PROPOSAL

On

BIS HACKATHON

BIS-WISE

Know the Standards, Pick the Best

Submitted To: Bureau of Indian Standards (BIS)

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PROBLEM STATEMENT: Design and development of a platform for organizing online activities, games to develop interest, knowledge and awareness on Indian standards and its importance for ensuring quality and safety among the general public and BIS stakeholders.

OBJECTIVES

1. Raise Awareness of BIS Standards

Educate players about the importance of BIS standards in product quality and safety, making them more conscious and informed consumers.

2. Engage Players through Interactive Learning

Create a fun and engaging environment where players can learn BIS standards through practical, real-world scenarios like grocery shopping.

3. Promote Practical Application of BIS Knowledge

Enable players to apply their BIS knowledge in real-time decision-making, ensuring they retain and use what they learn in everyday life.

4. Enhance Decision-Making Skills

Provide feedback and evaluations that help players understand their choices, improving their ability to select safe, healthy products in line with BIS guidelines.

5. Boost Awareness and Reach

By incorporating BIS knowledge into a game format, increase the reach and effectiveness of standard awareness compared to traditional methods, making the learning experience more memorable and impactful. This way, the game not only tests players' skills but also promotes meaningful learning that leads to higher BIS awareness in a fun, engaging manner.

IDEA

INTRODUCTION

Our pixelated game introduces to the Bureau of Indian Standards (BIS) by immersing them in a fun and educational environment. It combines learning with gameplay to ensure that it's easy to understand and apply BIS quality standards in real-world situations.

HOW IT WORKS

- **Workshop Learning**:

Players participate in interactive virtual workshops that introduce them to the essential BIS standards, covering areas such as quality, safety, and compliance.

- **Supermarket Challenge**:

After completing the workshop, players are immersed in a virtual supermarket where they must apply their newly acquired knowledge to choose products that meet BIS standards. Their goal is to make informed purchasing decisions.

- **AI-ML Feedback System**:

Upon completing a level, an AI-powered feedback system evaluates the player's decisions, offering personalized insights. The system explains why certain choices were correct or needed improvement, helping players better understand BIS standards.

- **Level Progression**:

Players who successfully choose BIS-compliant products move to more challenging levels, facing increasingly complex scenarios with shorter time limits. Those who struggle will return to the workshop for additional guidance and practice.

- **Chatbot Assistance**:

A built-in chatbot is available throughout the game, ready to answer any general questions players may have about BIS standards, the game itself, or other related topics. The chatbot serves as an interactive guide, offering helpful explanations and clarifications to enhance the learning experience.

STORY LINE

Workshop at School

At a school workshop, a child is introduced to the significance of BIS (Bureau of Indian Standards) and how to identify products that comply with safety and quality guidelines. The session is hands-on, focusing on everyday items like toys, food, and household goods. The child learns how to recognize the BIS mark, which assures that a product meets the necessary safety and quality standards. The workshop's practical activities help the child easily grasp why these standards matter and how to check for them while shopping.

Applying the Learning at Home

Excited after the workshop, the child enthusiastically shares what they've learned with their mother. They explain how to ensure products are safe and of good quality by checking for the BIS mark. Impressed with the child's knowledge, the mother suggests, "Since you know so much now about choosing safe products, why don't you help me with today's shopping?"

The child, eager to put the knowledge into action, happily agrees and prepares to apply these lessons during their shopping trip.

At the Supermarket

Upon reaching the supermarket, the child immediately starts selecting products, applying the knowledge gained from the BIS workshop. This turns into a fun, game-like challenge, where the child must make informed decisions by identifying products that meet the required standards. As they progress, the tasks become more complex, gradually building on what they've learned.

- **Early Levels**: The child starts by selecting basic products, such as a toy or a food item, ensuring each has the BIS mark. A timer adds urgency, encouraging quick decisions while reinforcing familiarity with the certification. This level helps the child get comfortable identifying the BIS mark on a limited number of items.
- **Intermediate Levels**: As the game progresses, the child faces increased difficulty. They must now choose a larger variety of products, including items like electronics, and the time allowed decreases. The child needs to ensure that each product meets BIS standards. This level challenges the child to make faster, more informed choices while managing different types of products.
- **Advanced Levels**: The final stages bring more complexity, where the child must handle multiple product types, each requiring careful inspection for BIS certification. Time constraints become tighter, pushing the child's ability to recall and apply what they've learned across a diverse mix of products. These levels ensure the child is well-prepared to make smart, safe choices in more challenging situations.

