

The Ghost in the Machine: Automation Anxiety and the Crisis of Human Subjectivity in Kurt Vonnegut's *Player Piano*

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ABSTRACT

Kurt Vonnegut's *Player Piano* (1952) interrogates an ontological crisis where technocratic systems equate human value with functional efficiency. This study analyzes how total automation supplants both manual and cognitive labor, precipitating a survival redundancy characterized by the disappearance of meaningful work and the paradox of enforced leisure. By examining the erosion of human subjectivity through post-industrial labor theory and existential philosophy, the article demonstrates that the failure of the Ghost Shirt Rebellion reveals the deep internalization of efficiency-oriented logic. Ultimately, the novel gestures toward an alternative ethical framework grounded in non-utilitarian relationality and human imperfection, providing a foundational critique for the contemporary era of algorithmic governance.

KEYWORDS

Kurt Vonnegut; Automation Anxiety; Technological Dystopia; Existential Crisis; Technocracy; Post-Industrial Society.

1. INTRODUCTION

Automation anxiety has historically centered on the fear that machines will replace human labor. From the Luddite uprisings of the nineteenth century to contemporary concerns about artificial intelligence and large language models, technological displacement has repeatedly provoked economic and social unease. However, Kurt Vonnegut's *Player Piano* reframes this anxiety in a more radical register. The novel does not depict mass starvation or economic collapse. Instead, it presents a society materially secure yet spiritually vacant—a world in which automation succeeds too well.

Published in 1952, during the early Cold War era and the rise of corporate technocracy, *Player Piano* reflects Vonnegut's firsthand experience working at General Electric. The novel imagines an America divided between a managerial elite of engineers and the displaced majority rendered economically unnecessary by machines. Governed by the supercomputer EPICAC XIV, the system appears rational, efficient, and stable. Yet beneath its surface lies a pervasive sense of purposelessness.

This article contends that Vonnegut's critique is not directed at technology itself but at a value system that equates human worth solely with productivity and utility. In *Player Piano*, automation anxiety emerges not as fear of unemployment but as fear of irrelevance—of being unneeded, unseen, and functionally obsolete. The novel thus anticipates contemporary debates about AI by diagnosing a crisis not of labor markets but of meaning.

2. TECHNOCRATIC GOVERNANCE AND THE EROSION OF MEANING

This section examines the structural foundations of the technocratic society in *Player Piano*, where the pursuit of systemic efficiency necessitates the marginalization of human agency. By analyzing the physical and symbolic architecture of Ilium, this study illustrates how algorithmic governance transforms moral and political dilemmas into mere technical problems. The following analysis explores the mechanisms of spatial segregation and the centralized authority of EPICAC XIV, demonstrating how the internalization of technocratic logic inevitably leads to the erosion of individual purpose and the collapse of traditional social interdependencies.

2.1. Spatial Hierarchy and Algorithmic Authority

Kurt Vonnegut's *Player Piano* introduces its dystopia through a world of striking order. Ilium, New York-the novel's central setting-is spatially rational, economically efficient, and administratively seamless [11]. At first glance, it appears to embody the triumph of modern industrial civilization: production flows without friction, errors are minimized, and prosperity is statistically verifiable. Yet beneath this surface of technical perfection lies a more troubling reality. The very order that stabilizes Ilium also erases the human need to be necessary.

Ilium is physically divided into three distinct zones: the northwestern district housing managers and engineers, the northeastern Ilium Works complex dominated by automated machinery, and the southern Homestead area, where the majority of displaced citizens reside. The separation is both geographical and symbolic. The Iroquois River demarcates social hierarchy, and the bridge connecting the districts is described as practically unnecessary. If it were destroyed, "few daily routines would be disturbed" [15]. This observation signals more than urban planning efficiency; it reveals that interaction between classes has become structurally irrelevant. The system functions independently of human interdependence. This spatial arrangement reflects a broader technocratic ideology. Authority in Ilium is vested not in charismatic leaders or political representatives, but in technical expertise. At the center of governance stands EPICAC XIV, the supercomputer responsible for calculating production schedules, personnel assignments, and economic distribution. Decisions are presented not as moral or political choices but as computational outcomes. Because EPICAC operates through data, its authority appears neutral and incontestable. In this framework, power no longer speaks-it calculates.

