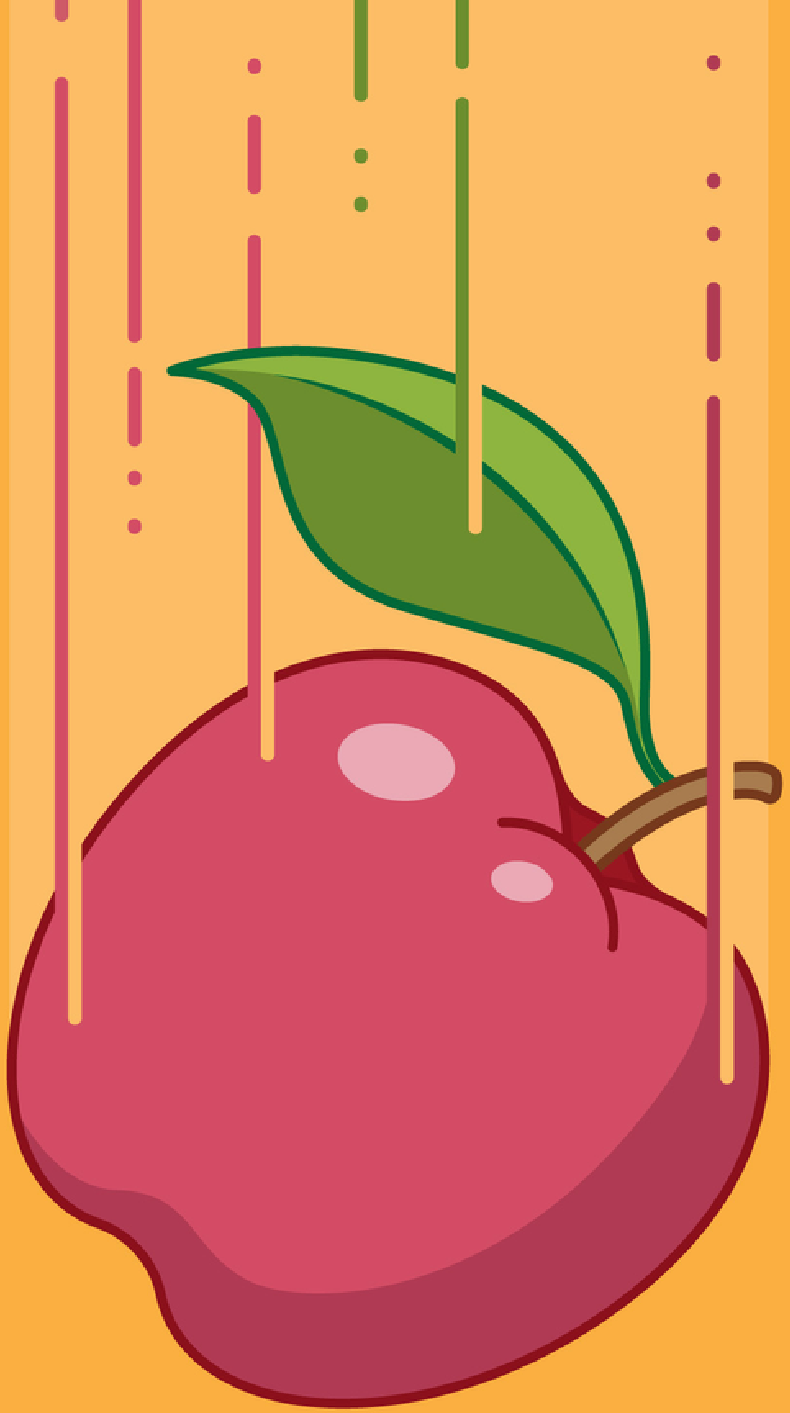

CME-1252
PROJECT BASED LEARNING-2

GRAVITY

All objects are subject to gravity!

