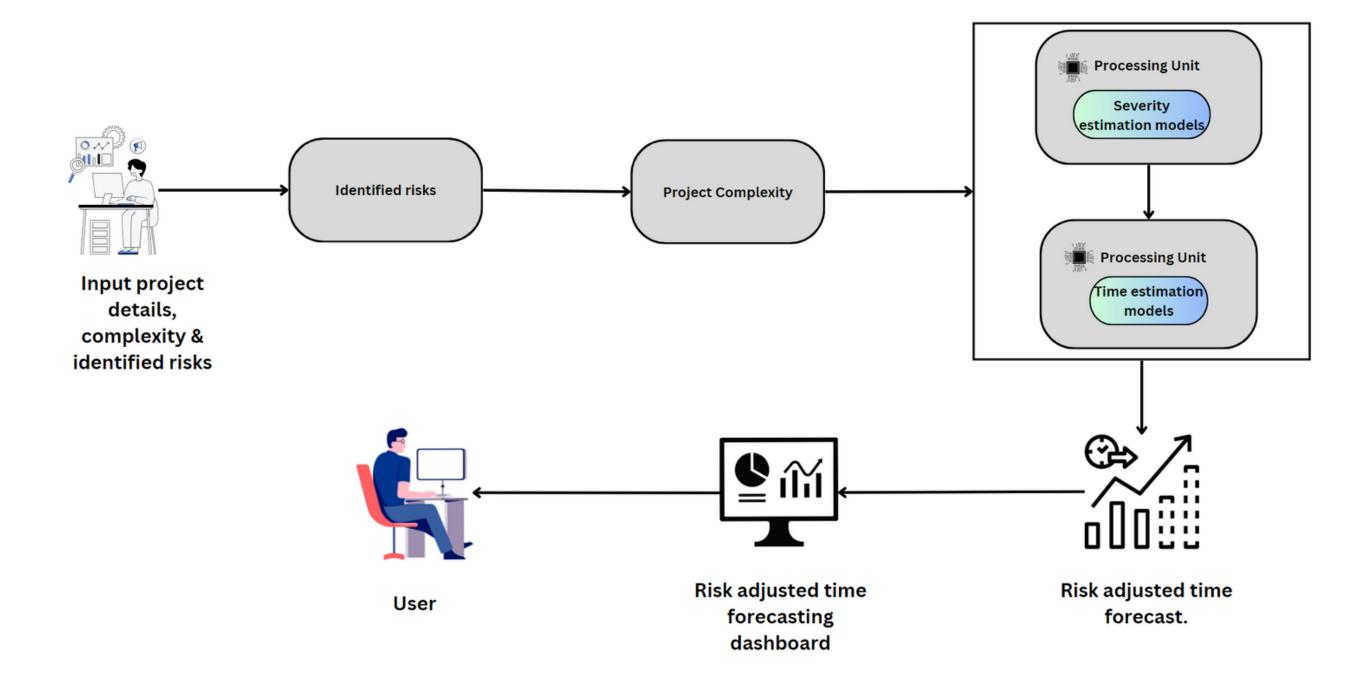


- Create novel models to account for the relationships between defects, risks, developer productivity, and schedule overruns.
- Collect observed data from past projects to train predictive models for defect forecasting and risk assessment.
- Validate the new estimation approach against real-world software projects and compare accuracy to existing models.
- Propose methods to reduce cognitive biases and improve human judgment in timeline forecasting.
- Produce adaptive project timeline forecasts that continuously incorporate new data to improve accuracy.
- Demonstrate increased effectiveness of the new technique over current estimation models.





SYSTEM DIAGRAM







WORK BREAKDOWN STRUCTURE

Exploring a feasible framework for Agile Project Management **Principles in the Development of WEB Applications Project Group Project Proposal** PP1 PP2 **Finalize Stage** Registration Get the guidance for the **Select Supervisors** Discuss and get guidance Get the consultation from Complete 100% of the final stages from the supervisors supervisors implementation overall performance finalize of entire system Online Group Complete 90% of the Collect more domain Registration component knowledge and more researches Implement the 50% of the **Final Presentation** Collect Data, research system Prepare and finalise the papers and clearly Research on identify the research research paper implementation and problem, gap, novelty in steps pre production **Submit Status Report** Submit the research **Prepare Proposal Report PP1 Presentation TAF Submission** paper **Submit Status Report Preposal Report** Submission



