Assignment Case	
DSUsingCH2	
Periode Berlaku Semester Genap 2023/2024 ***Valid on Even*** *Year 2023/2024*	**Software Laboratory Center** **Assistant Recruitment 24-2**

Note: Please focus on the main logic and main feature!

(Splash screen and design are not scored)

Soal

Case

Bubble FiZzPop

In the enchanting town of Bubbleville, where the Bubblestone's mystical energy flows freely, the annual FizzPop Festival is a time of joy and wonder. However, when the malevolent sorcerer Zorgrin threatens to steal the precious Bubblestone, plunging Bubbleville into darkness, the townsfolk must rely on the prowess of skilled bubble wizards to defend their home. As a budding wizard, armed with your trusty bubble wand, you embark on a daring quest to pop colorful bubbles, thwart Zorgrin's sinister plans, and restore peace to Bubbleville. With each strategic shot, you aim to and shoot bubbles to earn precious points and outsmart Zorgrin's minions. Only by mastering the art of bubble magic can you hope to save Bubbleville and emerge as the ultimate FizzPop champion, ensuring the town's safety and the preservation of its magical heritage.

- **Welcome Page**
  - Show Welcome message, and prompt user to press Enter to continue.

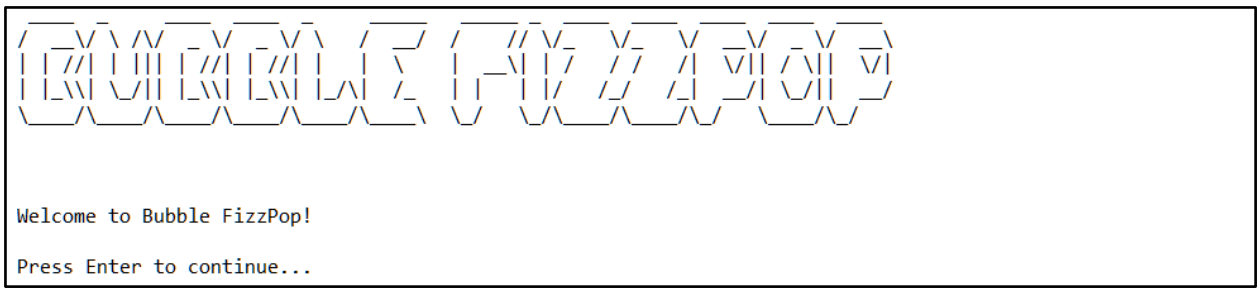

Figure 1. Welcome Page

➢ Main Menu

- This menu consists of **3** options, which are **Play**, **How to Play**, and **Exit**.
- Prompt user to input chosen menu. Validate that the input must be a number and between **1 and 3 inclusively**.