MADE BY

Emil Ismayilzada
Kerem Kalıntaş
Burak Kıyak
Arda Aydın

CONTENTS

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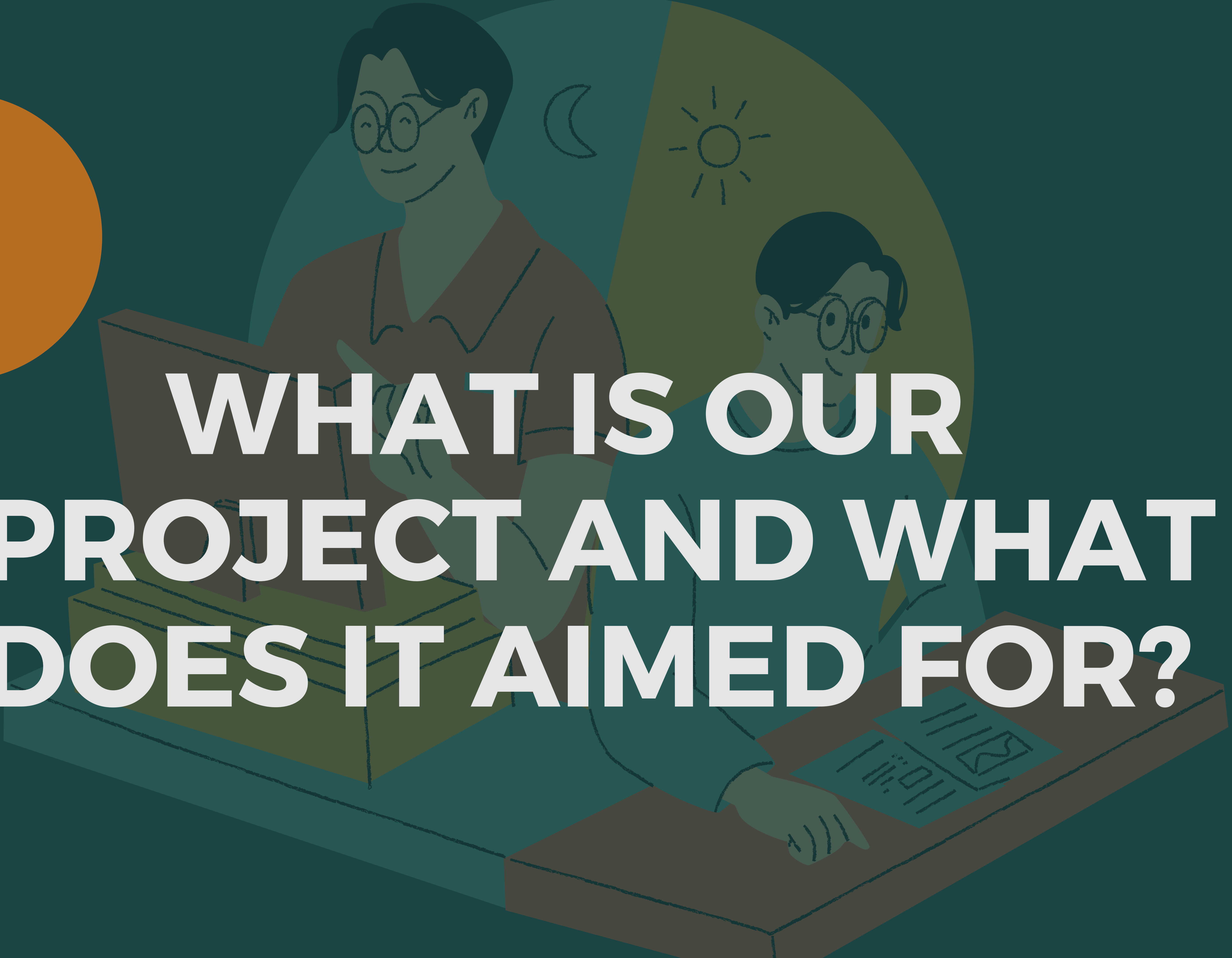


WHAT IS OUR PROJECT AND WHAT DOES IT AIMED FOR?

