Project Overview:

Logline: "A competitive math strategy race. Race against an opponent to be the first to find a combination of four numbers that sum to the target".

Tek solve is a competitive systems-driven turn-based networked strategy game. Two players race against each other to find a combo of 4-numbers that sum to the target number. Think of it as a competitive, faster-paced *Mastermind* or *Wordle*, but with numbers on a grid. You and an opponent get the same target number, and it's a race to input the correct 4-number code first. Scan the grid, spot the pattern, and input your solution for a satisfying win. It's all about that "aha" lightbulb moment.

Main Design Philosophy: Emphasising player freedom and emergent gameplay while maintaining fairness.

Key Differentiator:

What makes Tek Solve different from other games such as *Wordle* or *Three's*?
- The race against a real opponent: Unlike static puzzles, every round is a unique, dynamic battle of wits (pun intended). The pressure of a live opponent creates thrilling, emergent moments.
- Spatial strategy on a grid: It's not just about the math that creates the 'fun' aspect; it's about visualizing paths and patterns on the grid, adding a layer of spatial reasoning absent from other code-breaking games. It's also about inferring the idea of how satisfying and exciting it feels to be smart *while* playing it, even if you're not a "math" whizz.

Target Audience:

This game targets users aged 16-28. This demographic is divided into two groups: the "*core fans*" between the age range (16-20) as well as the "*casual fans*" between the age range (20-28). The "core fans" refers to the group of young individuals that are also fans of competitive puzzle games such as *Puyo Puyo Tetris*, or *Speed Chess*. They are motivated by climbing ranks and mastering game mechanics. The "casual fans" on the other hand, refers to the group of older players enjoy games like *Wordle* or *Sudoku* but are looking for a dynamic and competitive game experience They play for shorter sessions but appreciate deep mechanics This demographic group was chosen because the game's core mechanic involves scanning the

grid to find the right number combo and the different paths to the solution. The game is designed to enhance problem-solving skills by presenting users with challenges that require strategic solutions representing different ways to solve through the grid. Players are encouraged to engage in brain-stimulating thinking to develop viable solutions that adhere to the game's rules while creating personalized experiences, highlighting the robust systems upon which the game is built.

According to Boone (2025), identifying a target audience extends far beyond understanding demographic information. It is equally important to define and understand player psychographics, which reveal the motivations behind their interests, values, and personality traits – explaining why they play. Understanding who your players are, what motivates them, and how to reach them effectively is crucial for successful game design (Boone, 2025).

Systems-driven gameplay is particularly effective at attracting audiences who enjoy emergent interactions, allowing them to explore the complexity and strategic depth of interactive systems. Players' pursuit of solving complex challenges through methods that allow freedom, and experimentation exemplifies the gameplay patterns that systems-driven design offers (Laidacker, 2016). This research informed my decision to target teenagers and young adults by building a game for players who love to find their own clever solutions to a tough problem.

Players within this demographic possess psychographic profiles rooted in seeking depth, replayability, and experimental freedom rather than following linear paths. This design philosophy resonates strongly with Gen Z, as they represent a demographic that seeks innovative problem-solving approaches – ones that aren't confined to rigid methodologies but allow for creative freedom and personal expression.
Furthermore, targeting this specific audience group also meant understanding that I’m targeting an audience (16-28) that is both digitally native and seeks meaningful mental challenges**.** Tek Solve is designed for players who have moved past simple timewasters and enjoy the deep satisfaction that comes from mastering a complex system.

Below are some of the personas created within the targeted demographic

Name and Surname: Thando Khumalo.
Age: 17
Occupation: High Scholar in Grade 11 at Bracken High School.

