KK14203

OBJECT ORIENTED PROGRAMMING

REPORT

PROJECT 2 (INDIVIDUAL)

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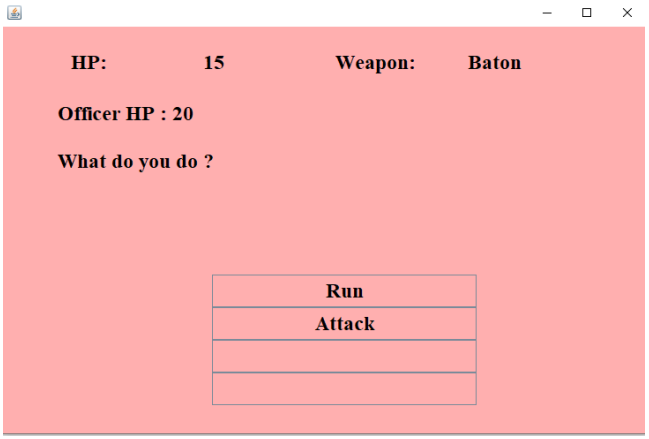
GUI DESIGNS

Front page (Interface)

- This page shows the name of the game.
- There is a button, when user clicked it, the game will start.

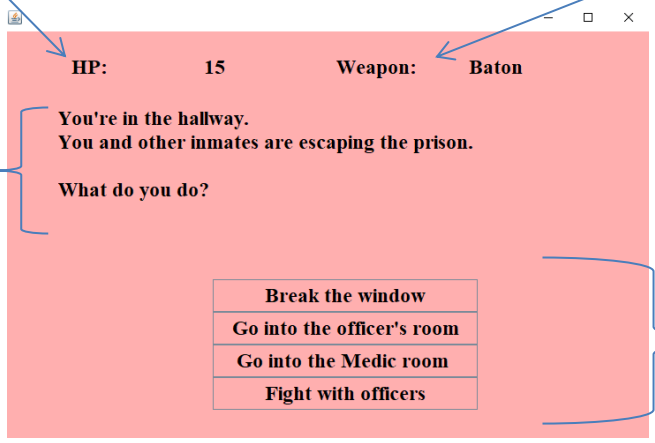
- This is some of the story page



USER MANUAL

This is where player's HP is shown.

This is where player's current weapon is shown. When player obtain a new weapon, the weapon will change name.

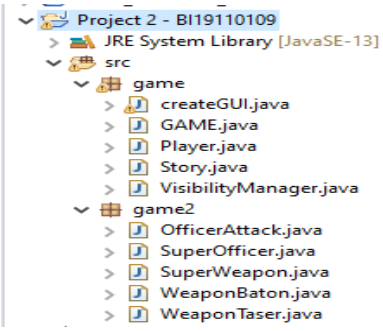


This is where the story or dialogues are shown.

This is where player can decide how the story goes, by choosing 1 of these 4 buttons. Each button will bring player to different places.

CODING

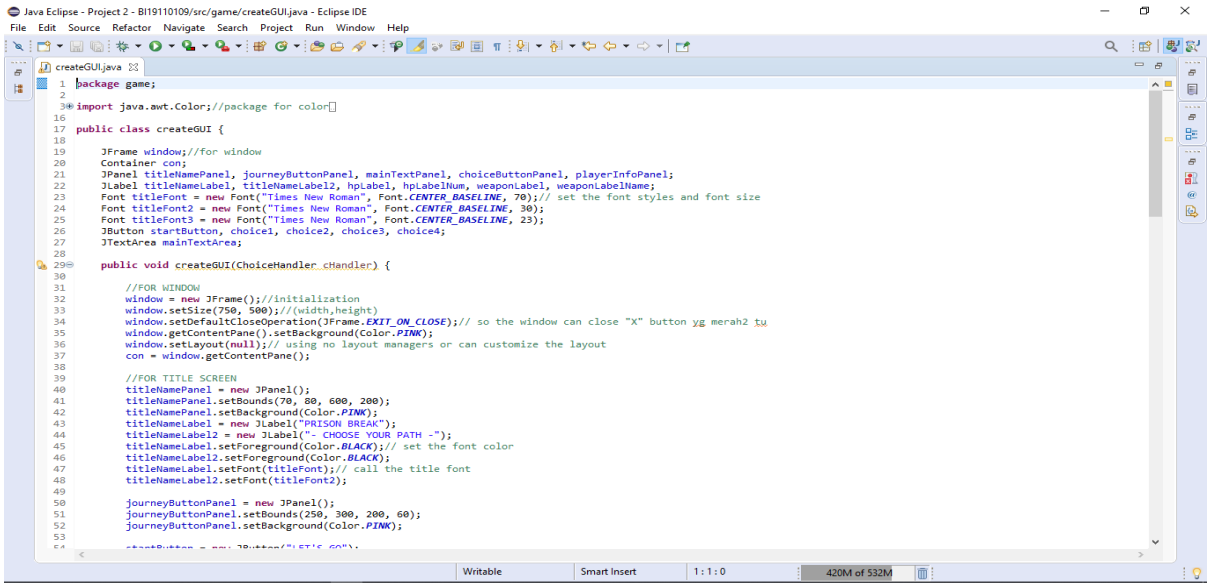
In this project I decided to use packages and do multiples class separately so other people can see the coding clearly.