2

PROGRESS SUMMARY

SCHEDULING

Week 1

- Discussing and designing solution alternatives.
- Desingning classes and data structures.
- Initializing the game and filling the map

Week 2

- Handling player movements and teleporting
- Timing.
- Creating Stack class and writing the backpack algorithm

Week 3

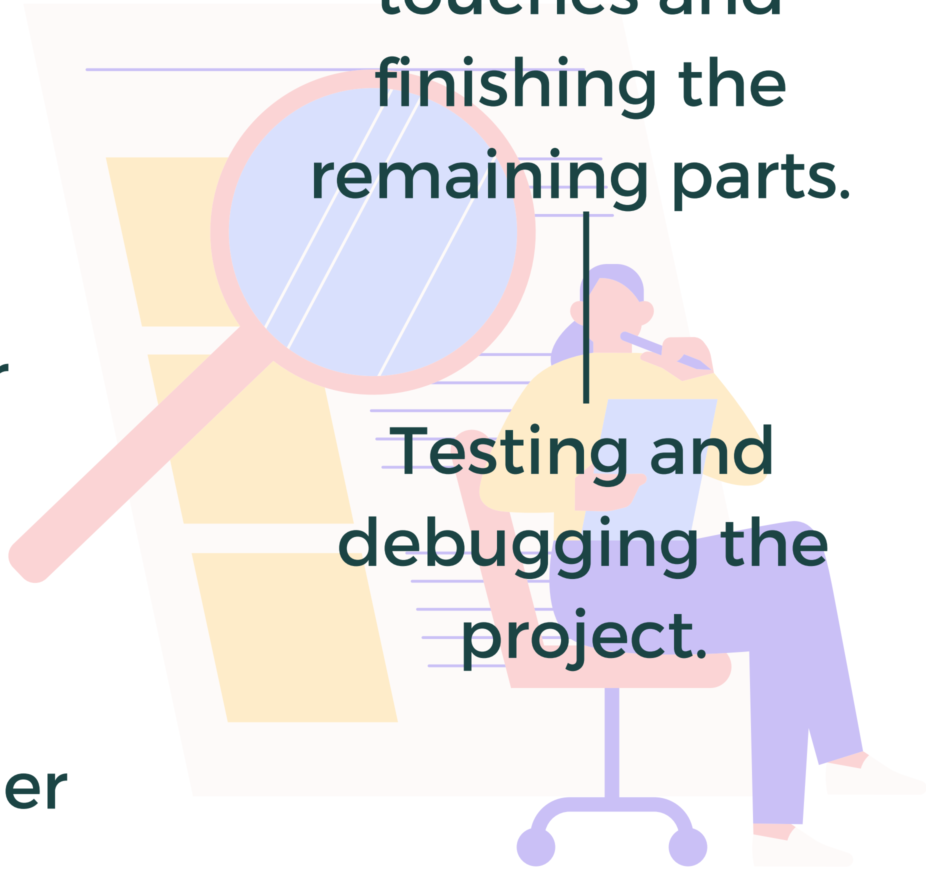
- Creating the Queue class and Input Queue
- Writing the algorithm of Input Queue