Persona 1:

Brief Interview Overview:

Thando, a 17-year-old high scholar is a girl that loves numbers. She takes Accounting , Pure Mathematics and Physics as her core subjects and enjoys problem solving in different contexts. Whether be in a finance and balancing sheets or within motion and acceleration. As a fanatic for numbers, she derives comfortability in dealing with numbers in any way , shape or form and thus engaging in activity that stimulates cognitive thinking would help her balance her studies with leisure. The love for numbers means that she plays games that are brain-stimulating such as Baba is You, 2048 & Three's

Key Takeaways and findings:

- As a Gen Z , she finds comfortability in convenience and the luxury of having access to numbers even beyond academia.
- The game could both be her leisure companion as well as academic 'teacher' apart from the ones she already plays bc Tek Solve offers math as the core mechanic with spatial strategy.

User Story on how the Tek Solve Game will aid her as young Gen Z:

- As a player, the game will aid her develop stronger intellectual skills, ones that are framed within a spatial grid layout, differentiating the game from other types of games she may be used to or familiar with.

- As a player, the game will also help her find appreciation for her core subject in ways that are not within academia, deepening her love for both her interest in numbers and the different ways they can be used to solve problems.

Figure 1: Persona 1 (Mofolo, 2025).

Name and Surname: Tshepiso Modiko.
Age: 21
Occupation: 2nd year Bcom Information Systems Students at Wits University.

Persona 2:

Brief Interview Overview

Tshepiso , a 21-year-old 2nd year student is a guy that went to an all boys H.S where he took IT as a subject. His introduction to information system was informed by the different ways in which data, people and processes work together to create information. He doesn't have that much gaming experience because he doesn't play games as often but he finds appreciation in the different entities that inform how something works. Some of the games he plays include Sudoku, Tetris and watching Kai Cenat's live stream of different game play-throughs.

Key Takeaways and findings:

- As a Gen Z , he finds interest in the way things interact with each other to achieve a specific outcome. This would make the game play experience of Tek Solve satisfying as he observes the interaction of the spatial grid with the movement system using the num-pad controls.
- Being immersed into the game could the beginning of many more gameplay sessions.

User Story on how the Tek Solve Game will aid him as young Gen Z:

- As a player, the game will aid him think about the connection of different entities and their interaction from a different context than what he is familiar with.

- As a player, the game will allow him to use the core mechanic the game operates with to apply it within the context of what he studies.

Figure 2: Persona 2 (Mofolo, 2025).

Name and Surname: Xhanti Mxenge.
Age: 27
Occupation: Game Designer Artist at a local game studio.

Persona 3:

Brief Interview Overview

Xhanti , a 27-year-old game enthusiasts is not a "newbie" to the gaming gaming space. From a young age, he played a lot of traditional physical games which caused him to sustain a lot of scars in his lower body. While not having access to any gaming courses in H.S, he proceeded to study games and their nature in his tertiary studies. This study informed his understanding of different gaming trends and how they influence game design in different ways.

Key Takeaways and findings:

- As an older Gen Z, his progression from no gaming knowledge towards a gaming career is telling of how much he knows about games during his undergrad studies.
- His experience with games could be a good opportunity for the game studio that made Tek Solve to bounce of ideas with him post-launch of the game.
- He plays games such as Hades, Marvel Rivals, Dis-honoured and Far Cry and uses Steam to obtain access to them.

User Story on how the Tek Solve Game will aid him as young Gen Z:

- As a player, the game will aid him to interact with a genre that he may or may not be familiar with, allowing for more informed feedback post-launch of the game.
- As a player, the game might spark ideas in the production of his own games and the design philosophy he can take away from interacting with Tek Solve.

Figure 3: Persona 3 (Mofolo, 2025).

Positioning & Branding:

Color Palette Choices:

