DECEMBER 28, 2024

PROJECT CHARTER FOR DARK REFLECTION (FYP)

PROJECT MANAGEMENT

TEAM MEMBERS

NAME	ROLL NUMBER
AASIA KHALID	210266
M. UMAR SAJID	210269

CGD VII

Contents

GENERAL PROJECT INFORMATION

PROJECT NAME		PROJECT MANAGER	PROJECT SPONSOR
Dark Reflection		Aasia Khalid	Air University
EMAIL	PHONE	ORGANIZATIONAL UNIT(S)	
210266@students.au.edu.pk	+92-3369266235	Project Management	
GREEN BELTS ASSIGNED		EXPECTED START DATE	EXPECTED COMPLETION DATE
Aasia Khalid (Animation & Art Direction)		01/06/2024	10/10/2024
BLACK BELTS ASSIGNED		EXPECTED START DATE	EXPECTED COMPLETION DATE
Muhammad Umar Sajid (Unity Development Lead)		01/09/2024	31/01/2025

EXECUTIVE SUMMARY

The **"Dark Reflection"** project is a 2.5D narrative-driven platformer game developed as a final-year project by **Aasia Khalid** and Muhammad Umar Sajid, students at Air University. The game uniquely blends engaging gameplay mechanics with a captivating story that explores themes of identity and inner conflict. By intertwining storytelling with atmospheric exploration and innovative puzzle design, the project aims to address gaps in the gaming market for immersive and meaningful player experiences.

Scheduled for completion by **March 2025**, the project encompasses ten distinct chapters with detailed environments, such as forests, warehouses, and rooftops, coupled with innovative mechanics and high-quality animations. Developed using **Unity and Blender**, the project emphasizes quality through rigorous testing and player feedback sessions.

With a total budget of **Rs 800,000**, the project aims to attract narrative-driven game enthusiasts, delivering an engaging product with the potential for commercial success. Beyond revenue generation, "Dark Reflection" serves as an opportunity for the team to gain hands-on experience, preparing them for professional opportunities in game development and design. The project aspires to launch on **PC,** supported by marketing campaigns to establish its presence in the gaming community.

PROJECT OVERVIEW

PROBLEM OR ISSUE

Many platformers' games struggle to provide a captivating narrative alongside engaging gameplay, often resulting in either shallow storylines or repetitive mechanics. There's a demand for a game that intertwines storytelling with atmospheric exploration and innovative puzzle design, creating an immersive experience for players.

PURPOSE OF PROJECT

The purpose of the Dark Reflection project is to develop a unique 2.5D platformer game that effectively combines a deep narrative with engaging gameplay mechanics. The project aims to explore themes of identity and inner conflict through a captivating storyline and immersive environments.

BUSINESS CASE

The gaming industry has seen a rise in the popularity of narrative-driven games, creating an opportunity for Dark Reflection to fill a niche in the market. By leveraging innovative gameplay mechanics and rich storytelling, the project aims to attract players seeking a thoughtful and immersive gaming experience. The successful launch of Dark Reflection can lead to potential revenue through sales and subsequent expansions or sequels, establishing a franchise.

GOALS / METRICS

- Completion of Game Development: Complete the development of ten chapters by March, 2025
- Player Engagement: Achieve a minimum player retention rate of 70% during playtesting sessions.
- Quality Assurance: Ensure that 90% of play testers rate the game positively on gameplay mechanics and narrative engagement.
- Performance Metrics: Aim for a minimum frame rate of 30 FPS on targeted hardware during gameplay.

Market Launch: Successfully launch the game on [specify platforms] within [specify timeframe] after project completion.

EXPECTED DELIVERABLES

- Game Design Document (GDD): A comprehensive document outlining game mechanics, story arcs, character designs, and level layouts.
- Prototype Build: A playable version of the game that includes the first chapter and basic mechanics for testing.
- Final Game Build: The complete game, including all ten chapters, polished graphics, animations, and sound design.

- Marketing Material: Promotional assets such as trailers, screenshots, and a press kit to support the game's launch.

Post-Launch Support Plan: A strategy for addressing player feedback, bug fixes, and potential updates or expansions.

