[PHASE 4 REPORT - GROUP 25]

◆COSMIC ESCAPE◆

Ananga Bajgai, Annie Boltwood, Mohamed Mustafa, Austin Yu

GAME DEVELOPMENT AND TUTORIAL
[Milestone 4 - Completion and Reflection]

[1.1] MILESTONE 4 - The Game
Cosmic Escape is an action-packed game set in the vast expanse of space, where you are stranded and your primary goal is to return to the space station. Players navigate through a cosmic abyss filled with various meteors, aliens, and stars. The essence of the game revolves around the main character's journey to collect keys of different colors, each slowly unlocking the space station door and eventually leading to the player's cosmic escape at the space station.

As we reflect on our original plan and design, it's evident that our core vision for Cosmic Escape remained the same. We adhered to the foundation of the game's blueprint: the game's mechanics, the concept of key collection, and the intricate interactions between the player, enemies, and rewards. However, during the development process, we realized the need to adapt and evolve certain aspects of our design to enhance playability and the user experience.

As our group entered the final phase of Cosmic Escape's development, our focus was directed towards refining and finalizing the game, ensuring that it not only aligns with our original vision but also surpasses it in terms of quality and player experience. This phase was important, as it involved the integration of all prior development procedures into a cohesive and engaging game. We addressed both the core logic and the intricate details of the game. This included a comprehensive assessment of entity creation, key collection mechanics, and intricate entity interactions. Our testing strategy was methodically structured, leveraging unit and integration tests to scrutinize every component of the game. We aimed to ensure that each aspect functioned harmoniously within the broader game environment. This included making sure our code practiced polymorphism and encapsulation whenever possible, such as in entity creation within EntityFactory.

One significant change from our original plan was the enhancement of meteor movement. Initially, the movement patterns of meteors were less functional as they got stuck after colliding with barriers, but we introduced a more dynamic approach to their behavior which allows them to move around barriers and towards the direction of the player, making the game more challenging and engaging. It still allowed meteors to be stuck against barriers, as in real life, meteors often collide with other space rocks, and it is up to the player to avoid them. This modification not only added depth to the gameplay but also provided a more immersive experience for the player.

Another change from our original plan was the decision to not use the MenuFactory class, as outlined in our initial UML diagram. During development, we realized that a dedicated factory for menu creation for when the game is started and returned from a game session was not necessary. Instead, we integrated the menu screen

functionalities directly into the Game class and Game panel, where it is a panel state. This approach streamlined the code, reducing complexity and enhancing maintainability.

Throughout each phase, we learned of the significance of flexibility and adaptability in game development. While it's crucial to have a clear vision and plan, being open to changes and improvements can lead to a better and more refined final product. We had to deviate a few times from our UML diagram and initial project specifications, but this led to a better implementation of the game in terms of the codebase and user experience. Our experience with Cosmic Escape taught us that a successful game is not just about sticking to the original plan, but also about embracing the evolution of ideas and striving for continuous improvement.

[1.2] Tutorial

- ➢ The tutorial is provided in this video: https://youtu.be/PWo6oJxK8HM?si=-QFEL-fjCbMlHXls

Credits:
Music track: Cinematic by Aylex
Source: https://freetouse.com/music
Free Background Music for Video

Presentation slides: slidesgo.com