Vonnegut roots this faith in technical rationality within the mythology of wartime success. During World War II, engineers and managers "learned to get along without their men and women," and "Democracy owed its life to know-how" [15]. The automation of production is framed as the miracle that won the war. Efficiency thus acquires patriotic and moral significance. Technical competence becomes not merely practical but virtuous[12]. Those who design and maintain machines inherit the aura of national salvation. The managerial elite does not simply operate the system; it believes itself ethically justified by historical triumph. This fusion of expertise and morality exemplifies what political theorists describe as technocratic governance-the rule of those who claim authority through specialized knowledge [7]. Maury Greenwald argues that in technocratic systems, legitimacy is derived from "technical competence" rather than public deliberation [8]. Decisions appear objective because they are expressed in quantitative terms. Vonnegut dramatizes this phenomenon through EPICAC's pervasive presence. The machine does not command citizens; it optimizes them. Yet optimization quietly replaces democratic agency.

2.2. The Paradox of Leisure and Simulated Labor

If technocratic order structures the external world of *Player Piano*, enforced leisure shapes its inner climate. Automation in Ilium has eliminated the necessity of human labor across nearly all productive sectors. Machines perform industrial tasks with flawless precision; EPICAC XIV regulates

distribution and planning; managerial oversight increasingly resembles ceremonial supervision. Material abundance is widely available. Yet the disappearance of labor produces a psychological crisis that permeates both the displaced population and the technocratic elite. Leisure expands, but purpose contracts.

The society Vonnegut imagines fulfills a long-standing industrial fantasy: liberation from toil. From nineteenth-century utopian socialism to twentieth-century automation discourse [11], technological progress was often associated with the reduction of work hours and the expansion of free time. In *Ilium*, that fantasy appears realized. Citizens enjoy housing, access to goods, and state-sponsored employment through the Reconstruction and Reclamation Corps. However, the daily lives of these citizens reveal an atmosphere of stagnation rather than fulfillment.

The Reconstruction and Reclamation Corps offers a telling example. Those unable to compete with machines are assigned to state labor projects that simulate usefulness. Roads are repaired, buildings are maintained, and minor infrastructure tasks are performed, though machines could accomplish these activities more efficiently. The Corps sustains the illusion of contribution. Participation functions as symbolic employment rather than economic necessity [5]. The displaced population therefore occupies a liminal space between productivity and redundancy [2]. They are sustained by the system yet excluded from its core functions. Thomas Burnett and Lucy Rollin describe this condition as “anti-leisure”, a state in which time is abundant yet drained of restorative or creative value [4]. Leisure ordinarily implies voluntary engagement and self-directed activity. In *Ilium*, time is structured by absence. Without recognized necessity, daily routines lack direction. Activities resemble placeholders rather than expressions of desire. The absence of externally required labor intensifies internal disorientation.

Vonnegut underscores this emptiness through scenes of habitual drinking and mechanical social rituals. Bars become central gathering spaces for Homestead residents. Alcohol offers temporary intensity within an otherwise flat emotional landscape. In one striking moment, a stranger casually recounts his son’s suicide, explaining that the young man “couldn’t find any good reason for being alive” [15]. The anecdote is delivered without dramatic emphasis, followed by a glance to gauge Paul’s reaction. The flatness of tone reveals how despair has been normalized. The society settles into emotional numbness.

This numbness reflects a deeper structural transformation. Historically, labor has provided more than wages. It has supplied identity, routine, recognition, and social integration. David Spencer observes that work “defines who we are and who we are able to become” within given institutional frameworks [13]. In *Ilium*, the collapse of meaningful labor removes this organizing principle without offering a coherent alternative. The result is existential drift.

The elite experience a parallel distortion of leisure. At the Meadows retreat, engineers and managers gather for annual celebrations that combine intoxication, statistical triumphalism, and theatrical performances. The event is presented as relaxation, yet its structure reveals another form of obligation. Participants recite production increases with pride—“31.7% times as many television sets... 98% of its helicopters...” [15]. Quantitative growth becomes ritual affirmation. The celebration reinforces the legitimacy of technocratic rule. Drinking at the Meadows follows an equally scripted pattern. Paul remarks that participants “drink and sweat, drink and sweat” for two weeks [15]. Later he notes that the aim has shifted toward performing drunkenness while remaining in control [15]. Even intoxication becomes calculated. The elite’s leisure mirrors their labor: disciplined, monitored, and competitive. Recreation functions as another domain for demonstrating allegiance to productivity culture.