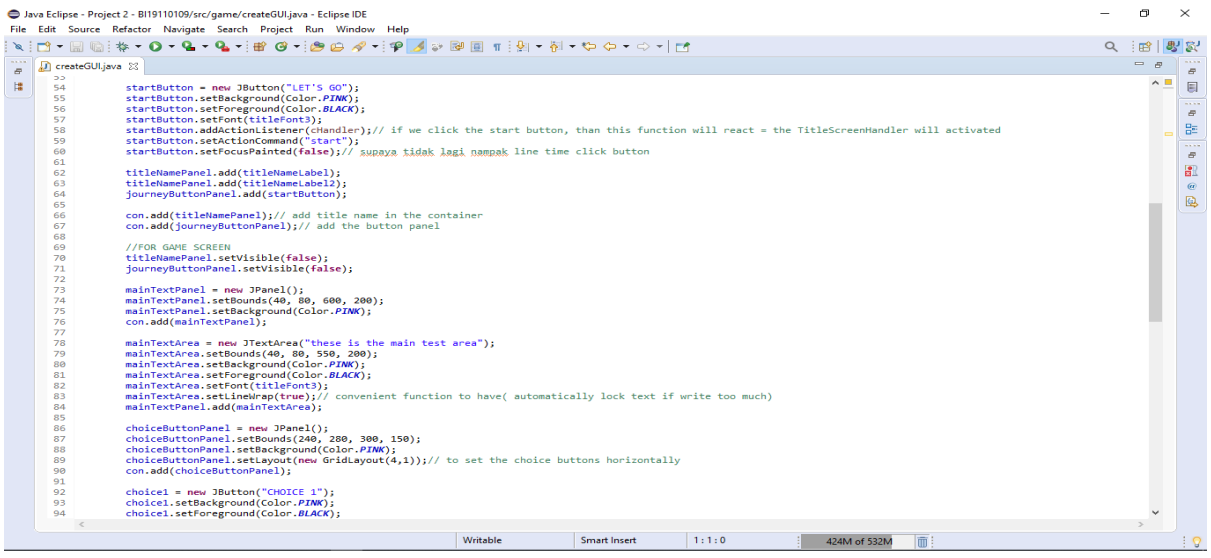


There are 2 packages, which are game and game2.