Feedback and Evaluation

At the end of each level, the child's choices are evaluated, with feedback provided on their performance. The feedback details which products met the BIS standards and explains why others did not. This helps the child understand their mistakes and improves their decision-making for future levels.
If the child makes the correct selections, they move on to more difficult levels. If not, they return to a "workshop" in the game for further learning before retrying the level. This system promotes continuous learning and growth.

Additionally, a chatbot is available throughout the game to answer any questions the child might have, ensuring they can get help whenever they need it, which makes learning more effective and supportive.

IMPLEMENTATION PLAN

Phases of Development

1. **Research and Ideation**:

The team initiated the project by conducting various information and research. about BIS product standards and functioning and covered various examples from electronics, machinery, food items, etc. After this, detailed discussions were held to identify, like, how some items/products are better than others in terms of materials they are made of, labels, packaging and how better Items/products can be identified. These details are later simplified, and the thought of an idea to gamify the whole thing and decided to make role-playing game where a character learns about the standards and the user is helping to buy good items and products and prepared a storyline.

2. **Prototype Development:**

The team decided to build an open-world game with many buildings and structures. according to the storyline and the standards of BIS. Implemented a level-score system, tasks, and inventory. The character can enter any building and can perform specified tasks, and based on the tasks the user is evaluated and given a score and if the player score is more than the minimum score required to complete the level than the player is promoted to above level. The player is evaluated on the standards like good the items purchased our, are there any better alternatives that are missed. If the score is less than, the player has to play the level again. We created simple UI elements like houses and buildings, a moveable character, a start interface and building interiors.

3. **Launch:**

The game will be released by the team after more refinement on the prototype on the basis of the feedbacks. Improvements will focus on overall user experience, game mechanics and educational content.

Cloud Platforms like AWS will be used to host the game. These platforms and use of load-balancing will allow us to scale this project to handle large user base.

Long-Term Vision

The game will get multiple updates based on the standards of BIS and the feedbacks. The game could include AI based feedback where the player will get to know when and where they are wrong with the decision and will help the player to improve their knowledge on the standards. More difficulties and tasks can be introduced. By using cloud infrastructure, more efficient database management and improved optimizing techniques, the game will be capable of handling large and growing user base, ensuring smoother performance.

With each iteration, the game will educate the users more effectively while maintaining a fun and interactive experience.

Hardware and Software Requirements

Hardware Requirements:

Processor: Minimum: Dual-core CPU (e.g., Intel Core i3 or equivalent).

RAM: Minimum: 2 GB.

Graphics: Minimum: Integrated graphics (e.g., Intel HD Graphics) Storage: Minimum: 500 MB of free disk space.

Display: Minimum: 1280x720 resolution.

Internet Connection: Minimum: 512 Kbps.

Software Requirements:

Operating System: Minimum: Windows 7, macOS 10.10, or any modern Linux distribution.

Browser (For Web-Based Version): Minimum: Any modern browser (e.g., Chrome, Firefox, Safari) that supports basic HTML5 and WebGL rendering.