This transformation of leisure into performance aligns with contemporary analyses of post-industrial society. Nick Srnicek and Alex Williams argue that individuals increasingly inhabit systems “they do not understand,” generating feelings of drift and disconnection [14]. In *Player Piano*, such drift is magnified by the removal of structural necessity. Citizens no longer struggle against scarcity. They struggle against vacancy.

3. TECHNOCRATIC GOVERNANCE AND THE EROSION OF MEANING

Building upon the socio-structural critique, this section investigates the psychological and existential consequences of living within a fully automated environment. It focuses on the process of alienation, whereby human skills are externalized into machine code, rendering the individual a “ghost” in a world of mechanical performance. By interrogating the metaphor of the player piano and the subsequent trajectory of the Ghost Shirt Rebellion, this discussion reveals the profound difficulty of reclaiming human dignity when the very language of resistance remains trapped within the efficiency-oriented logic of the prevailing system.

3.1. Skill Externalization and the “Player Piano” Metaphor

If technocratic order organizes society and enforced leisure erodes direction, alienation defines the lived experience of individuals within Ilium. In *Player Piano*, automation restructures labor, authority, and identity at once. The result extends beyond economic displacement. Human beings experience estrangement from their work, from social recognition, and from their own sense of agency [6]. Vonnegut portrays alienation as diffuse and atmospheric, embedded in everyday interactions rather than confined to moments of crisis.

Classical theories of alienation, particularly those derived from Marx, emphasize the worker’s separation from the product of labor and from the process of production. In industrial capitalism, laborers produce goods they do not own and perform tasks fragmented into mechanical repetition. In Ilium, automation intensifies this separation by eliminating the laborer from production altogether. Machines now execute the process, design improvements, and monitor performance. The human presence recedes to supervisory margins. Shoshana Zuboff’s analysis of automated systems clarifies this transformation. She argues that automation transfers knowledge from embodied practice into formalized, informational structures (Zuboff 47). Skill becomes codified; tacit understanding becomes algorithm. In *Player Piano*, such codification deprives workers of experiential mastery. The system remembers and performs more reliably than any individual. Human competence, once expressed through action, becomes redundant data. This redundancy reshapes social hierarchy. Engineers and managers occupy privileged positions, yet even they encounter diminished autonomy [9]. Paul Proteus exemplifies this paradox. As manager of the Ilium Works, he appears powerful, yet his authority operates within constraints defined by EPICAC XIV. Production targets, labor assignments, and strategic planning emerge from computational output. Paul enforces decisions he did not originate. His professional identity rests on maintaining equilibrium rather than exercising creative control.

Paul’s recurring sense of detachment reflects this condition. He moves through meetings and ceremonies with muted skepticism. During one interaction, he experiences an “annoyed, bored, or queasy” reaction to his surroundings [15]. The emotional vocabulary suggests discomfort without clear cause. Alienation in Ilium does not erupt into dramatic breakdown; it manifests as persistent unease. The failed resignation scene crystallizes the erosion of agency. When Paul declares his intention to leave, his superiors interpret the statement as strategic maneuvering. Laughter replaces acknowledgment [15]. His attempt to assert autonomy becomes absorbed into institutional expectation. Lara Abraham describes similar dynamics within contemporary digital governance, where systems reinterpret individual actions through predictive frameworks [1]. In Ilium, dissent struggles to register as authentic because the structure assumes optimization rather than moral choice.

Alienation also pervades the displaced population. Residents of Homestead occupy a world shaped by absence. Their former trades and skills have lost economic relevance. Government programs supply maintenance tasks, yet these assignments function as symbolic placeholders. The gap between capacity and necessity widens. David Blacker characterizes such populations as “superfluous” within advanced capitalist systems, deprived of meaningful integration [3]. The term resonates strongly with

Vonnegut's depiction of the "Reeks and Wrecks", whose social marginalization reflects structural obsolescence [9].