GANTT CHART

PROCESS	JAN	MAR	APR	MAY	JUL	AUG	SEP
RESEARCH GROUR FORMATION							
SELECTION RESEARCH TOPIC							
FEASIBILITY & BACKGROUND STUDY							
SUPERVISOR & CO- SUPERVISOR SELECTION							
EXTERNAL SUPERVISOR SELECTION							
TOPIC REGISTRATION FORM SUBMISSION							
INDEPTH FEASIBILITY & BACKGROUND STUDY 1							
TOPIC ASSESMENT FORM SUBMISSION							
INDEPTH FEASIBILITY & BACKGROUND STUDY2							
INDIVIDUAL PROPOSAL REPORT SUBMISSION							
PROPOSAL PRESENTATION							
IMPLEMENTATION OF THE RESEARCH WORK (UPTO 50%)							
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PROGRESS PRESENTATION 2							
INTEGRATION OF THE RESEARCH WORK							
PROJECT COMPLETION							
FINAL PRESENTATION							
FINAL REPORT							



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PM Pulse





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Component

Risk Identification of software projects and provide mitigation strategies to make decisions through risk analysis report.

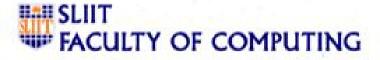




BACKGROUND OF THE STUDY

- Didn't identify and mitigate risks before they affected the project outcomes.
- Didn't use historical data from similar projects to provide reliable insights for risk management.
- Automate and improve the risk management process and outcomes.
- Only rely on assumptions, estimations, or expert opinions.





RESEARCH PROBLEM

- How to avoid/reduce risks ?
- How to use insights from historical data?
- How to enhance project planning and decision making?
- How to deliver high-quality and reliable software products?







RESEARCH GAP OF THE STUDY

	RESEARCH [1]	RESEARCH [2]	RESEARCH [3]	SOLUTION
Risk Identification Technique - ML models	\bigcirc	*	*	(A)
Risk Mitigation Approach	*	Ø	*	Ø
Aggregates Risk Reporting	*	*	×	Q
Continuous Improvement	×		Ø	Ø





OBJECTIVES

Develop a risk identification and mitigation system based on historical data to provide accurate risk information for software projects.