Graphics API: Minimum: OpenGL 2.0 or DirectX 9

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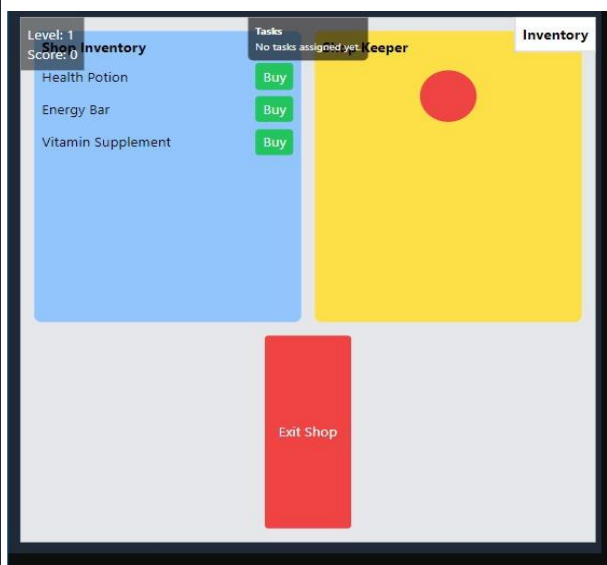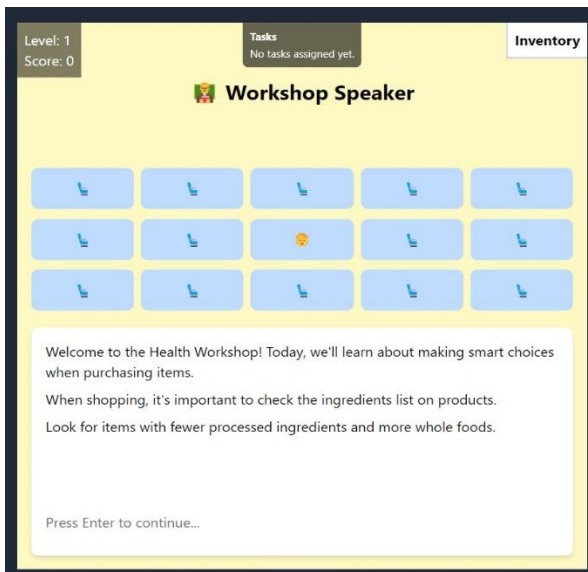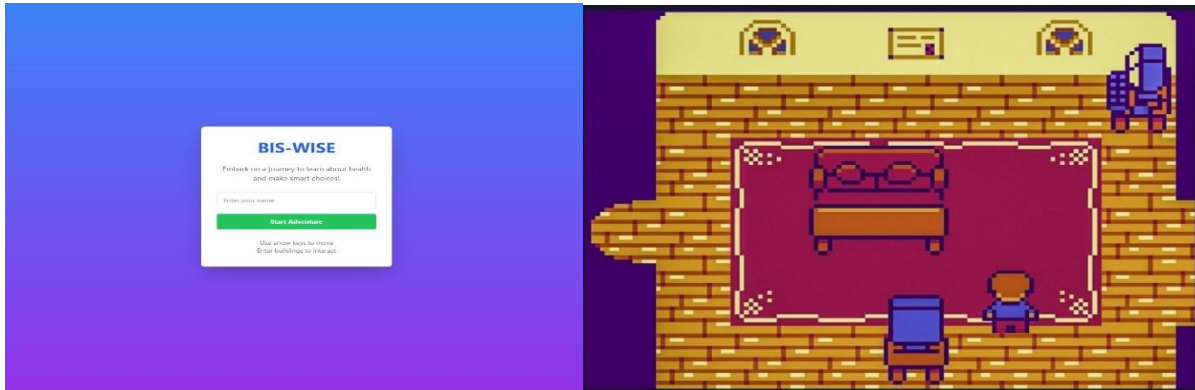
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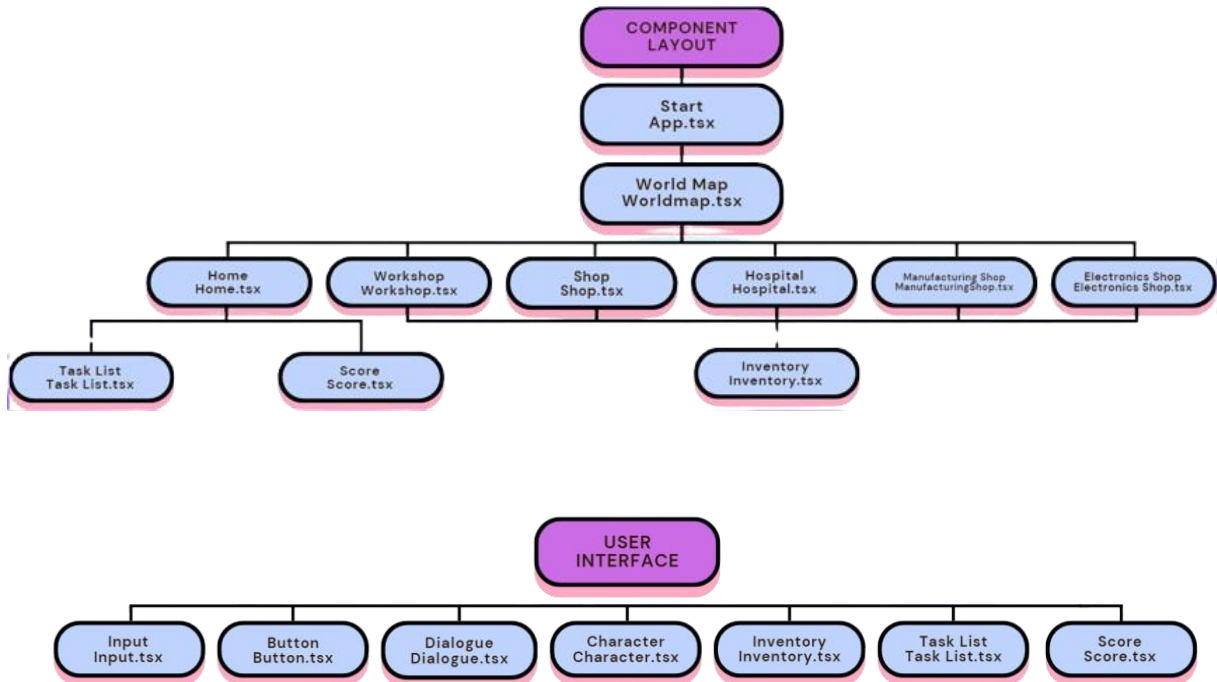
TECH STACK