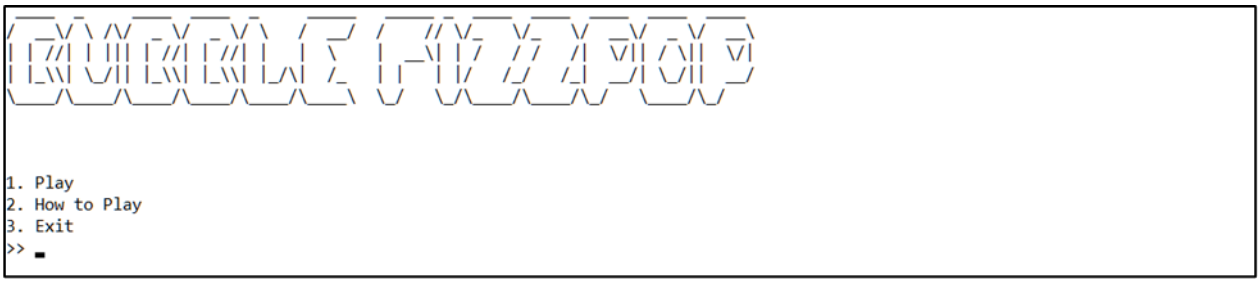

Figure 2. Main Menu

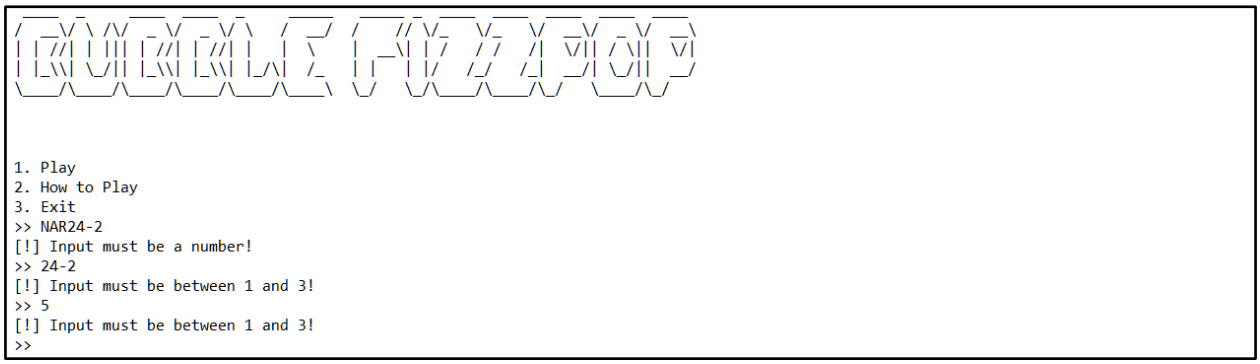

Figure 3. Menu Validations

1. If user choose **Play** (**Menu 1**), then:
   - User immediately **enters the game**.

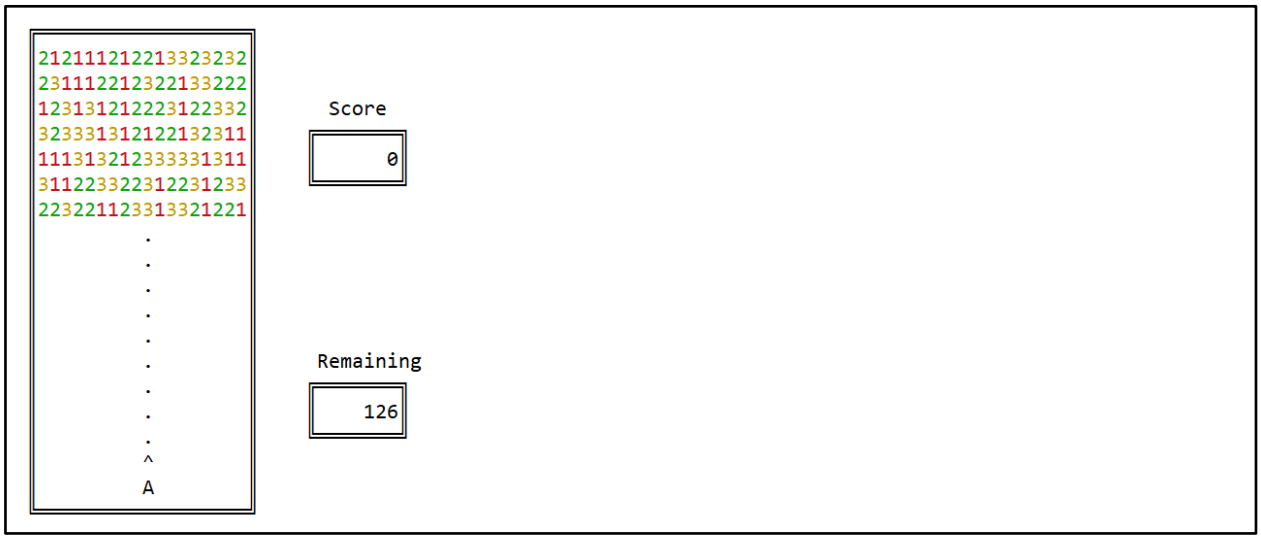

Figure 4. The Game

- When user enters the game, spawn **7 rows** of random balls with value **ranging from 1 - 3**.
- There is a **shooter** at the **bottom center** of the screen. User can **move the shooter** by pressing '**A**' or '**D**' key. Validate that the shooter can't move **out of screen**.
- On the right, there is **scoreboard** and **remaining balls**. User can **view their score** and **remaining balls to destroy** there.
- User **loses** when the balls **reach the last layer**, and **wins** when there are **no balls remaining**.