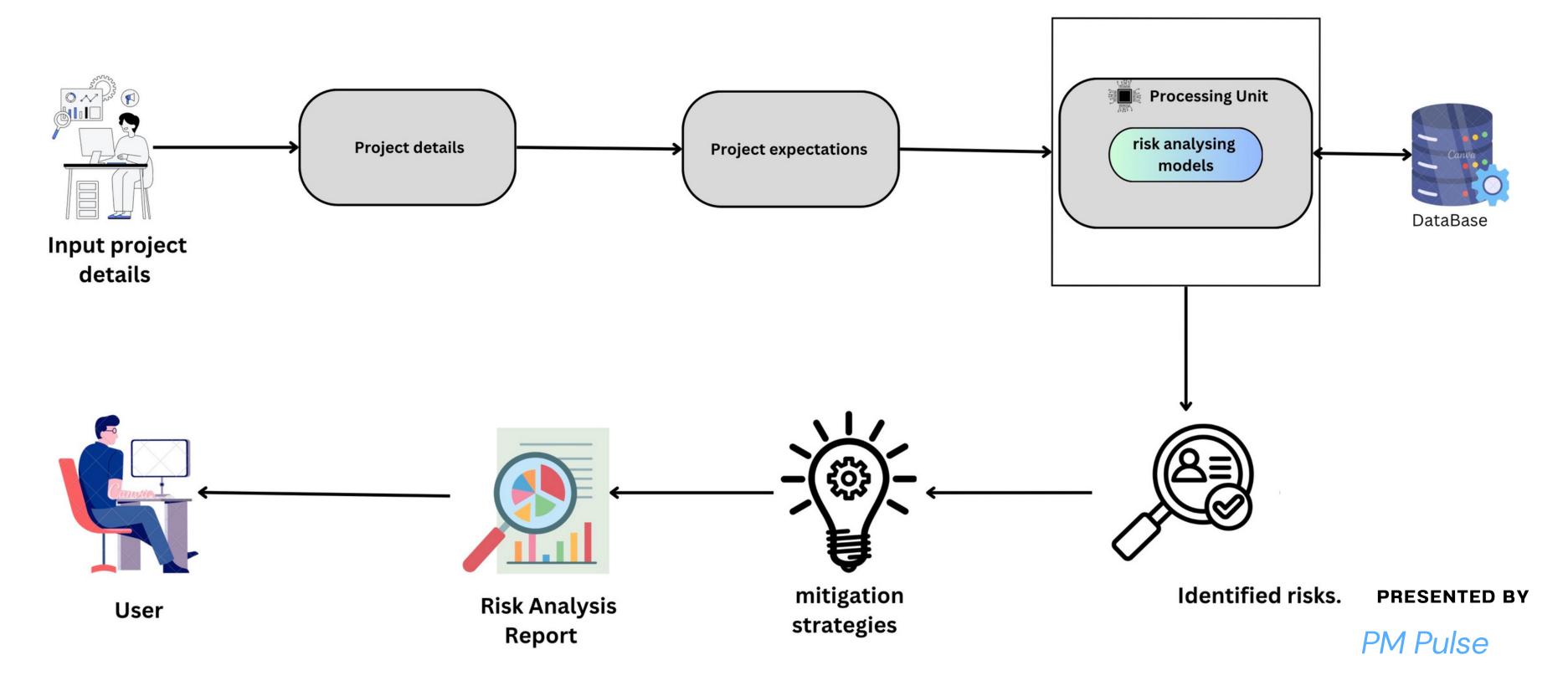


- Identify project risks based on domainspecific data.
- Provide effective risk mitigation strategies
- Analyze historical data to enhance risk assessment.
- Implement a risk analysis report to make decisions
- Implement a dashboard

