

13.1 Deployment guide

13.1.1 List of files

File name	Size	Date	Content
ActiveElement.java	1KB	18-05-2024	'ActiveElemnt' class extends from Pipe Element class.
Cistern.java	2KB	18-05-2024	The 'Cistern' class is a Java representation of a reservoir in a pipe-based game. It includes methods to manufacture pumps and pipes, etc
Player.java	1KB	18-05-2024	The 'Player' class in Java represents a player in a game with unique player and team IDs. It enables movement in specified directions, changing pump directions, and team selection.
Game.java	2KB	18-05-2024	The 'Game' class in Java manages the state of a game, including its start and end. It tracks plumbers and saboteurs with respective player and team mappings.
Pipe.java	4KB	18-05-2024	The 'Pipe' class in Java extends 'PipeElement' and represents pipes in a game. It tracks attributes like leaking status, capacity, and current volume, and has methods to print pipe information, change pipe ends, split pipes, and set leaking status..
PipeElement.java	2KB	18-05-2024	'PipeElement' represents elements in a pipe-based game. It maintains a list of players and a type attribute. It provides methods to accept and remove players from the pipe element, and retrieve the list of players currently present.
Pump.java	4KB	18-05-2024	The 'Pump' class in Java models pumps in a game, inheriting from 'ActiveElement'. It handles attributes like working status, connected pipes, and

			maximum pipe capacity. Its methods include adding pipes, changing pump direction, breaking and fixing pumps, and water manipulation.
Saboteur.java	1KB	18-05-2024	The `Saboteur` class is a subclass of `Player` in Java, representing a player with sabotage abilities in a game. It inherits player and team IDs and includes methods to puncture pipes and break pumps, simulating sabotage actions within the game environment.
Spring.java	1KB	18-05-2024	The `Spring` class in Java extends `ActiveElement` and represents a spring in a game.. Methods include printing spring information, retrieving water released, and increasing the amount of water released. Additionally, it displays information about players present at the spring.
Main.java	1KB	18-05-2024	The `Main` class initializes a Swing window titled "Pipes in Desert". The game starts by calling the `startGameThread` method on the `GamePanel` instance.
Collison Checker.java	8KB	18-05-2024	The `CollisionChecker` class handles collision detection in the game. It checks if an entity collides with tiles (`checktile` method) or with another entity (`checkEntityEntity` method).
GamePanel.java	3KB	18-05-2024	The `GamePanel` class sets up the game screen, manages game updates, and handles rendering. It initializes game components, listens for keyboard inputs, and runs the game loop on a separate thread to update and draw the game at 60 FPS.
KeyHandler.java	3KB	18-05-2024	The `KeyHandler` class implements the `KeyListener` interface to handle keyboard

			input. It tracks the state of various keys (arrow keys, W, A, S, D, X, P).
Directions.java	1KB	18-05-2024	The 'Directions' enum defines four constants: 'UP', 'DOWN', 'LEFT', and 'RIGHT', representing possible movement directions.
EntityGUI.java	2KB	18-05-2024	The 'EntityGUI' abstract class manages the graphical representation of an entity in the game. It loads an entity's image, updates the entity's state with the 'update' method (to be implemented by subclasses), and draws the entity on the screen.
PlumberGUI.java	2KB	18-05-2024	The 'PlumberGUI' class extends 'EntityGUI' and represents the visual and interactive aspects of the 'Plumber' entity. It initializes the plumber's position and size, updates the plumber's state based on keyboard input, checks for collisions, and updates the entity's direction and movement.
SaboteurGUI.java	2KB	18-05-2024	The SaboteurGUI class extends EntityGUI and represents the visual and interactive aspects of the Saboteur entity. It initializes the saboteur's position and size, updates the saboteur's state based on keyboard input, checks for collisions, and updates the entity's direction and movement.
Tile.java	2KB	18-05-2024	Renders the images from the saved png files.
TileManager.java	2KB	18-05-2024	Implements the map tiles
Entity.java	2KB	18-05-2024	The 'Entity' class in Java defines a game entity with size, speed, direction, and collision attributes. It includes a method to move the entity based on its direction and

			speed, handling collision detection when enabled.
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13.1.2 Compilation

To compile the Java code, we recommend using IntelliJ IDEA, the Integrated Development Environment (IDE) in which the code was developed. Simply open the project in IntelliJ IDEA, ensure that Java 21 is set as the project's JDK, and IntelliJ will handle the compilation process automatically. Ensure that the project configuration is correctly set up in IntelliJ to compile the code successfully.

13.1.3 Run

To run the executable program, open the project in IntelliJ IDEA. Locate the main class of the program and press the 'Run' button.

This will display the game screen featuring both plumbers and saboteurs.

13.2 Evaluation

Name of the team member	Participation (%)
Bhaskar Sharma	20%
Aditi Sodagar	20%
Ahmed Khalifa	20%
Rajat Saini	20%
Shivam Kohli	20%