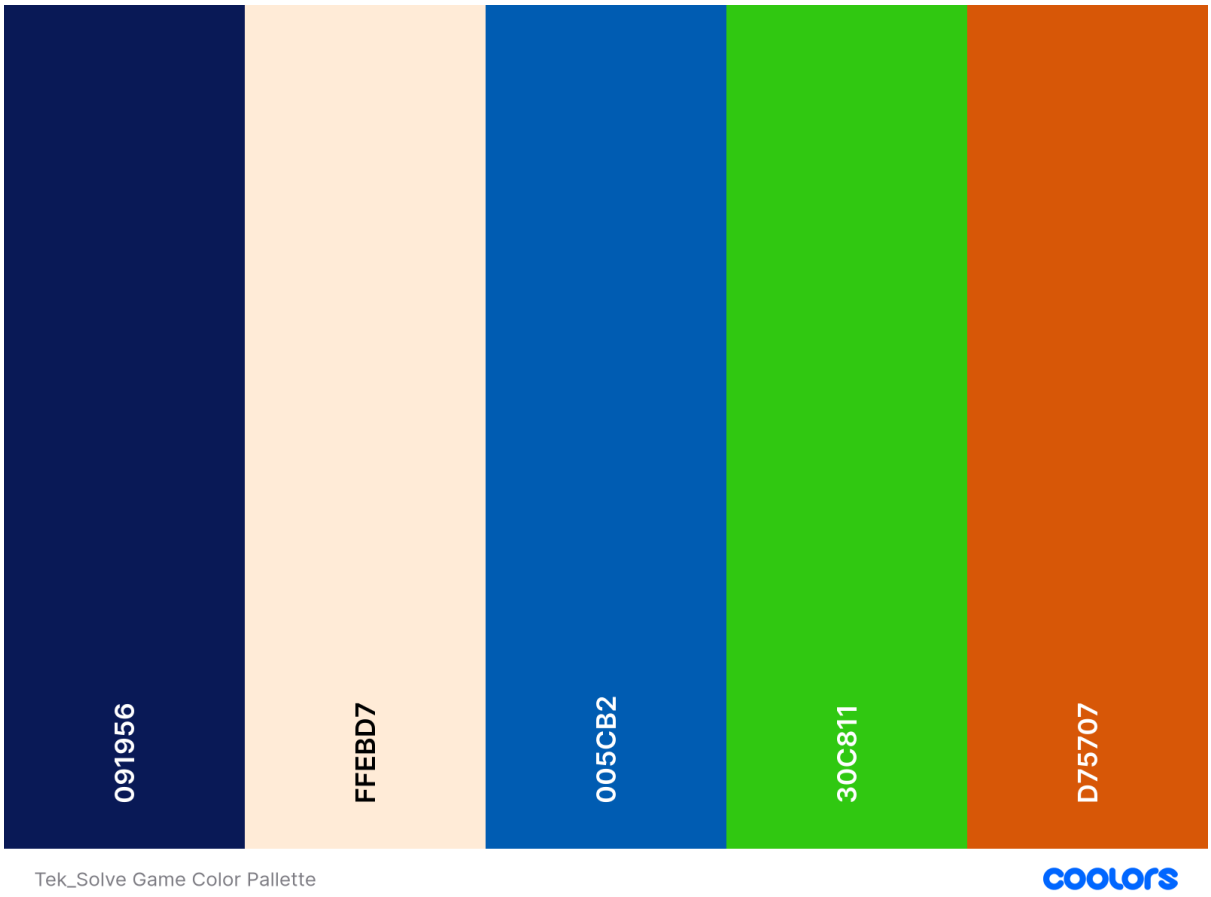

Figure 4: Tek Solve Colour Palette (Mofolo, 2025).

Main Logo Design:

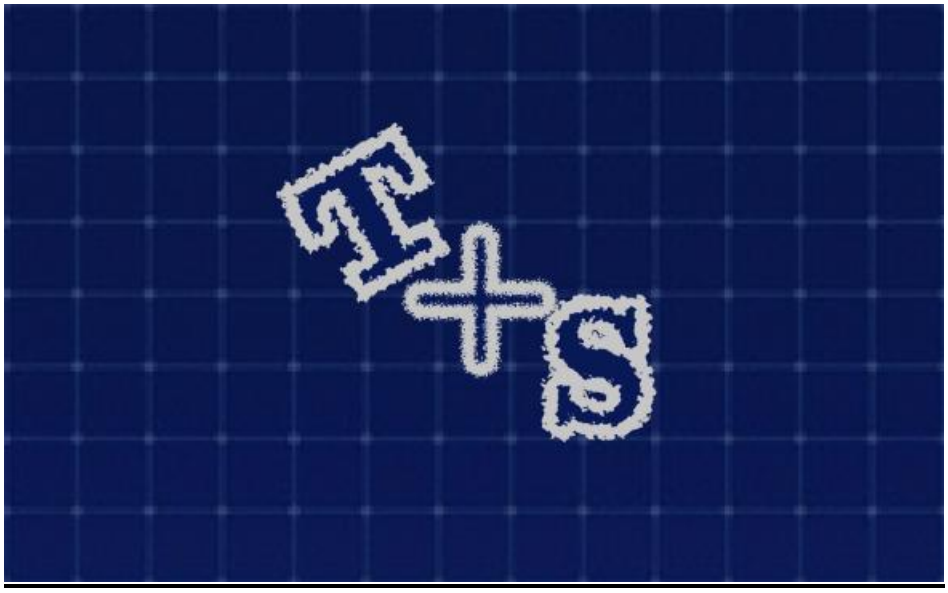

Figure 5: Initial Logo Design (2025)

Main Background Colour & Image Design:

To embody the "brain-stimulating" aesthetic, I selected Pen Blue (#091956) as the primary background colour, complemented by Antique White (#FF3BD7) grid lines that form the square grid layout. The contrast between the white grid lines and the deep blue background ensures the math symbols stand out prominently, effectively communicating the game's focus on a head-to-head puzzle race where you and an opponent race to crack the code first. This design approach reinforces the systems-driven nature of the gameplay while appealing to players who seek intellectual challenge.

Typography Explained:

I chose to use the **Monospace** for the logo because it captured the thematic essence of the math mechanic without looking “too niche” or “unpolished”. Not only is it easily readable, it also carefully designed for computer screens, making it easier accessible for usage on PCs.

For the overall game I chose to use the **Inter font with sizes 14-16** because it maintains legibility and is easier to read. Most importantly, it also accessible for users that may use screen-readers or who are colour-blind.

Art Style Explained:

The game employs a minimalistic pixel art style characterized by clean geometric forms and high contrast colour schemes, creating a digital art aesthetic that resonates with the targeted demographic and emphasizes clarity and systematic design. This art style is meant to be functional rather than decorative because the pixel-art aesthetic is meant to reinforce grid-

based gameplay while the clean minimalistic approach is meant to incite the clean logical thinking the game requires.

Below is the Num-pad control UI- mock-up as well as the main game screen:

Num-pad Controls:

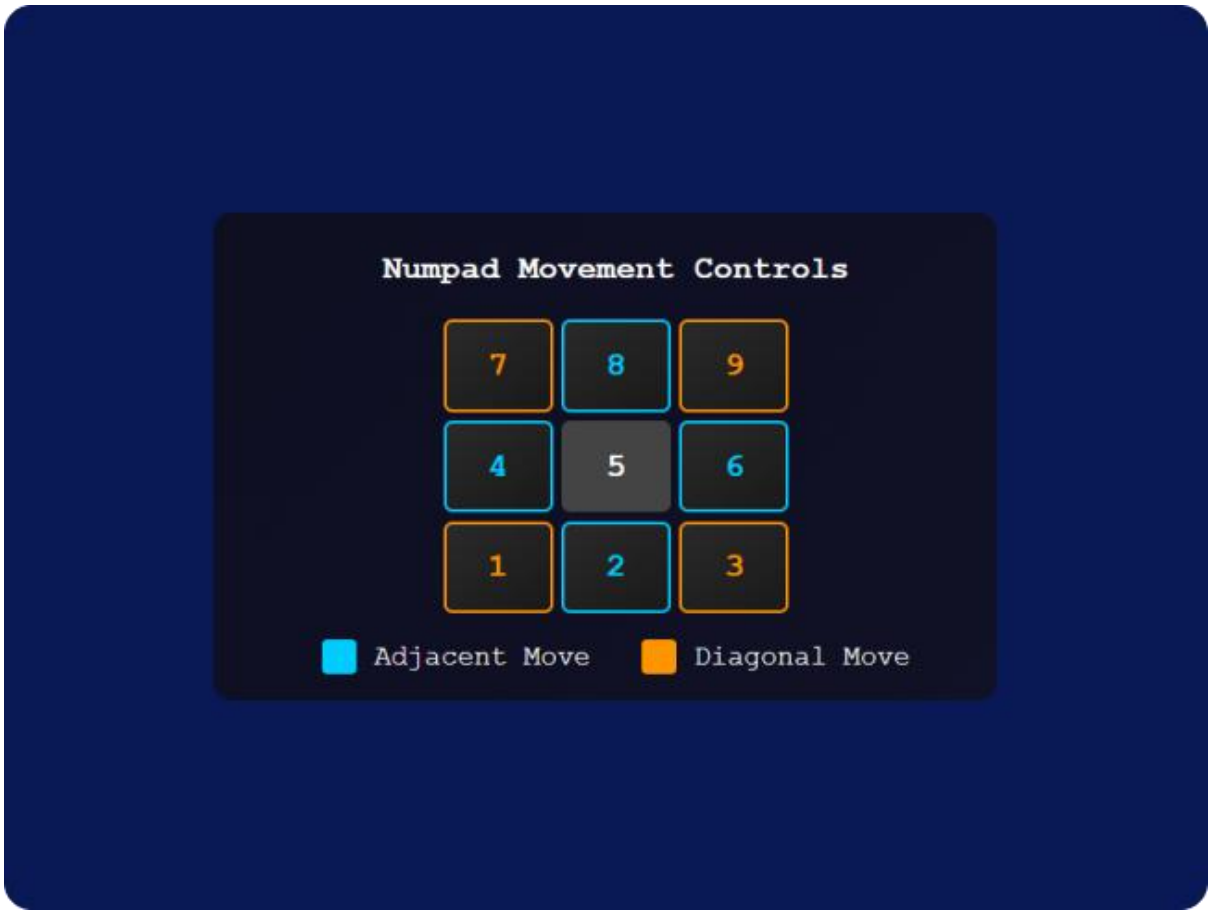

Figure 6: Num-pad Controls Map (Mofolo, 2025).

Main Game Screen:

Figure 7 : Main Game Screen (Mofolo, 2025)

Promotional Channels:

Owen (2020) identifies cross-channel marketing as one of the most effective strategies for targeting millennials and Gen Z consumers (Owen, 2020). This approach involves creating varied media content distributed across multiple platforms to maximize reach and engagement (Owen, 2020). For promoting Tek Solve, I will implement a cross-channel marketing strategy utilizing TikTok, Discord, YouTube, Reddit, and Twitter as interconnected platforms, where content on one platform complements and drives traffic to others, providing diverse forms of game information through different media formats.

As of September 2025, TikTok's primary user base consists of individuals aged 18-24, representing 27.2% of the US population (Duarte, 2025). This positions TikTok as the dominant platform for reaching Gen Z audiences within our 16-28 target demographic. Promoting Tek Solve through 21-34 second videos with compelling hooks in the first two seconds will maximise engagement and achieve broader reach across different player segments. Examples of content include featuring quick puzzle solutions, screen recordings of intense, close races set to energetic music to match the intensity. Moreover, videos with

hooks like: "POV: Can you solve it faster than me?" or "POV: The perfect comeback in 10 seconds and glimpses of various spatial pathfinding journeys can effectively showcase the satisfying gameplay elements of Tek Solve.

To cultivate a community around systems-driven gameplay, Discord emerges as the optimal platform. Research indicates that 44% of teenage gamers actively use Discord and Twitch, significantly higher than non-gaming teenagers or casual platform users (Gottfried, 2024).

Utilizing Discord as a promotional channel for Tek Solve offers multiple community-building advantages. The platform enables players to share strategic insights and viable gameplay approaches with one another, while simultaneously allowing developers to provide exclusive content, host regular events, and encourage user-generated content creation. This creates a valuable ecosystem that enhances player retention and engagement.