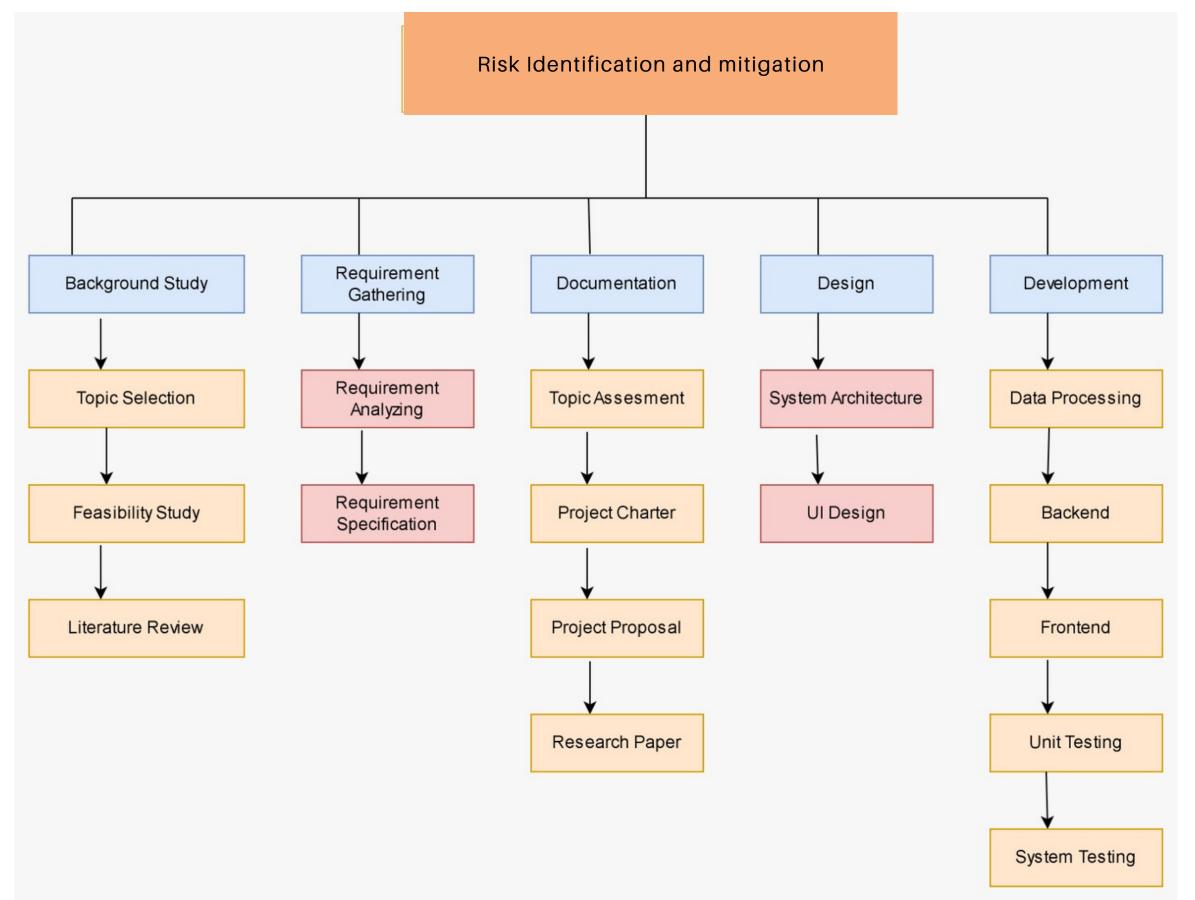




SYSTEM DIAGRAM



WORK BREAKDOWN STRUCTURE



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Component

Dynamic Project Navigator





BACKGROUND OF THE STUDY

 This component aims to automate project categorization based on properties like type, scope, domain. [1]It will map projects to key performance indicators (KPIs) to generate a complexity rating [2]

 By automating categorization, complexity analysis, and team recommendations, this component addresses gaps in current project planning processes that depend heavily on subjective human evaluation [3]





RESEARCH PROBLEM

 How can the categorization, KPI mapping and recommendation systems be improved through continuous learning as more project data becomes available?







SUB OBJECTIVES

Develop an automated categorization system that can accurately classify projects based on properties like type, scope, domain, using machine learning techniques.

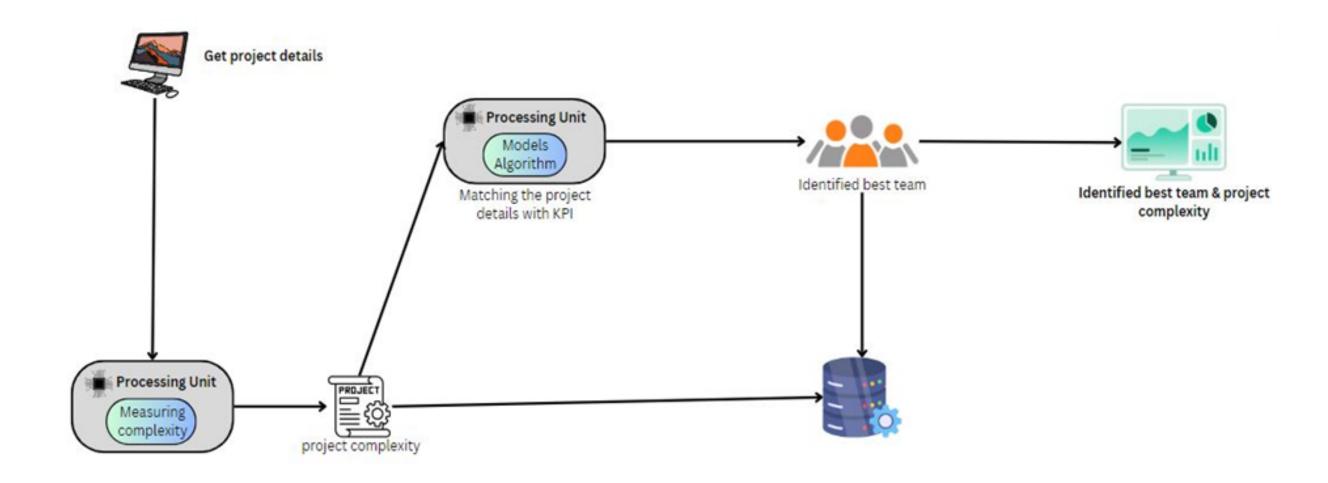


Identify and validate key performance indicators
 (KPIs) that are predictive of project complexity
 through statistical analysis of historical project data.