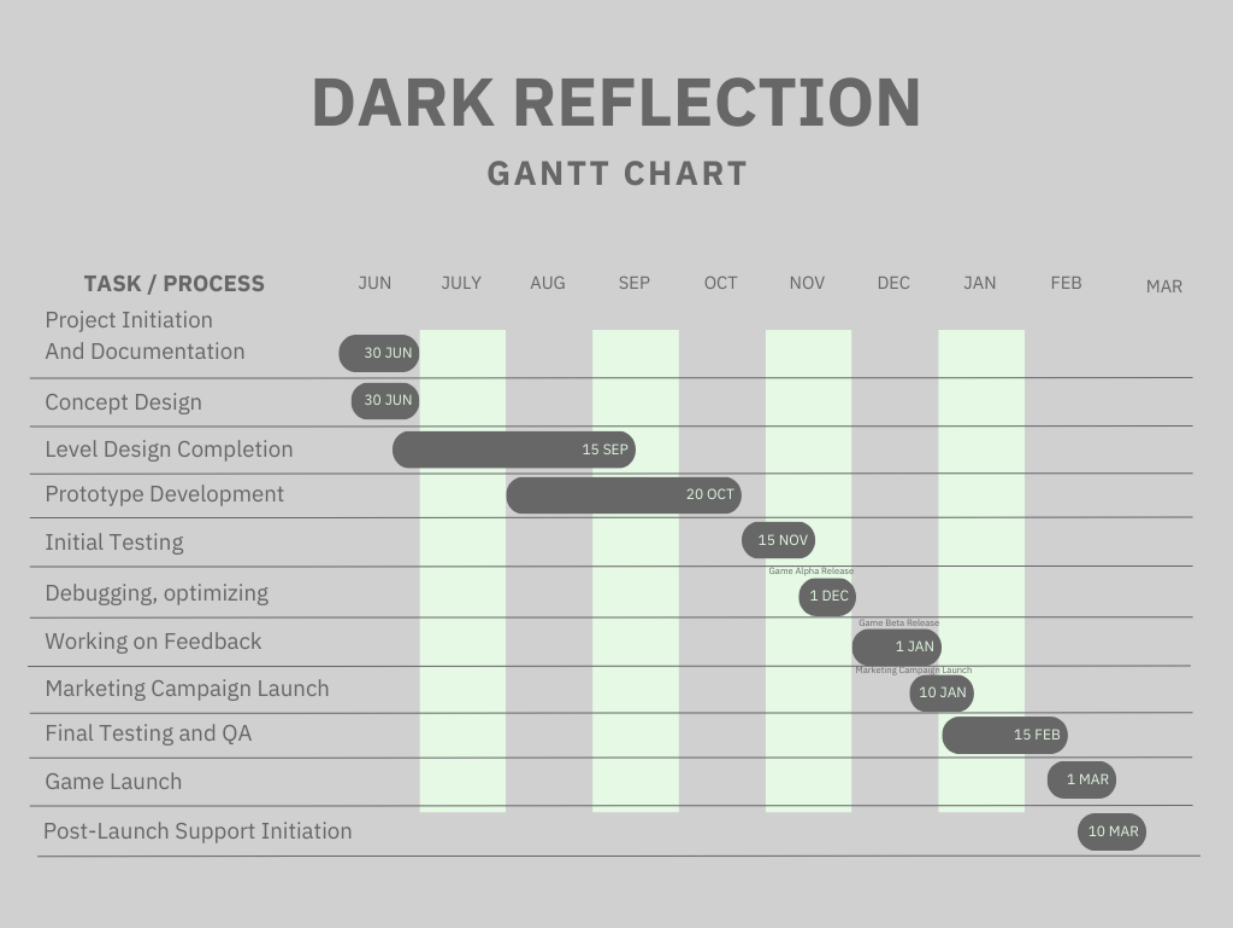
PROJECT SCOPE

WITHIN SCOPE	• Design and implement gameplay mechanics, including movement, puzzle-solving, and combat systems. • Develop ten distinct chapters with unique environments, such as forests, warehouses, rooftops, and docks. • Create engaging narrative elements, including dialogue and cutscenes that enhance the storyline. • Produce high-quality animations and visual assets using Unity. • Conduct playtesting and feedback sessions to refine gameplay and improve user experience.
OUTSIDE OF SCOPE	• Development of additional chapters or content beyond the initial ten chapters. • Extensive marketing and promotional activities outside of the game development process. • Creation of a multiplayer mode or online features. • Development of additional platforms (e.g., console or mobile) beyond the initial PC release. • Advanced audio design, such as an orchestral score, that requires hiring external composers.