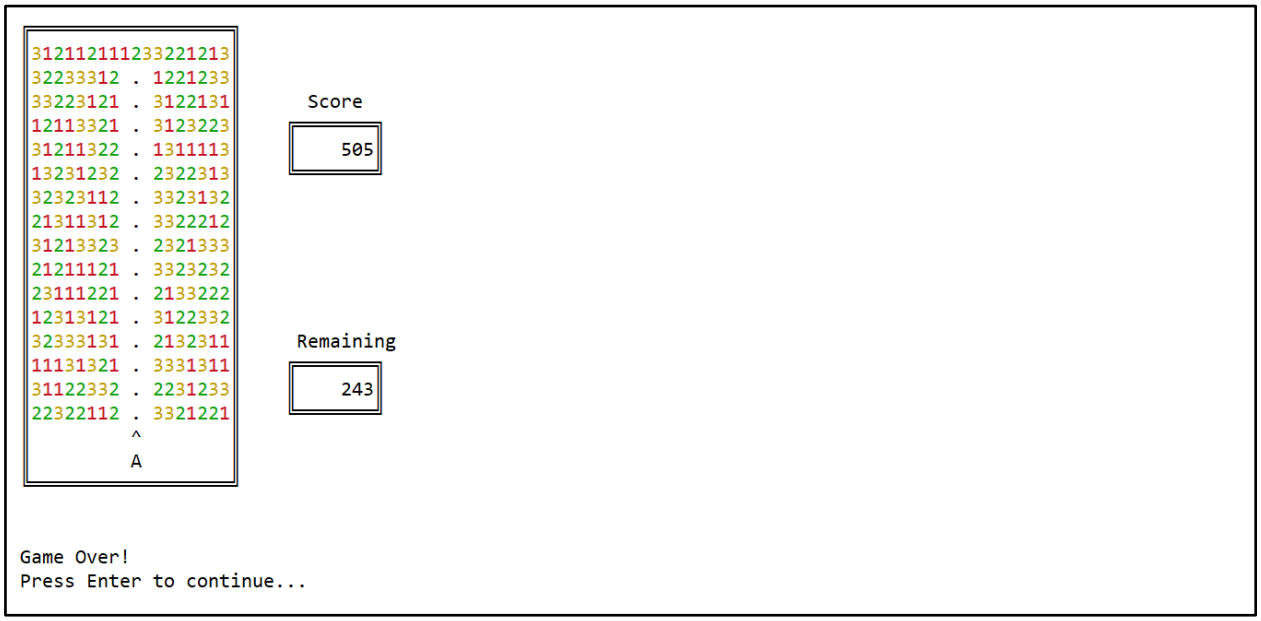

Figure 5. User Loses

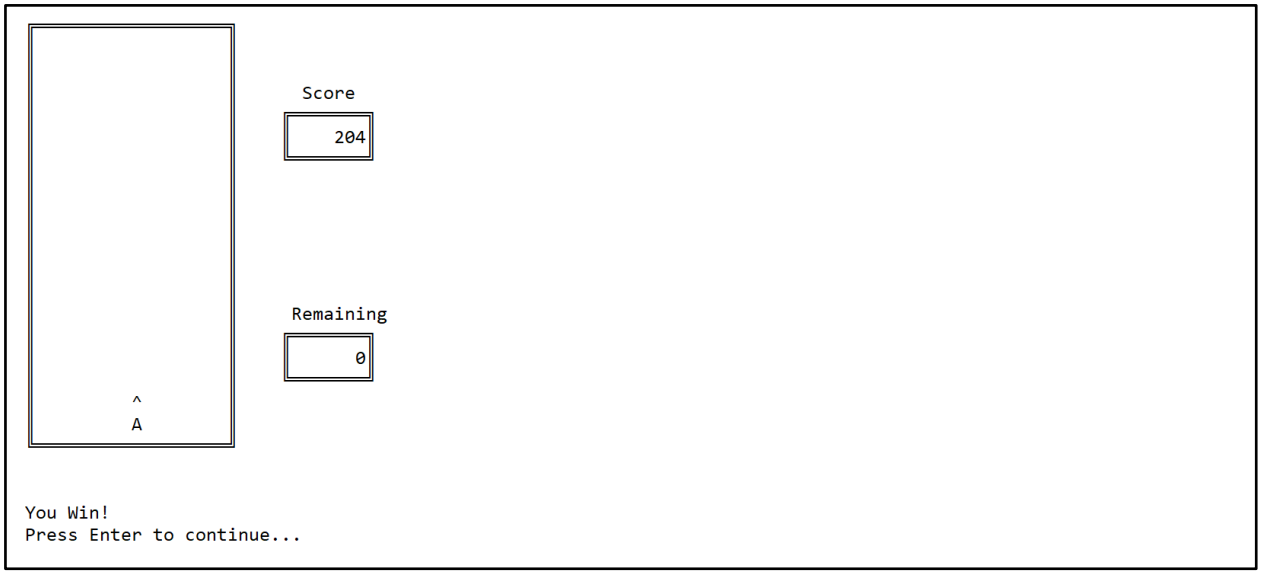

Figure 6. User Wins

- Make sure that the game fulfills following mechanics:
  a. Game
    - User can eliminate balls by **reducing the number on the ball to 0**.
    - **Every shot reduces 1** from the ball's value**.**
    - A shot affects **all balls** within **1 unit radius.**
    - **A new layer of balls** will be added at the top every **10 shots**.