SYSTEM DIAGRAM







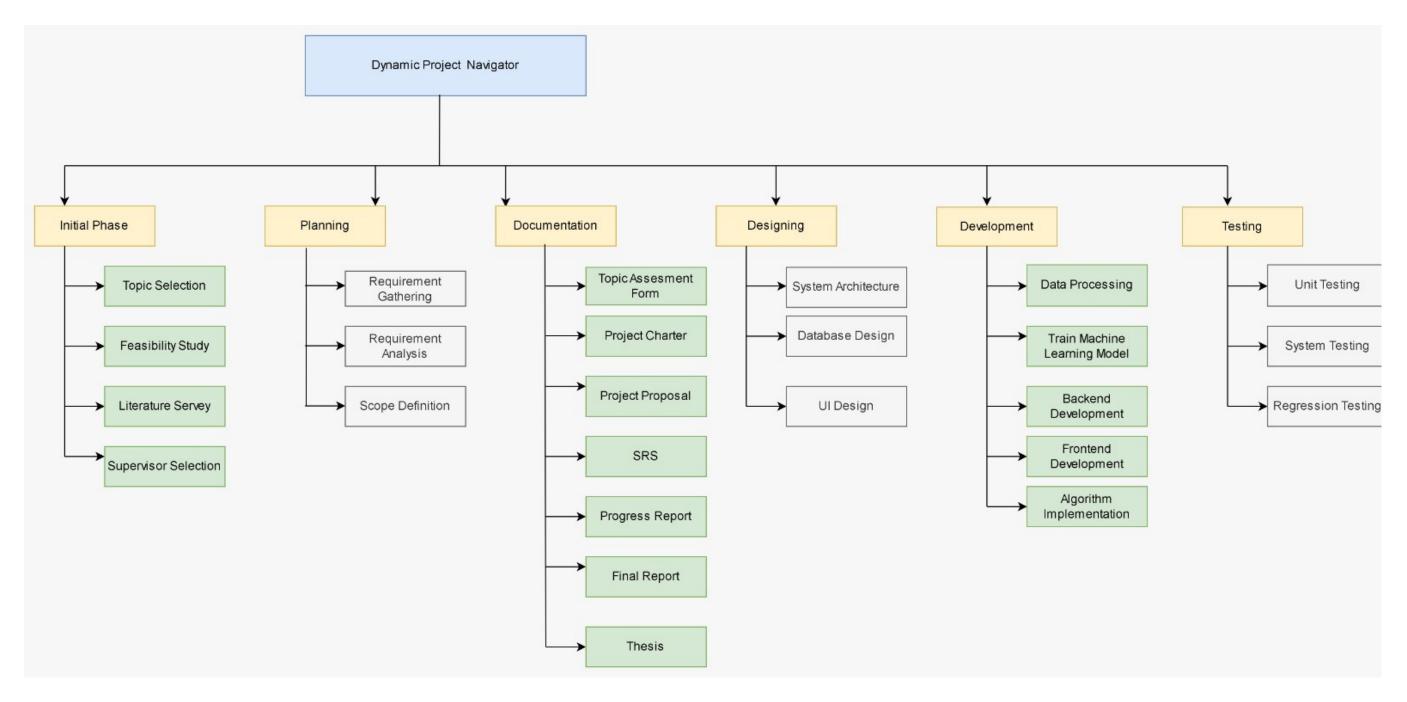
RESEARCH GAP OF THE STUDY

FEATURES	Research [1]	Research [2]	PM Pulse
User Friendly	Q	&	\bigcirc
Complexity	Ø	Ø	
Dynamic team formation	*	*	S
KPI mapping to team selection			⊗





WORK BREAKDOWN STATION







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[] D. Snowden and M. Boone, "A Leader's Framework for Decision Making," Harvard Business Review.

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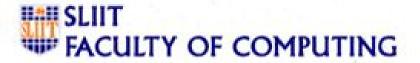
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Component

Skill-based Employee KPI Generator





BACKGROUND OF THE STUDY

- Automated systems that can generate customized KPIs based on employee skills and experience
- KPI needs to be develop based on the employee and different teams.
- we need to remove or add KPIs when the time is evolving due to way companies working are changing.
- Monitor employee productivity and contribution.
- Key performance indicators (KPIs) are metrics that help quantify and track employee performance.





RESEARCH PROBLEM



- Manual generation of KPIs is time-consuming, low accuracy, and results in unrelated.
- •Failure to include employee skills and experience in general KPIs
- Lack of customized, skills-based KPIs hampers effective performance measurement and talent development.





RESEARCH GAP OF THE STUDY

- Automatically generating personalized KPIs for each employee based on their skills and experience.
- Incorporating more roles beyond just software engineers, QA, etc.
- Enabling continuous updates to KPIs over time as skills evolve.