TENTATIVE SCHEDULE

KEY MILESTONE	Description	Planned Completion Date
Project Initiation	Finalize project charter, scope, and requirements.	01/06/2024
Concept Design Completion	Finalize story outline, character designs, and art style guide.	30/06/2024
Level Design Completion	Complete design and layout for all chapters.	15/09/2024
Prototype Development	Implement core gameplay mechanics and create a playable prototype.	20/10/2024
Initial Testing	Conduct internal testing for early feedback.	15/11/2024
Game Alpha Release	Release an alpha version for in-depth testing and feedback.	01/12/2024
Game Beta Release	Release a beta version with improved mechanics and bug fixes.	01/01/2025
Marketing Campaign Launch	Begin marketing campaign, including trailers and social media.	10/01/2025
Final Testing and QA	Complete final bug fixes, polish, and quality assurance checks.	15/02/2025
Game Launch	Officially release the game on chosen platforms.	01/03/2025
Post-Launch Support Initiation	Start implementing post-launch updates and support.	10/03/2025

GANTT CHART


DARK REFLECTION
GANTT CHART
TASK / PROCESS
JUN
JULY
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
Project Initiation And Documentation
30 JUN
Concept Design
30 JUN
Level Design Completion
15 SEP
Prototype Development
20 OCT
Initial Testing
15 NOV
Debugging, optimizing
Game Alpha Release
1 DEC
Working on Feedback
Game Beta Release
1 JAN
Marketing Campaign Launch
Marketing Campaign Launch
10 JAN
Final Testing and QA
15 FEB
Game Launch
1 MAR
Post-Launch Support Initiation
10 MAR

RESOURCES

PROJECT TEAM	Aasia Khalid (210266) – Lead Animator Muhammad Umar Sajid (210269) – Unity Developer
SUPPORT RESOURCES	• Mentors/Advisors: Guidance from faculty or industry professionals for feedback on game design and development strategies. • Play testers: Recruitment of fellow students or gaming enthusiasts to provide feedback during development phases. • Online Resources: Access to tutorials, forums, and communities related to game development and design.
SPECIAL NEEDS	• Training: Any team members unfamiliar with certain tools (like Blender or Unity) may need training or access to tutorials. • Collaboration Tools: Utilization of project management tools (e.g., Trello, Slack) to enhance communication and task tracking among team members. • Sound Design Resources: Consideration for hiring or collaborating with sound designers for audio elements if the project scope allows.

COSTS

COST TYPE	VENDOR / LABOR NAMES	RATE	QTY	AMOUNT
Labor	Animator (Aasia Khalid)	Rs 1,500/hr.	150	Rs 225,000
Labor	Unity Developer (Muhammad Umar Sajid)	Rs 1,500/hr.	150	Rs 225,000
Software License	Unity Student License	Rs 0	1	Rs 0
Supplies	Graphic Design Software (e.g., Adobe)	Rs 10,000/month	3 months	Rs 250,000
Hardware	High-Performance Computer Rental	Rs 50,000	1	Rs 50,000
Miscellaneous	Testing Devices (Smartphone, Tablet)	Rs 25,000	1	Rs 25,000
Miscellaneous	Research Papers and Resources	Rs 2,000	5	Rs 10,000 -
Miscellaneous	Marketing and Presentation Materials	Rs 15,000	1	Rs 15,000
		TOTAL COSTS		Rs 800,000

BENEFITS AND CUSTOMERS

PROCESS OWNER	Aasia Khalid will serve as the process owner, overseeing the development and ensuring that project objectives are met. Responsibilities will include monitoring progress, managing resources, and facilitating communication among team members.
KEY STAKEHOLDERS	• Project Team Members: Aasia Khalid and Muhammad Umar Sajid. • Faculty Advisors: Professors or mentors providing guidance and support throughout the development process. • Play testers: Individuals who will provide feedback on gameplay and mechanics, helping to refine the game. • Potential Investors/Publishers: Entities interested in funding or distributing the game upon completion.
FINAL CUSTOMER	The final customers are players who enjoy narrative-driven platformer games, including casual gamers and enthusiasts looking for immersive storytelling and engaging gameplay.
EXPECTED BENEFITS	• Enhanced Learning Experience: Team members will gain hands-on experience in game development, enhancing their skills and knowledge. • Market Readiness: The project will prepare the team for future opportunities in the gaming industry, including job prospects and internships. • Player Engagement: By delivering a unique gaming experience, Dark Reflection aims to attract a dedicated player base, potentially leading to future projects or expansions. • Revenue Generation: Successful game sales can provide financial returns and potentially fund future game development initiatives.