Conversations in bars and communal spaces reveal this estrangement. One character recounts his son's suicide with restrained affect, noting that the young man could find no compelling reason to live [15]. The anecdote surfaces in casual dialogue, suggesting normalization of despair. Emotional detachment becomes a coping mechanism within a society that offers sustenance yet withholds necessity.

Alienation further appears in the realm of education and testing. Children undergo standardized assessments that determine their future roles. Success leads to managerial or technical tracks; failure channels individuals into Homestead. Meritocratic rhetoric frames these outcomes as objective measurement. Magali Larson observes that professional systems often naturalize hierarchy through credentialing mechanisms [10]. In Ilium, testing converts human potential into numerical ranking. Identity is shaped by scores long before adult agency emerges. The result is anticipatory alienation. Young people internalize evaluation as destiny. Those assigned to lower tiers confront a future stripped of recognized contribution. Resentment simmers beneath compliance. The sense of being evaluated by machines fosters distance from self-determination. Individual aspiration becomes subordinate to algorithmic judgment.

Within the technocratic elite, alienation takes subtler forms. Anita Proteus channels ambition through social climbing, measuring fulfillment by her husband's career trajectory. Her investment in status reflects a society where prestige substitutes for purpose. Recognition depends on proximity to power rather than intrinsic engagement. Relationships acquire strategic dimensions, reinforcing the primacy of institutional hierarchy. Phineas Finnerty's trajectory provides another lens. Once a celebrated engineer, he grows increasingly disillusioned with the mechanization of creativity. His intellectual gifts contributed to the displacement of others. Over time, awareness of this complicity destabilizes his identity. He oscillates between irony and agitation, signaling an unresolved conflict between technical mastery and moral unease. His alienation differs from Homestead residents' exclusion; it arises from participation in a system whose consequences he can no longer justify.

The metaphor of the player piano captures this layered estrangement. Rudy Hertz's reaction to the automated instrument-its music feels "kind of creepy", as though a ghost were performing [15]-illuminates the emotional dimension of technological substitution. The machine replicates artistry with flawless precision. Human presence lingers as spectral residue. The performance evokes admiration alongside discomfort. The ghost signifies displaced embodiment: expression detached from performer.

This spectral quality extends to social relations. Individuals move through routines scripted by institutional expectations. Engineers recite production increases at the Meadows; Homestead residents fulfill maintenance quotas; managers review computational reports. Activity persists across domains. Yet engagement appears muted. David Spencer emphasizes that work shapes personal identity and social integration [13]. When that integrative function weakens, fragmentation follows. In Ilium, fragmentation occurs quietly, diffused through everyday compliance. Alienation in the machine age therefore differs from earlier industrial forms. In factories of the nineteenth century, laborers confronted exploitative conditions and visible authority. In Ilium, authority is distributed through systems. Comfort coexists with estrangement. The absence of overt coercion complicates resistance. Citizens recognize dissatisfaction yet struggle to identify its source. Machines do not insult or threaten; they outperform. Nick Srnicek and Alex Williams argue that contemporary subjects inhabit infrastructures "they do not understand", generating a sense of disconnection from the systems that govern them [14]. Vonnegut anticipates this condition. EPICAC's calculations remain opaque to most citizens. Outcomes appear inevitable. When responsibility diffuses into algorithmic process, moral accountability becomes abstract.

This abstraction affects language itself. Conversations often circle around productivity metrics and institutional achievements. Quantitative vocabulary displaces qualitative reflection. Even celebration at the Meadows revolves around percentage increases and output comparisons [15]. Human emotion is mediated through data. The lexicon of efficiency permeates daily life.

Alienation thus operates across multiple dimensions: economic redundancy, managerial constraint, educational sorting, emotional detachment, and linguistic transformation. Each reinforces the others. The cumulative effect shapes a society that functions smoothly while hollowing out subjective depth. Erich Fromm's concept of the human need for relatedness and transcendence illuminates the psychological stakes. Individuals seek connection and creative agency. Automation in Ilium fulfills material requirements while constraining avenues for creative expression. The desire for transcendence finds limited outlets. Some characters turn toward alcohol, others toward satire or private rebellion. None discover stable resolution within the prevailing order.