Week 4

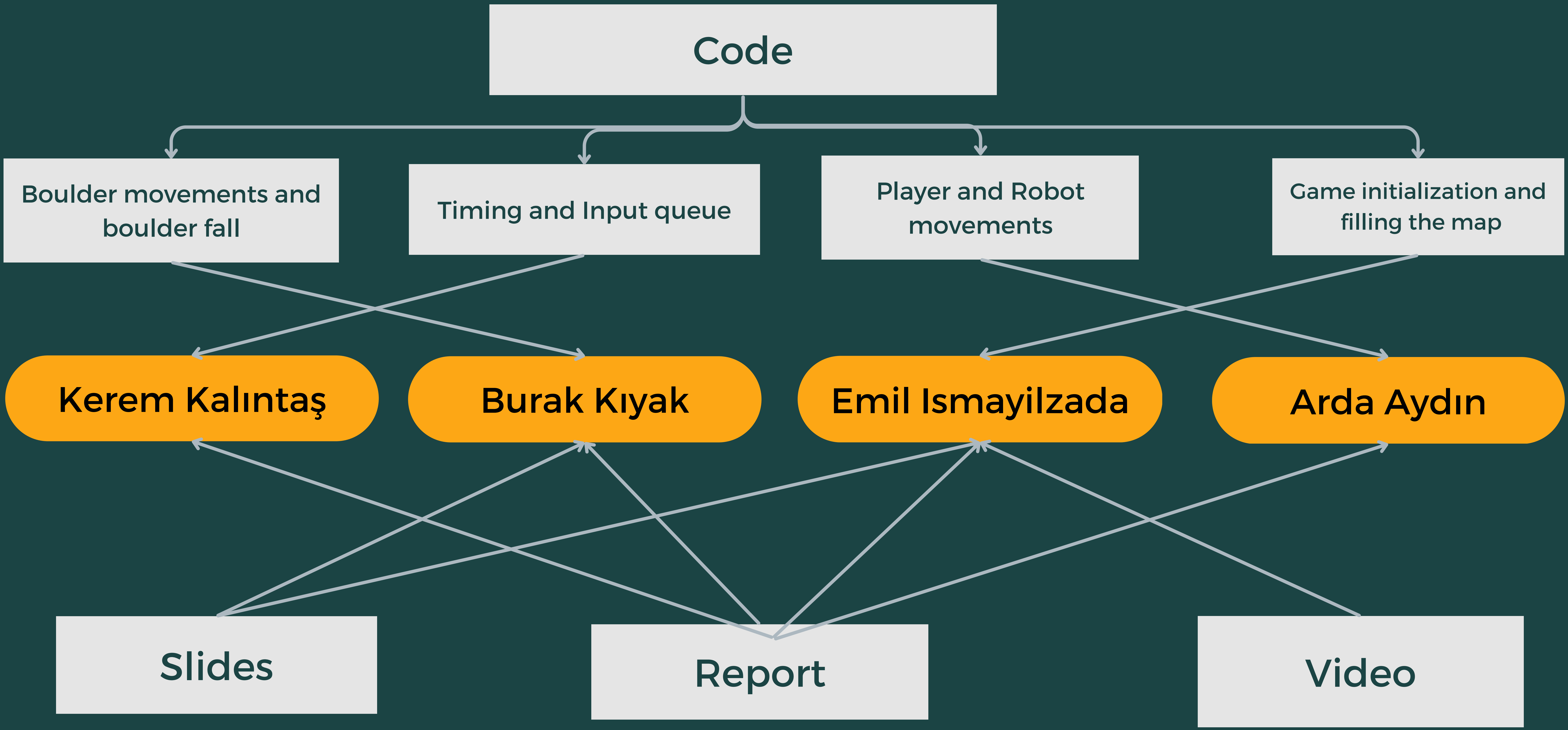
- Creating Robot class.
- Handling Robot movements.
- Creating Boulder class
- Writing the algorithm of Boulder Fall

Week 5

- Making the final touches and finishing the remaining parts.
- Testing and debugging the project.



REQUIREMENTS AND TASK SHARING


Code
Boulder movements and boulder fall
Timing and Input queue
Player and Robot movements
Game initialization and filling the map
Kerem Kalıntaş
Burak Kıyak
Emil Ismayilzada
Arda Aydın
Slides
Report
Video

3 ALGORITHMS AND SOLUTION STRATEGIES

Algorithm

- We created "replaceRandomSquare" method for replacing squares when the input queue is changed. It also functions as replacing random earth squares with a given square type. So it is being used in the "initGame" method also.

Algorithm

- First we tried to do falling of boulders with nested loops, but then we came up with a different algorithm. We have boulder class. In "Gravity" class we open a boulder array and fill it. Then in every specified time period we check every boulder in this array and if they have empty square under them, they fall.

Algorithm

- We made a different class named InputQueue, rather than using functions in main class. This class contains "generateSquare"(where a new random square generated) and "next"(where the generated square added to the queue) functions. And then InputQueue class called and used in "Gravity" class with its functions.

4

PROBLEMS ENCOUNTERED

1. PROBLEM

- Enigma window didn't shut down after returning from the main. We wanted it to close when the user didn't wanted to play anymore. As the solution we wrote “System.exit(0)” instead of returning from main.