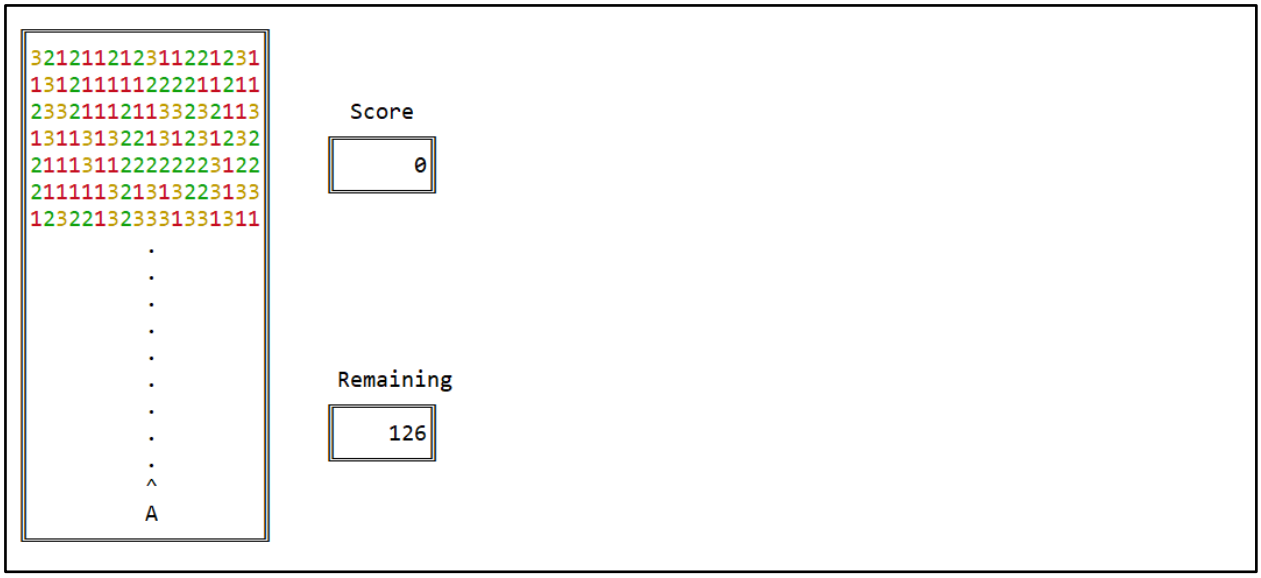

Figure 7. Aiming Shooter

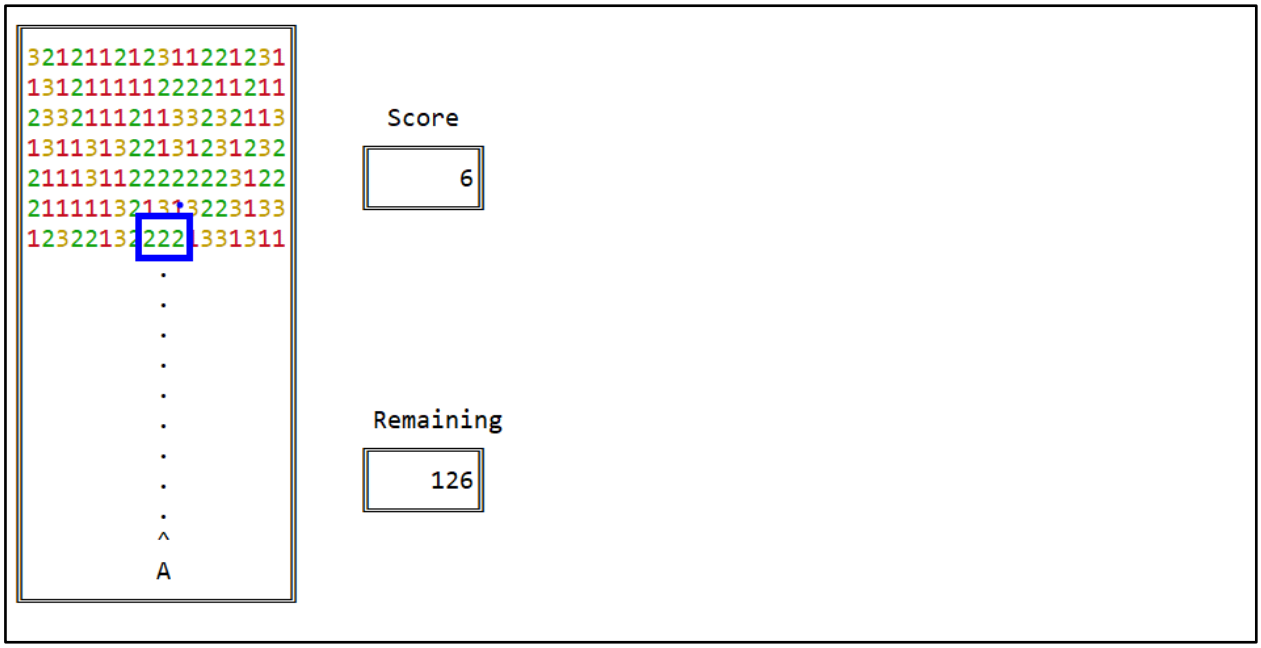

Figure 8. Area of Effect

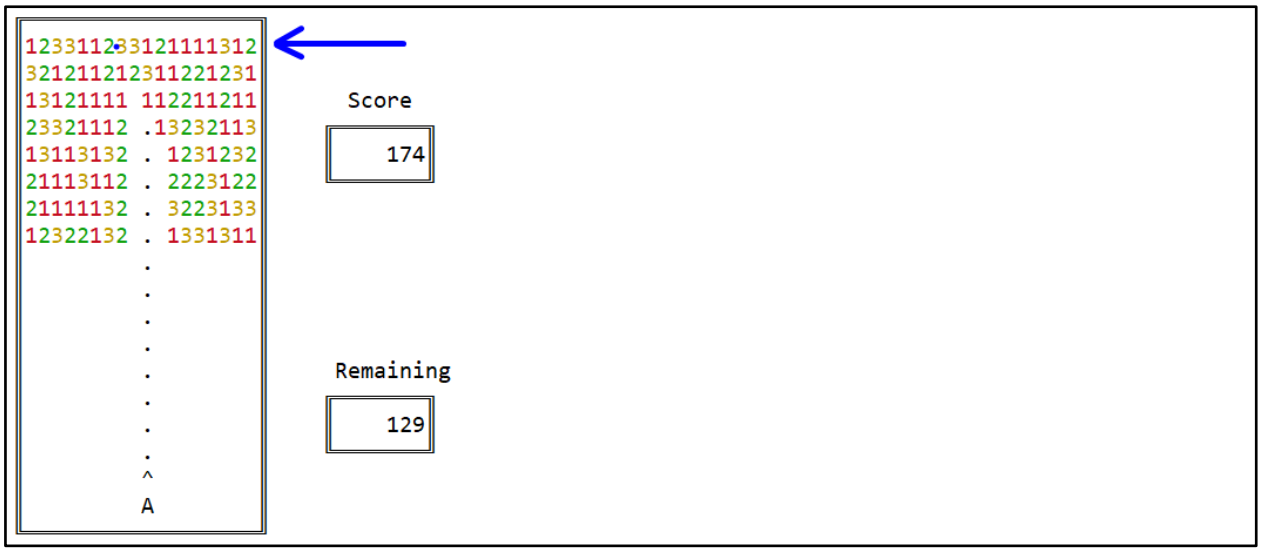

Figure 9. New Layer added

b. Score

- User can **earn points** by shooting at balls.
- The scoring formula follows a system, where:
  - Each popped ball adds **10 points**.
  - Reducing the value of a ball adds **the value of the ball before reduction to your score**.

Example:

1 shot affects 2 balls:

- **3 ball: reduces ball's value to 2 + adds 3 points**
- **1 ball: eliminates ball + adds 10 points**

2. If user choose **How to Play** (**Menu 2**), then:
   - Show the **how to play** page. Make sure user can **go back** to main menu.
   - This menu consists of **3 pages**, which the user can **navigate** through them.