TYPE OF BENEFIT	BASIS OF ESTIMATE	ESTIMATED BENEFIT AMOUNT
Increased Player Engagement	Game design team's estimates	Rs 1,500,000
Revenue from Game Sales	Finance's projections based on similar titles	Rs 4,200,000
Cost Savings from In-House Assets	Art team's estimates	Rs 900,000
Higher Brand Visibility	Marketing team's estimates	Rs 750,000
Improved Team Efficiency	Project management's estimations	Rs 650,000
Reduced Development Time	Management's strategy projections	Rs 1,000,000
Future Development Savings	Estimator's projections	Rs 1,200,000
	TOTAL BENEFIT	Rs 10,200,000

RISKS, CONSTRAINTS, AND ASSUMPTIONS

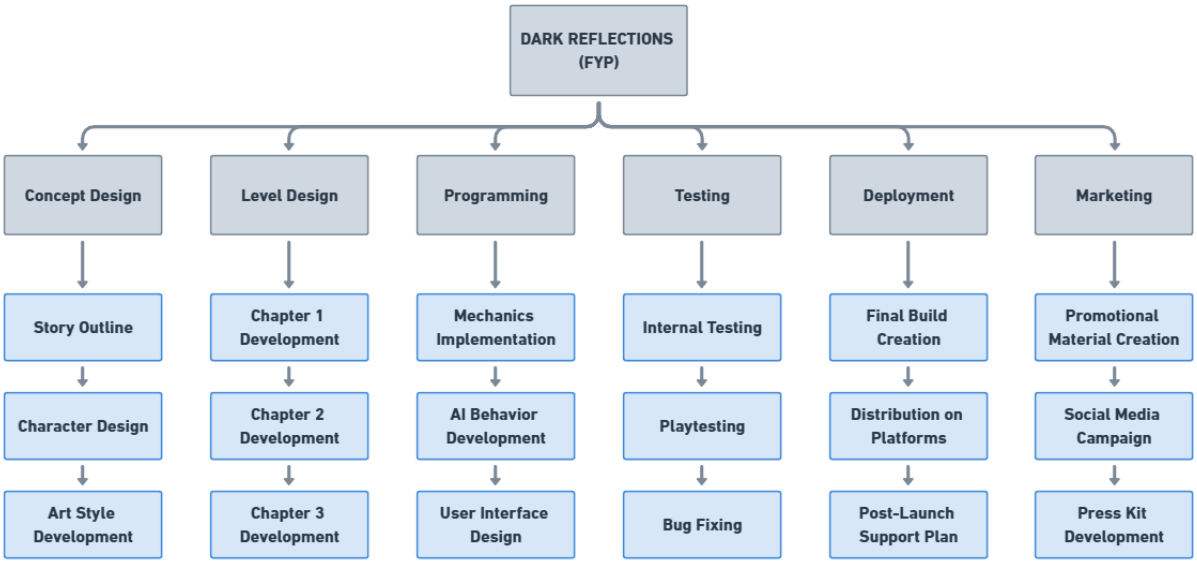
RISKS	• Technical Challenges: Issues in integrating animations into Unity. • Time Management: Balancing Unity and animation tasks within the project timeline. • Resource Constraints: Limited testing resources could impact quality assurance.
CONSTRAINTS	• Limited development time of 20 weeks. • Restricted access to high-performance resources.
ASSUMPTIONS	• The project will utilize Unity for game development and Blender for animations. • Both team members will work in collaboration, focusing on Unity development and animation, respectively.

PREPARED BY	TITLE	DATE
Aasia Khalid	Senior Project Manager	10/26/2024

WORK BREAKDOWN STRUCTURE (WBS)

1. GAME DEVELOPMENT

1.1 Concept Design	1.1.1 Story Outline
	1.1.2 Character Design
	1.1.3 Art Style Development
1.2 Level Design	1.2.1 Chapter 1 Development (Into the Woods)
	1.2.2 Chapter 2 Development (The Abandoned Warehouse)
	1.2.3 Chapter 3 Development (Rooftop Chase)
1.3 Programming	1.3.1 Gameplay Mechanics Implementation
	1.3.2 AI Behavior Development
	1.3.3 User Interface Design
1.4 Testing	1.4.1 Internal Testing
	1.4.2 Playtesting
	1.4.3 Bug Fixing
1.5 Deployment	1.5.1 Final Build Creation
	1.5.2 Distribution on Platforms
	1.5.3 Post-Launch Support Plan
1.6 Marketing	1.6.1 Promotional Material Creation
	1.6.2 Social Media Campaign
	1.6.3 Press Kit Development