Vonnegut's *Player Piano* explores alienation as an ironic byproduct of systemic success. In a technocratic order that favors efficiency over human agency, the displacement of skill by flawless automation creates a vacuum of relevance, where material prosperity masks a deep existential drift. This estrangement-woven into the fabric of daily routine-severes the link between identity and competence, eventually transforming diffuse dissatisfaction into the collective resistance of the Ghost Shirt Society. Ultimately, the novel serves as a prescient meditation on the fragility of human dignity in a world where machines have surpassed the need for human necessity.

3.2. The Ghost Shirt Rebellion and the Persistence of Efficiency

By the time the Ghost Shirt Society emerges in *Player Piano*, alienation has already permeated every stratum of Ilium. Technocratic order stabilizes production, enforced leisure erodes purpose, and automation displaces embodied skill. The rebellion therefore arises from accumulated estrangement rather than sudden outrage. It represents an attempt to restore necessity, agency, and recognition within a society that has rendered human contribution secondary to machine performance.

The name "Ghost Shirt" carries historical resonance. It alludes to the nineteenth-century Native American Ghost Dance movement, whose adherents believed ritual garments would shield them from bullets and restore a vanishing world. Vonnegut's appropriation of this imagery signals both desperation and spiritual yearning. The members of the Ghost Shirt Society seek protection against erasure. They are social ghosts within a system that no longer requires them. The metaphor underscores the psychological dimension of their revolt: they aim to reclaim presence in a landscape that has rendered them spectral. The Society gathers engineers, displaced workers, and intellectual dissidents. Among its leaders are figures such as Lasher and Finnerty, who recognize that technocracy has absorbed political power into computational systems. Their critique centers on the moral vacuum created by optimization. Production increases, yet human beings drift. The group frames its cause as restoration of dignity through the reassertion of human labor.

Yet from its inception, the rebellion reveals structural contradictions. One of its most ironic decisions involves consulting EPICAC XIV to draft its manifesto. The rebels ask the supercomputer to compose a statement explaining why machines should be dismantled. This act encapsulates their predicament. Even resistance depends on the computational authority they oppose. The machine becomes both adversary and instrument. Vonnegut's satire exposes the difficulty of articulating dissent within a framework dominated by algorithmic logic. Nick Srnicek and Alex Williams argue that contemporary infrastructures often shape the very terms of critique directed against them [14]. In *Player Piano*, EPICAC defines efficiency, organizes production, and structures social mobility. When rebels rely on its calculations to articulate grievance, they reinforce its centrality. Their language emerges through the same rationality they contest. The system's conceptual dominance limits the imagination of alternatives.

The uprising itself unfolds with symbolic intensity. Rebels storm industrial facilities, smash machines, and celebrate the physical dismantling of automated equipment. The destruction appears cathartic. Years of suppressed frustration erupt in visible action. For a moment, human agency reasserts itself through force. The spectacle disrupts the calm surface of technocratic order. However, the rebellion's trajectory quickly reveals its fragility. After destroying machinery, participants begin repairing it. Initially, repairs are framed as demonstrations of competence. The rebels seek to prove that humans retain superior skill. Yet as they restore equipment, pride surfaces. The satisfaction of technical mastery resurfaces. Machines begin functioning once more. The impulse to fix overwhelms the impulse to abandon. This development illustrates the depth of internalized technocratic values. David Spencer emphasizes that work shapes identity and self-conception [13]. For engineers within the rebellion, technical repair constitutes self-expression. Their skills are intertwined with machine systems. Destruction negates their expertise; restoration reaffirms it. The logic of efficiency, once internalized, persists even in opposition.

The underclass participants confront a parallel tension. Many have longed for recognized contribution. During the uprising, they experience collective purpose. Shared action generates belonging absent in Homestead. Yet sustained reconstruction of society requires organizational capacity and alternative economic vision. The Ghost Shirt Society lacks a coherent plan for post-automation governance. Its manifesto condemns technocracy without articulating viable replacement structures. David Blacker's concept of superfluity illuminates this limitation. Populations rendered economically unnecessary struggle to reinsert themselves into systems structured around productivity [3]. The rebels' demand for meaningful labor confronts a society optimized for minimal human intervention. Without redefining value beyond efficiency, dismantling machines alone cannot secure long-term transformation.