Examples of the usage of Discord in the context of Tek Solve include launching a "Puzzle of the Week" channel where you post a challenging target number and players compete to share the fastest solution. This tests gameplay and builds community as users can share their personal experiences of how they got to the solution.

YouTube serves as the ideal platform for comprehensive strategy guides and developer insights, offering longer-form content that explores gameplay mechanics in depth. Examples of promotional content in the context of Tek Solve will be creating a developer diary series explaining “systems-driven” design and interviewing other developers on that channel who break down the different forms of emergent scenarios the game has to offer.

Meanwhile, Reddit facilitates algorithm explanations and player-created challenges, making it particularly valuable for detailed discussions of personalized gaming experiences with Tek Solve. Additionally, Reddit provides an excellent platform for assessing post-launch success metrics through community feedback and engagement analysis. Examples of promotional content in the context of Tek Solve include targeting subreddits posts/threads that are systems-focused such as “r/playmygrame”, “r/puzzlevideogame” etc.

Below are some generic examples of Mock-up Twitter Posts to incite engagement from users, as part of the cross-channel campaign:

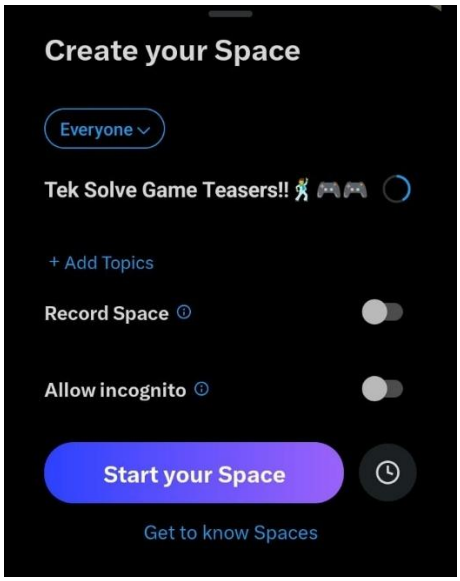

Figure 8: Twitter Space Promo Example Part 1 (Mofolo, 2025).

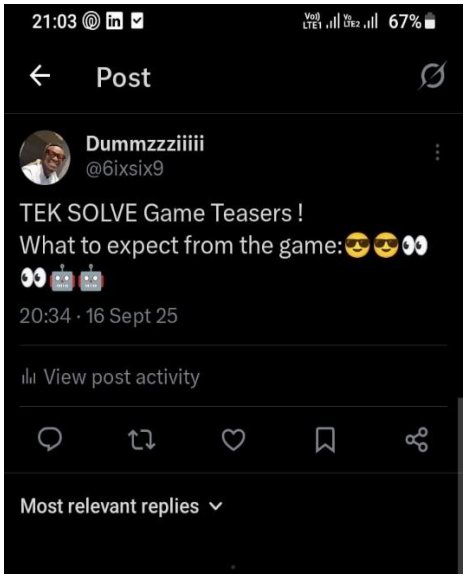

Figure 9: Twitter Post Promo Example Part 2 (Mofolo, 2025).

Platform Distribution:

Given that Tek Solve utilizes Num-pad controls for its movement system, PC emerges as the optimal platform for hosting the game. While not all PCs feature Num-pad keys, the game specifically targets laptops and desktop computers equipped with full numeric keypads. Recent research by Knezovic (2025) reveals that although mobile gaming remains the most popular platform globally, PC gaming has experienced significant growth in regions such as

Asia and Europe, with 40% of gamers still preferring PC gaming experiences (Knezovic, 2025).

For an indie game like Tek Solve, targeting PC gamers through distribution platforms such as Steam and GOG represents both a practical and strategic market decision. This choice extends beyond the inherent connection between platform compatibility and distribution channels — it reflects an intentional market-driven approach. Many successful systems-driven games, such as Dishonoured, are primarily PC-based titles that have found their audience through Steam's ecosystem.