WORK BREAKDOWN STRUCTURE (WBS) DICTIONARY

WBS Code	Work Package Name	Description	Deliverables	Responsible Party
1	Game Development	Complete the development of the game.	Fully Functional Game	Aasia Khalid, Muhammad Umar Sajid
1.1	Concept Design	Develop the core concept, narrative, and visual style.	Story Outline, Character Design, Art Style Guide	Aasia Khalid
1.1.1	Story Outline	Create a comprehensive outline of the game's narrative.	Detailed Story Document	Aasia Khalid
1.1.2	Character Design	Design main and supporting characters with backstories.	Character Profiles	Aasia Khalid
1.1.3	Art Style Development	Define the visual style and aesthetic of the game.	Art Style Guide	Aasia Khalid

1.2	Level Design	Design and implement game levels with puzzles.	Level Design Documents	Muhammad Umar Sajid
1.2.1	Chapter 1 Development	Create level design and mechanics for Chapter 1.	Playable Chapter 1	Muhammad Umar Sajid
1.2.2	Chapter 2 Development	Create level design and mechanics for Chapter 2.	Playable Chapter 2	Muhammad Umar Sajid
1.2.3	Chapter 3 Development	Create level design and mechanics for Chapter 3.	Playable Chapter 3	Muhammad Umar Sajid
1.3	Programming	Implement game mechanics and systems.	Game Prototype	Muhammad Umar Sajid
1.3.1	Gameplay Mechanics Implementation	Develop character controls, movement, and interactions.	Functional Game Mechanics	Muhammad Umar Sajid
1.3.2	AI Behavior Development	Create AI behaviors for enemies and NPCs.	AI Behavior Scripts	Muhammad Umar Sajid
1.3.3	User Interface Design	Design and implement the game's UI elements.	UI Mockups and Implemented UI	Muhammad Umar Sajid
1.4	Testing	Conduct thorough testing phases to ensure quality.	Test Reports and Bug Fixes	Aasia Khalid, Muhammad Umar Sajid
1.4.1	Internal Testing	Test game functionality internally to identify issues.	Internal Test Report	Aasia Khalid
1.4.2	Playtesting	Organize playtesting sessions with external testers.	Playtesting Feedback	Aasia Khalid

1.4.3	Bug Fixing	Address and resolve identified bugs and issues.	Bug Fix Log	Aasia Khalid, Muhammad Umar Sajid
1.5	Deployment	Prepare the game for release and support post-launch.	Game Release Plan	Aasia Khalid, Muhammad Umar Sajid
1.5.1	Final Build Creation	Compile and finalize the game for distribution.	Final Game Build	Muhammad Umar Sajid
1.5.2	Distribution on Platforms	Publish the game on selected platforms.	Live Game on Platforms	Muhammad Umar Sajid
1.5.3	Post-Launch Support Plan	Develop a plan for post-launch support and updates.	Post-Launch Support Strategy	Aasia Khalid
1.6	Marketing	Develop and execute marketing strategies for the game.	Marketing Materials	Aasia Khalid
1.6.1	Promotional Material Creation	Create promotional materials for marketing purposes.	Trailers, Screenshots	Aasia Khalid
1.6.1.1	Game Trailers	Produce engaging trailers showcasing gameplay.	Game Trailers	Aasia Khalid
1.6.1.2	Screenshots and Art Assets	Capture and prepare visual assets for promotion.	Visual Assets for Marketing	Aasia Khalid
1.6.2	Social Media Campaign	Plan and execute marketing strategies across social media.	Social Media Content	Aasia Khalid

1.6.2.1	Content Planning	Create a calendar for social media posts and content.	Content Calendar	Aasia Khalid
1.6.2.2	Engagement Strategy	Develop strategies to engage the audience.	Engagement Plan	Aasia Khalid
1.6.3	Press Kit Development	Create materials for media outreach.	Press Kit	Aasia Khalid
1.6.3.1	Press Release	Draft and distribute a press release for the game.	Press Release Document	Aasia Khalid
1.6.3.2	Media Contact List	Compile a list of media contacts for outreach.	Media Contact List	Aasia Khalid

QUALITY TEST CASES

QUALITY STANDARDS DEFINED

- Usability: Ensure smooth gameplay without technical interruptions.
- Performance: Maintain stable frame rates and responsive controls.
- Visual Aesthetics: Graphics should remain immersive and cohesive.
- Audio Quality: Audio effects should align with in-game actions and environments.