2. PROBLEM

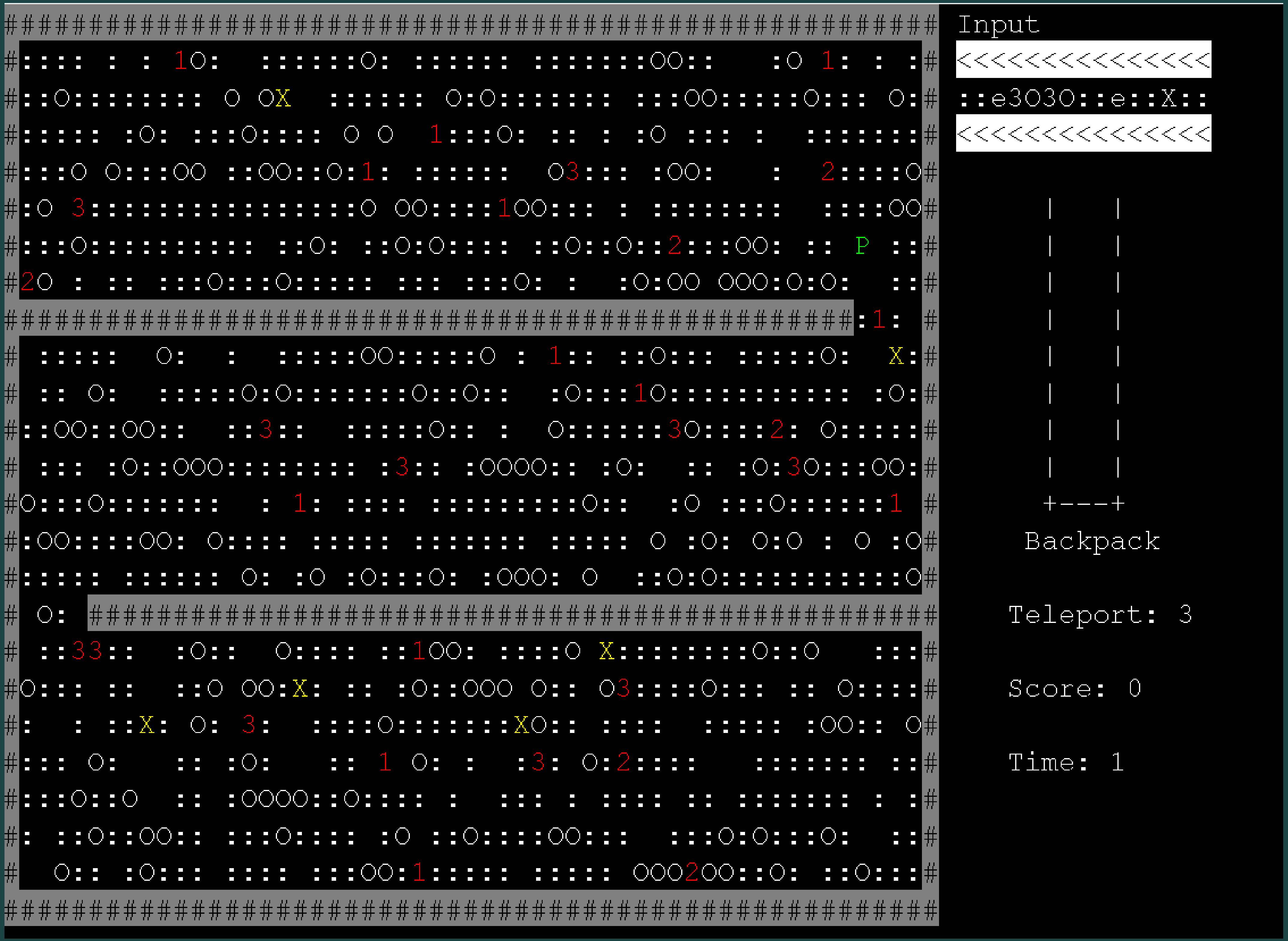
- When boulders were falling, because we were scanning from above, the program was moving the boulders again and again.

3. PROBLEM

- Timing of the game was a hardship for us. Because it is hard to find the perfect speed for every game object, they were moving either too fast or too slow.