Paul Proteus's role in the rebellion further complicates matters. His participation signals elite disillusionment. Yet his motivations remain ambivalent. He oscillates between moral conviction and personal confusion. When authorities interrogate him, he provides answers that reflect both sincerity and detachment. His inability to articulate a fully developed alternative mirrors the movement's broader uncertainty. The state's response to the rebellion remains measured rather than brutal. Authorities arrest leaders and restore order with relative speed. The absence of extreme repression reinforces the system's resilience. Technocratic governance relies on administrative containment rather than spectacle. Once key figures are removed, production resumes. Social routines reestablish themselves. Shoshana Zuboff notes that automated systems often create environments in which individuals become dependent on infrastructures they do not fully control [16]. In Ilium, citizens rely on machines for distribution of goods, energy, and communication. Total dismantling would require enduring severe disruption. The rebels' willingness to repair equipment reflects recognition of this dependency. Survival remains intertwined with automation.

The symbolic arc of the Ghost Shirt rebellion thus moves from defiance to reabsorption. The act of destruction briefly exposes vulnerability within technocratic order. The subsequent restoration of machinery demonstrates the endurance of its values. Efficiency regains primacy. Human beings resume supervisory roles within the same structural framework. Vonnegut refrains from portraying this outcome as purely tragic. Instead, he presents it as revealing. The failure of resistance underscores the depth of cultural attachment to productivity. Even those marginalized by automation measure worth through technical competence. The ideology of efficiency has penetrated imagination as well as infrastructure. Erich Fromm's analysis of human needs provides additional insight. Individuals seek belonging, creativity, and significance [4]. The rebellion offers belonging and action. Its collapse exposes the difficulty of sustaining creativity outside established systems. The participants confront a void of alternative meaning. Machines reenter daily life because they supply structure and predictability.

The Ghost Shirt episode also reframes the metaphor of the player piano. Earlier, Rudy Hertz sensed a ghostly presence within automated music [15]. During the uprising, humans attempt to reclaim the

instrument. Yet when they repair machines, the ghost returns to its prior state. The spectral quality shifts from machine to human. Participants risk becoming ghosts within their own rebellion, overshadowed by the systems they rebuild. Vonnegut's portrayal anticipates contemporary debates about technological dependency. Calls to dismantle digital infrastructures often confront practical reliance on those same systems. Resistance requires reimagining value beyond efficiency. In *Player Piano*, such reimagining remains incomplete. The rebellion channels frustration yet lacks sustained philosophical foundation. Magali Larson's discussion of professional authority suggests that expertise becomes self-reinforcing within institutional structures [10]. Engineers derive identity from technical mastery. Abandoning machines would entail relinquishing status and self-concept. Repairing them preserves continuity. The gravitational pull of expertise proves stronger than the impulse toward radical rupture.

The Ghost Shirt rebellion's final irony lies in its inability to transcend the technocratic ethos it opposes; by attempting to prove human worth through superior efficiency, the rebels inadvertently validate the productivity metrics that marginalized them. Vonnegut demonstrates that dismantling machinery serves as a superficial remedy for alienation while the underlying value system-equating dignity with measurable output-remains intact. Because the resistance remains bound to the logic of competence, the uprising merely exposes the difficulty of disentangling identity from industrial infrastructure. Ultimately, *Player Piano* suggests that liberation from automation demands a fundamental transformation of ideals-shifting focus toward unquantifiable human elements like imperfection and relationship-as the mere reactionary destruction of devices fails to provide new societal coherence.

4. CONCLUSION

The enduring relevance of *Player Piano* lies in its identification of a crisis of human necessity that transcends simple technological displacement or economic collapse. Vonnegut frames automation anxiety as an ontological condition characterized by the fear of becoming superfluous within systems designed for optimization. In a world where machines outperform human beings across domains of labor and management, value systems grounded entirely in productivity eventually exclude humanity itself. The central inquiry of "What are people for?" remains unanswered by a technocratic logic that can optimize resources but cannot articulate a conception of dignity independent of utility. The failure of the Ghost Shirt rebellion underscores the resilience of this order, as even the rebels struggle to redefine value beyond the efficiency metrics they have deeply internalized. Meaningful existence, therefore, appears to reside in minor acts of embodied presence and relational intimacy that lie beyond the reach of algorithmic calculation. Ultimately, Vonnegut suggests that avoiding existential unease in an automated world requires shifting the societal focus from optimization to a conception of humanity rooted in shared vulnerability and unquantifiable creativity.

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