Using Steam's wishlist feature and analysing data from similar systems-driven games will provide valuable insights for Tek Solve's development team. For example, using Steam's "Pre-launch metric: wishlist conversion rate", the goal could be to get as many qualified wishlist as possible before the game's release. The latter can then be compared with the post-launch metric where the retention rate is measured in the intervals of days.
This approach enables developers to understand player preferences within this gaming category and identify key features or improvements to incorporate in future game releases. Additionally, Steam's robust community features and user review system offer ongoing feedback mechanisms that can inform post-launch updates and expansions.

Project Timeline and Campaign Milestone:

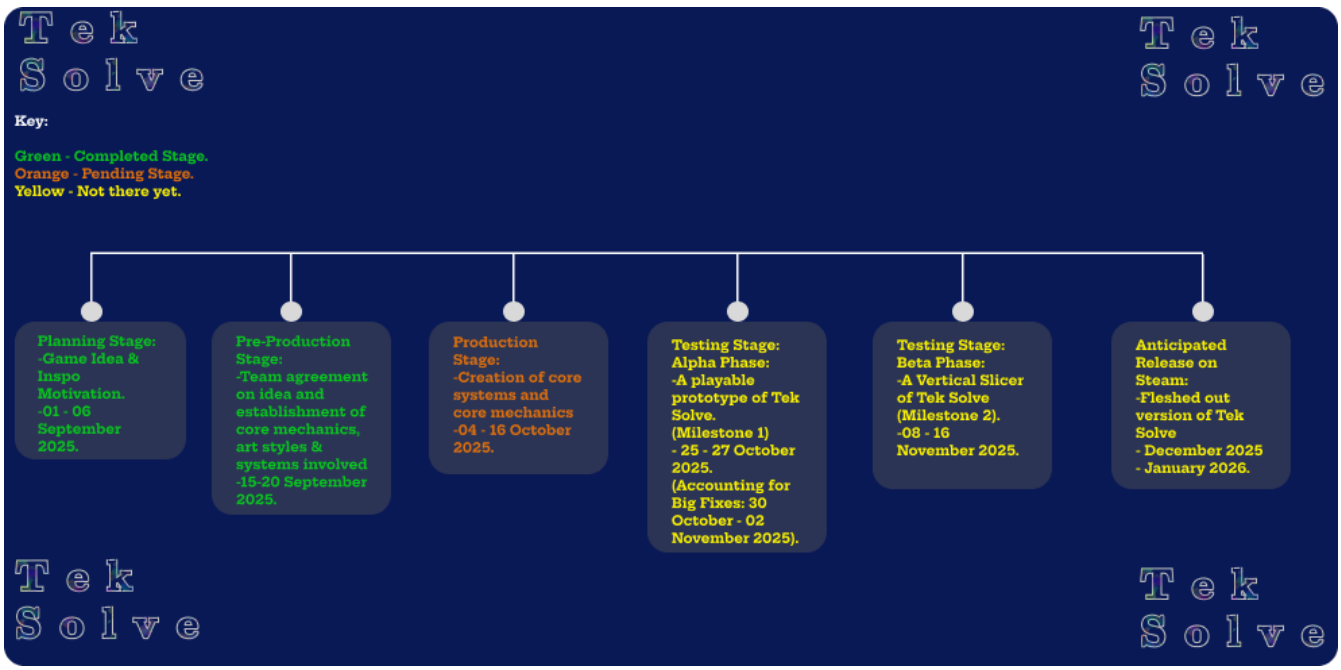

Figure 10: Tek Solve Development Timeline (Mofolo, 2025).

Budgeting and Resources:

Link to Budget spreadsheet:
https://1drv.ms/x/c/16932f0fa8da8fea/EdocwnWK5uhAnNi5lv8srtsBK-XnyXo607hQlo5hcrBiuw?e=RS06Uk

Success Metrics:

To measure Tek Solve's impact on users, I will implement quantitative metrics including retention rates, session length, playtime duration, social engagement metrics, and Monthly Active Users (MAU) rates (Pardilla, 2019). Monthly Active User tracking will be monitored through Steam's analytics platform, examining wishlist additions, download numbers, and session durations. A designated team member will oversee community management across Discord platforms and Steam analytics, monitoring player session lengths and average playtime data.