KEY DELIVERABLES TO TEST

- Gameplay Mechanics: Test character movement, interactions, and transitions.
- Graphics: Test visual quality and consistency.
- Audio Effects: Test alignment and quality of sound effects.

TEST CASES

Test Case ID	Description	Steps	Expected Outcome	Actual Outcome	Status
QC001	Verify smooth character movement	1. Launch the game. 2. Move the character in all directions. 3. Test jumping, climbing, and object interaction.	Character movement is responsive and without glitches.	Character movement is smooth.	Pass
QC002	Check responsiveness of interaction system	1. Approach an interactive object. 2. Perform interaction. 3. Repeat with various objects.	Interactions occur seamlessly without delay.	Interactions are responsive.	Pass
QC003	Test visual quality of animations	1. Play the demo. 2. Observe character animations during	Animations are smooth, visually appealing, and without distortion.	Animations are consistent.	Pass

		movement and interaction. 3. Focus on consistency in transitions.			
QC004	Assess loading times for transitions	1. Trigger transitions between gameplay areas. 2. Measure loading duration	Transitions should take no more than 3 seconds.	Transitions are fast (<2s).	Pass
QC005	Evaluate audio effects	1. Play the demo. 2. Listen to background sounds and interactive sound effects. 3. Check alignment with actions/events.	Audio is synchronized with actions but may need improvement for greater impact.	Audio is misaligned.	Fail

EVM TEST CASES

KEY METRICS TO TEST

- Planned Value (PV): Budgeted cost for work scheduled.
- Earned Value (EV): Budgeted cost for work performed.
- Actual Cost (AC): Actual cost incurred for work performed.
- Schedule Variance (SV): SV = EV - PV.
- Cost Variance (CV): CV = EV - AC.
- Schedule Performance Index (SPI): SPI = EV / PV.
- Cost Performance Index (CPI): CPI = EV / AC.

SCENARIOS TO TEST

- Evaluate budget and schedule adherence during the demo development phase.
- Identify deviations in resource allocation or progress.

TEST CASES

Test Case ID	Description	Inputs	Expected Outputs	Actual Outputs	Status
EVM001	Analyze cost variance	PV = Rs 450,000 EV = Rs 400,000 AC = Rs 430,000	CV = EV - AC CV = Rs 400,000 - Rs 430,000 = Rs -30,000 (Cost overrun).	CV = Rs -30,000 (Cost overrun detected).	Fail
EVM002	Assess schedule performance	PV = Rs 450,000 EV = Rs 450,000	SPI = EV / PV SPI = Rs 450,000 / Rs 450,000 = 1 (On schedule).	SPI = 1 (On schedule).	Pass
EVM003	Evaluate cost performance index	EV = Rs 400,000 AC = Rs 430,000	CPI = EV / AC CPI = Rs 400,000 / Rs 430,000 = 0.93 (Cost efficiency below target but manageable).	CPI = 0.93 (Cost efficiency below target but manageable).	Pass
EVM004	Calculate overall variance	PV = Rs 800,000 EV = Rs 750,000 AC = Rs 790,000	SV = EV - PV SV = Rs 750,000 - Rs 800,000 = Rs -50,000 (Behind schedule). CV = EV - AC = Rs -40,000 (Cost overrun).	SV = Rs -50,000, CV = Rs -40,000 (Schedule and cost deviations detected).	Fail

Evaluation Summary

The test cases for the "Dark Reflection" project highlight its strengths and areas for improvement. Gameplay mechanics, including character movement, interactions, and transitions, performed exceptionally well, ensuring a smooth and immersive player experience. Visual animations were consistent and appealing, and loading times for transitions met efficiency standards.

However, the audio effects require better synchronization with in-game actions to enhance immersion. Addressing this will improve the overall quality of the game.

In terms of project management, budget and schedule adherence show mixed results. While the schedule is on track with a Schedule Performance Index (SPI) of 1, a cost variance of Rs 30,000 and a Cost Performance Index (CPI) of 0.93 indicate slight inefficiencies in cost management. Additionally, schedule variance calculations highlighted minor delays that should be monitored to avoid larger setbacks.

Overall, the project demonstrates strong potential for success, with attention needed on audio refinement and tighter financial control. These adjustments will ensure "Dark Reflection" meets its goals and delivers a high-quality experience to players.