5

SCREENSHOTS



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Input
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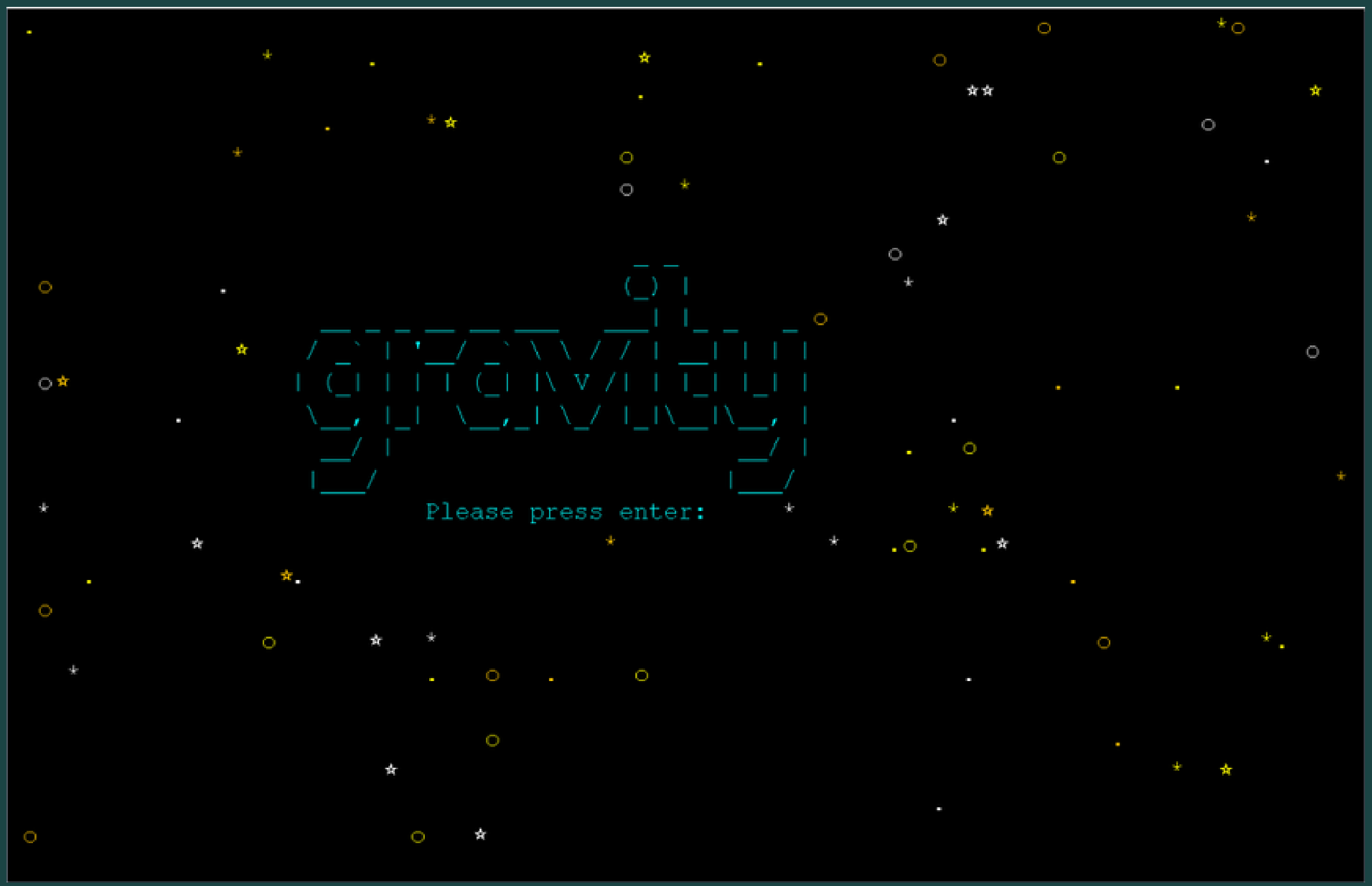
   |   |
   |   |
   |   |
   |   |
   |   |
   |   |
   |   |
   +---+
 Backpack