RESEARCH GAP OF THE STUDY

FEATURES	RESEARCH [1]	RESEARCH [2]	RESEARCH [3]	RESEARCH [4]	RESEARCH [5]	AGILE PULSE
Personalized KPIs	⊗	*	*	*	*	\bigcirc
Dynamic KPI Updates	*	⊗	*	×	*	\bigcirc
Skills Gap Analysis	*	×	(A)	*	*	8
Skills-Connected KPIs	*	*	*	\bigcirc	×	\bigcirc
ML for KPIs	*	*	*	*	(A)	Ø





SUB OBJECTIVES

To develop an automated system for generating tailored KPIs for employees based on their skills and experience.

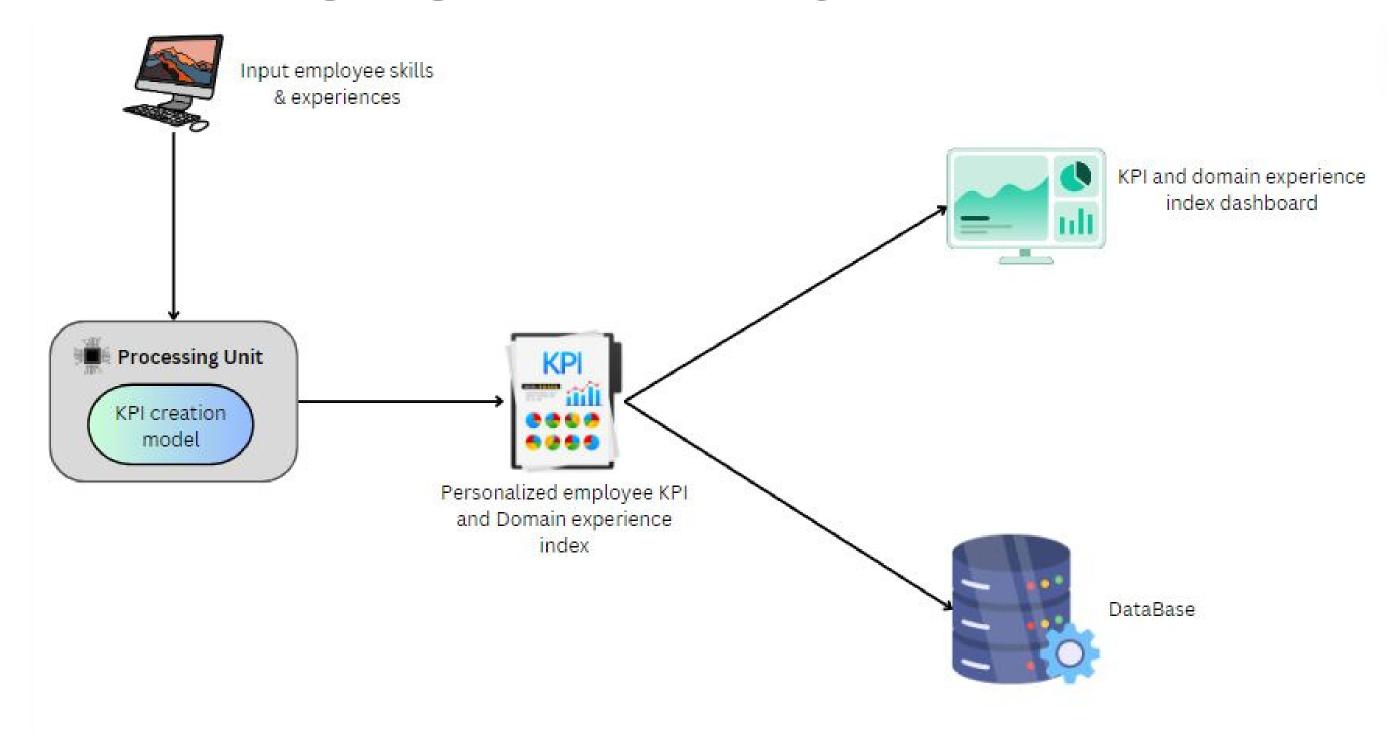


- Analyze various skills and experience required for different roles.
- Develop algorithms to map skills and experience to relevant KPIs.
- Create a user-friendly interface for entering employee details.
- Generate customized KPI metrics and targets for each employee.