For an indie game like Tek Solve, understanding player engagement within the target demographic is crucial for capitalizing on current gaming trends and managing post-launch operations such as LiveOps. Madalin Craciun emphasizes in his research *Measure the Impact of Game Design Decisions by Starting with Player Outcomes* that game success stems from predefined outcomes that reflect positive player experiences (Craciun, 2020). He poses the critical question: "If we do a great job, what does that look like for the player?" (Craciun, 2020).

Defining player outcomes and expectations prevents development teams from creating without clear intent and subsequently searching for purpose afterward—a practice that leads to frequent pivoting and reduced team productivity (Craciun, 2020). Therefore, Tek Solve will measure impact and player outcomes by establishing clear player experience goals before official release. This approach will incorporate player analytics, structured playtesting sessions, and comprehensive interviews and surveys. These initiatives will be coordinated by the same team member responsible for Discord community management and retention rate monitoring, ensuring consistent data collection and analysis throughout the development process.

In conclusion, this project plan demonstrates that Tek Solve represents a viable and strategically positioned indie game concept with strong market potential. Through

comprehensive market research and industry analysis, the game's target demographic of 16–28-year-olds broken down into two groups has been carefully selected to align with both the clever head-to-head race to the solution and the preferences of digitally native audiences who value systems-driven, intellectually challenging gaming experiences.

Most importantly, the comprehensive impact measurement framework, incorporating both quantitative metrics and predefined player outcome goals, ensures that Tek Solve's development remains focused on delivering meaningful player experiences rather than pursuing directionless design iterations.

References

Boone, D. (2025). *Tyr Ads : How to Identify Your Game's Target Audience: A Practical Guide.* [Online]
Available at: https://tyrads.com/game-target-audience/
(Accessed: 17 September 2025).

Craciun, M. (2020). *Measure the Impact of Game Design Decisions by Starting with Player Outcomes.* [Online]
Available at: https://medium.com/amber-log/measure-the-impact-of-game-design-decisions-by-starting-with-player-outcomes-b4ccb370f865
(Accessed: 20 September 2025).

Duarte, F. (2025). *Exploding Topics : TikTok User Age, Gender, & Demographics (2025).* [Online]
Available at: https://explodingtopics.com/blog/tiktok-demographics
(Accessed: 19 September 2025).

Gottfried, J. &. S. O. (2024). *Teens and Video Games Today,* Washington DC: Pew Research Center.

Knezovic, A. (2025). *Gaming Industry Report 2025: Market Size & Trends,* United Kingdom : Udonis Marketing Agency.

Laidacker, A. (2016) 'Systems Are Everywhere', *GCAP* [Video]. Available at: https://www.youtube.com/watch?v=Gelpn4mksXQ&list=PL5KbKbJ6Gf9-SXDTilJyqGCrJ8OyL-aSf&index=11 (Accessed: 12 August 2025).

Mofolo, DMI. (2025) Tek Solve Visuals. Available at: https://www.figma.com/design/xrZXYuuvtDbWIlL8WnCmuP/Tek_Solve-Game-Deets?node-id=0-1&t=X9OIXDNqxMEt31TT-1 (Accessed: 02 September 2025).

Owen, V. (2020). *Pion : What are the best advertising channels to reach young people?.* [Online]
Available at: https://www.wearepion.com/blog-posts/what-are-the-best-advertising-channels-to-reach-young-people
(Accessed 17 September 2025).

Pardilla, B. (2019). *Elvtr : KEY METRICS IN GAME ANALYTICS: MEASURING AND OPTIMIZING GAME PERFORMANCE.* [Online]
Available at: https://elvtr.com/blog/key-metrics-in-game-analytics-measuring-and-optimizing-game-performance
(Accessed: 18 September 2025).