PROTOTYPE

We have developed a prototype of our pixelated game and have attached images showcasing the design and gameplay features.

OUTCOME

- **Master BIS Standards Through Gameplay**

Players will effortlessly absorb the essentials of **BIS standards** through immersive workshops and interactive challenges. By engaging in fun, hands-on tasks, they'll become more aware of product quality and safety, making smarter choices in real-world scenarios.

- **Turn Knowledge into Action**

In the virtual supermarket, players will actively apply what they've learned, using their newfound BIS knowledge to pick the best products. This practical approach ensures they not only understand but also **remember BIS standards** for real-life decisions.

- **Instant Feedback for Better Learning**

After each level, players receive instant, clear feedback on their choices—why certain products met BIS standards and others didn't. This detailed explanation sharpens their decision-making skills, preparing them to make even better choices as the game progresses.

- **Fun Meets Impactful Learning**

The game combines enjoyment with education, offering a dynamic way to master BIS standards. With a personalized feedback loop that motivates improvement, players will feel excited and challenged while becoming more informed, responsible consumers.

This game transforms learning into an engaging, impactful experience that players will want to keep coming back to!

USP

Integration of BIS Knowledge

This game provides a unique, interactive method for introducing the importance of BIS (Bureau of Indian Standards) certification. Unlike many other educational games that focus mainly on health or nutrition, this one emphasizes practical knowledge, helping Indian consumers understand how BIS marks can guide them in making safer, higher-quality product choices. Instead of just creating awareness, the game empowers players to apply this information in real-world situations. It successfully bridges the gap between simply knowing about BIS standards and actively using that knowledge when shopping for certified, safe products.

Real-Life Application of Learning

A key strength of this game is its ability to replicate everyday situations, making the learning experience both practical and memorable. For instance, players are placed in scenarios like grocery shopping, where they must apply their understanding of BIS standards and food labels. Rather than relying on rote memorization, the game encourages players to use their knowledge in a hands-on, real-world context. This immersive approach helps ensure that safety and quality standards are easily remembered, enabling users to make smarter choices when faced with similar decisions outside the game. By linking learning directly to familiar activities, the game fosters lasting retention of BIS-related knowledge.

Progressive Challenge with Timed Pressure

The game's design includes a series of increasingly challenging tasks that engage players as they advance through different levels. Starting with basic objectives, such as identifying BIS-certified products in a small store, the difficulty escalates. Players are gradually required to navigate more complex shopping environments, which demand a deeper understanding of BIS standards. In the final levels, a timer adds urgency, mimicking real-world decision-making pressure. This feature helps players not only learn the material but also apply it quickly and accurately, reinforcing their understanding of the concepts in time-sensitive situations. The timed aspect encourages sharper focus and better decision-making under pressure, much like in real-life shopping experiences.

Focus on Hidden Ingredients

What differentiates this game from many other educational tools is its focus on more nuanced aspects of product safety and quality, beyond just brand names or basic categories. The game explores often-overlooked elements, such as hidden ingredients, manufacturing details, and less obvious safety features. This in-depth content provides players with a more comprehensive understanding of what it means for a product to meet BIS standards. By emphasizing these finer details, the game goes beyond surface-level education, helping players become more mindful and responsible consumers. It encourages them to make well-rounded, informed decisions, considering all aspects of product quality and safety in their everyday choice