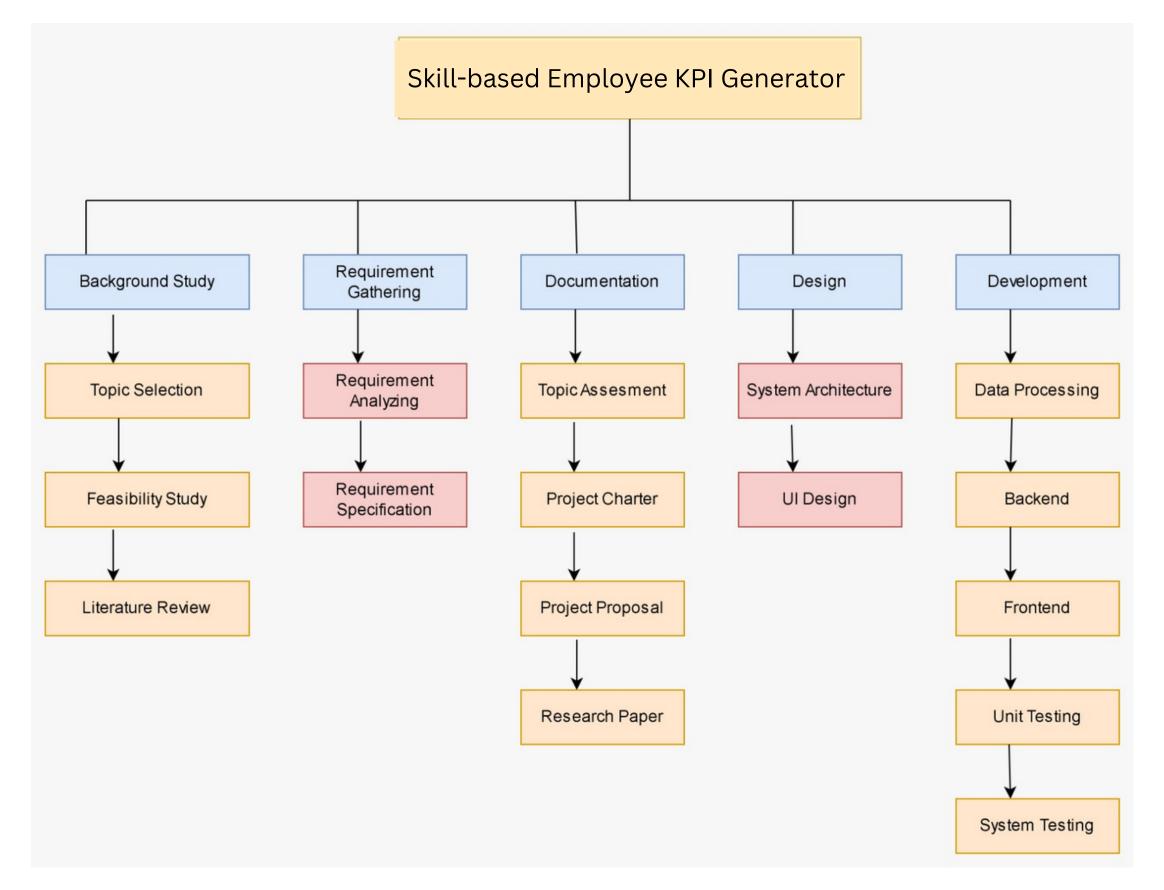
SYSTEM DIAGRAM







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NOVELTY - The automated approach to customized KPI creation is innovative and aims to enhance existing performance review processes.

Functional Requirements

- •Dashboard to display generated KPIs for each employee.
- Algorithms to map skills to KPIs.
- Ability to capture employee details like role, skills, experience etc.

Non-Functional Requirements

- •The KPI generation process should be fast, accurate and bias-free.
- •The system should be user-friendly and accessible to non-technical users.
- •The system should be secure to protect sensitive employee data.



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COMMERCIALIZATION

- Using the proposed application, we hope to provide software companies considering each side
- Market the app to companies, especially in the software/IT services and project management spaces, as
 a tool to manage their web development projects. Offer customized versions and premium support.
- Using the proposed app as the platform for an agile web project management service. Charge clients a
 fee to manage their projects using the app and your project management methodology.
- Offer in-person or online training programs that certify people on using the app to manage agile web projects. Charge fees for training
- Create a business-to-business software-as-a-service strategy and collect monthly fees per user.
- Provide categories of pricing and free trials





BUDGET AND BUDGET JUSTIFICATION

		Unit Cost	Total Cost
Cloud Price	*3	6000	18,000
Developers' value	*4	50,000	200,000
Database Price		5000	5000
AWS		7000	7000
Marketing and Advertisements		10,000	10,000
Total Value			240,000







Thank You!