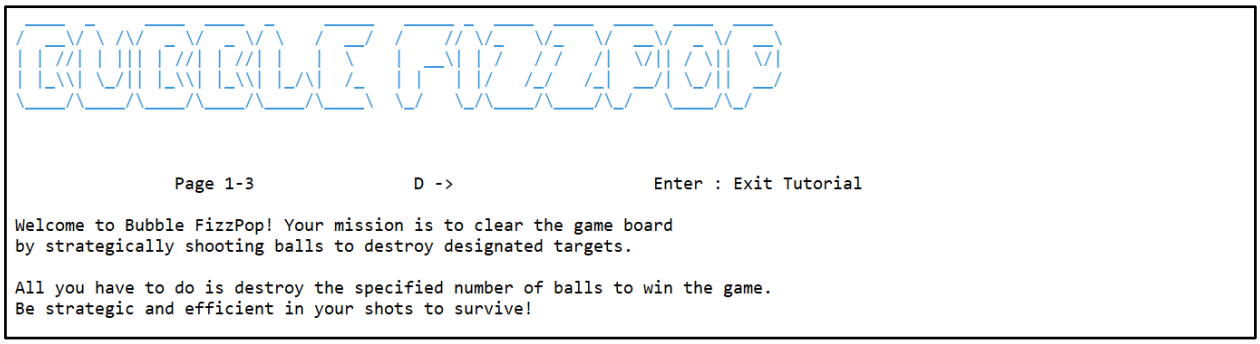

Figure 10. How to Play page 1

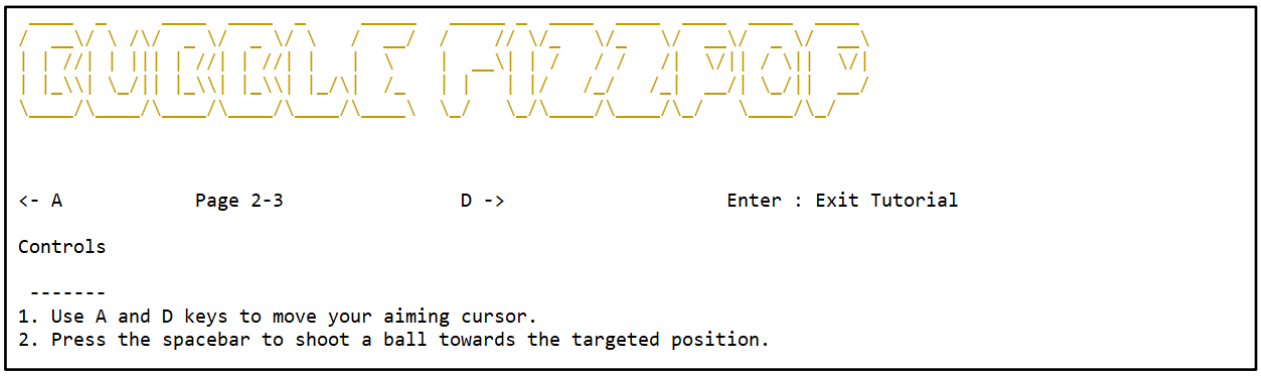

Figure 11. How to Play page 2

3. If user choose **Exit** (**Menu 3**), then:
    - Show the **Exit** page.

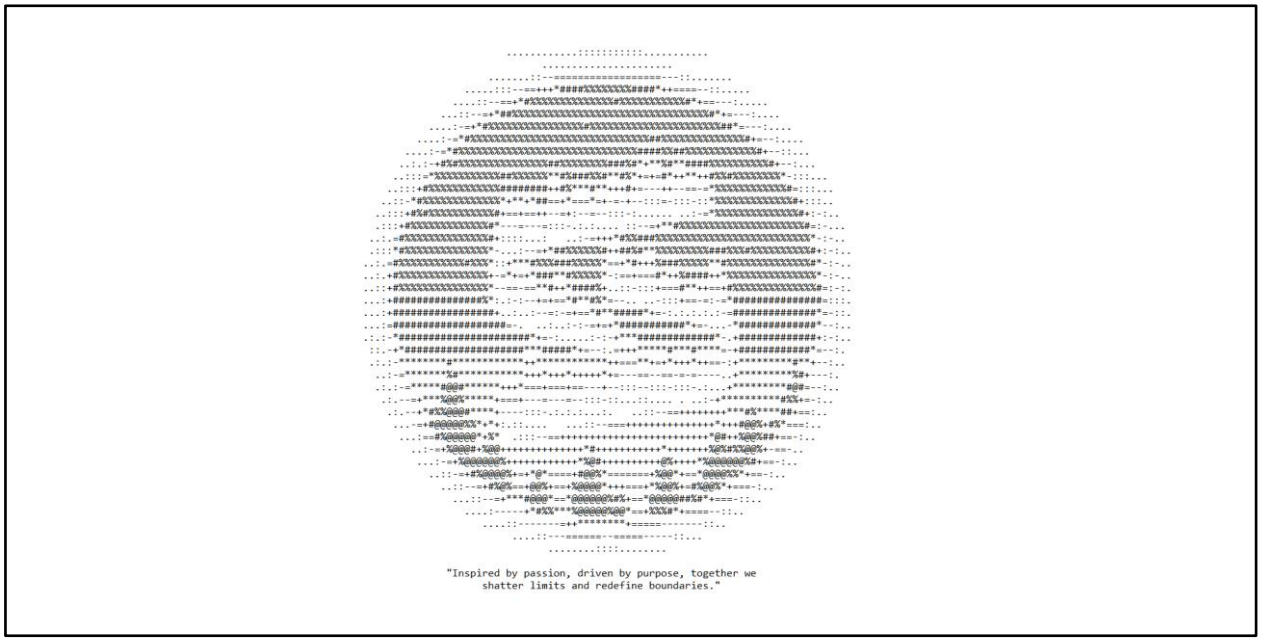

Figure 12. Exit Splash Screen

Please run the EXE file to see the sample program.