Teleport: 3

Score: 0

Time: 1
```



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Please press enter:
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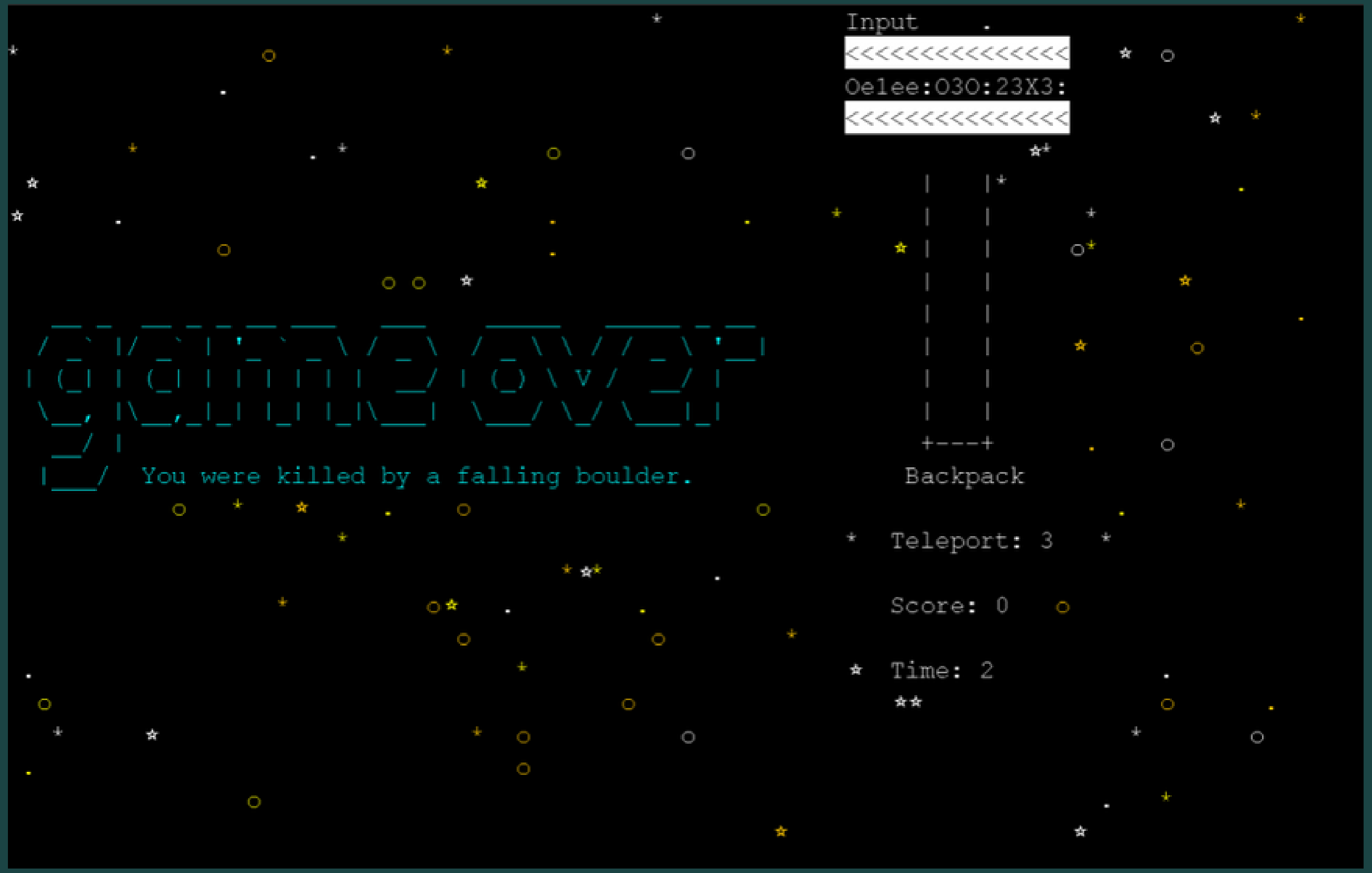

```
You were killed by a falling boulder.

Input
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Oelee:O3O:23X3:
<<<<<<<<<<<<<<<

   |   |
   |   |
   |   |
   |   |
   |   |
   |   |
   +---+
 Backpack

Teleport: 3

Score: 0

Time: 2
```

6

CONCLUSION

REFERENCES

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