Package = game

class createGUI





Java Eclipse - Project 2 - BI19110109/src/game/createGUI.java - Eclipse IDE

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createGUI.java

```
        choice1 = new JButton("CHOICE 1");
        choice1.setBackground(Color.PINK);
        choice1.setForeground(Color.BLACK);
        choice1.setFont(titleFont3);
        choice1.setFocusPainted(false);
        choice1.addActionListener(cHandler);
        choice1.setActionCommand("c1");//to differentiate between the title button and these 4 choice buttons
        choiceButtonPanel.add(choice1);

        choice2 = new JButton("CHOICE 2");
        choice2.setBackground(Color.PINK);
        choice2.setForeground(Color.BLACK);
        choice2.setFont(titleFont3);
        choice2.setFocusPainted(false);
        choice2.addActionListener(cHandler);
        choice2.setActionCommand("c2");//to differentiate between the title button and these 4 choice buttons
        choiceButtonPanel.add(choice2);

        choice3 = new JButton("CHOICE 3");
        choice3.setBackground(Color.PINK);
        choice3.setForeground(Color.BLACK);
        choice3.setFont(titleFont3);
        choice3.setFocusPainted(false);
        choice3.addActionListener(cHandler);
        choice3.setActionCommand("c3");//to differentiate between the title button and these 4 choice buttons
        choiceButtonPanel.add(choice3);

        choice4 = new JButton("CHOICE 4");
        choice4.setBackground(Color.PINK);
        choice4.setForeground(Color.BLACK);
        choice4.setFont(titleFont3);
        choice4.setFocusPainted(false);
        choice4.addActionListener(cHandler);
        choice4.setActionCommand("c4");//to differentiate between the title button and these 4 choice buttons
        choiceButtonPanel.add(choice4);

        playerInfoPanel = new JPanel();
        playerInfoPanel.setBounds(80, 15, 600, 50);
        playerInfoPanel.setBackground(Color.PINK);
        playerInfoPanel.setLayout(new GridLayout(1,4)); //custom layout
        con.add(playerInfoPanel);
```

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```
        hpLabel = new JLabel("HP: ");
        hpLabel.setFont(titleFont3);
        hpLabel.setForeground(Color.BLACK);
        playerInfoPanel.add(hpLabel);

        hpLabelNum = new JLabel();
        hpLabelNum.setFont(titleFont3);
        hpLabelNum.setForeground(Color.BLACK);
        playerInfoPanel.add(hpLabelNum);

        weaponLabel = new JLabel("Weapon: ");
        weaponLabel.setFont(titleFont3);
        weaponLabel.setForeground(Color.BLACK);
        playerInfoPanel.add(weaponLabel);

        weaponLabelName = new JLabel();
        weaponLabelName.setFont(titleFont3);
        weaponLabelName.setForeground(Color.BLACK);
        playerInfoPanel.add(weaponLabelName);


        window.setVisible(true);// can show the window
    }

}
```

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class GAME

Java Eclipse - Project 2 - BI19110109/src/game/GAME.java - Eclipse IDE

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createGUI.java GAME.java

```
package game;

import java.awt.event.ActionEvent;

public class GAME {

    ChoiceHandler cHandler = new ChoiceHandler();
    createGUI ui = new createGUI();
    VisibilityManager vm = new VisibilityManager(ui);//send this to class VisibilityManager
    Story story = new Story(this, ui, vm);

    String nextPosition1, nextPosition2, nextPosition3, nextPosition4;

    public static void main(String[] args) {

        new GAME();

    }

    public GAME() {

        ui.createGUI(cHandler);
        story.GAMESetup();//to call this GAMESetup
        vm.showTitleScreen();//to display title screen from class showTitleScreen
    }

public class ChoiceHandler implements ActionListener{

        public void actionPerformed(ActionEvent event) {

            String yourChoice = event.getActionCommand();

            switch (yourChoice) {
            case "start" :  vm.prison(); story.hallway(); break;
            case "c1" : story.selectPosition(nextPosition1);break;
            case "c2" : story.selectPosition(nextPosition2);break;
            case "c3" : story.selectPosition(nextPosition3);break;
            case "c4" : story.selectPosition(nextPosition4);break;
            }

        }
```

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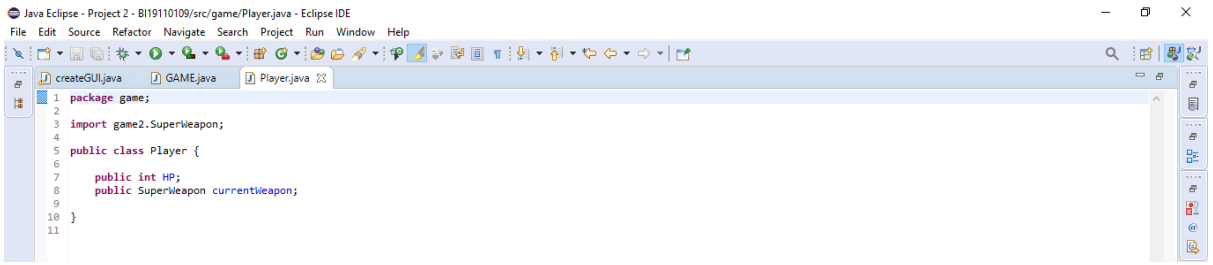
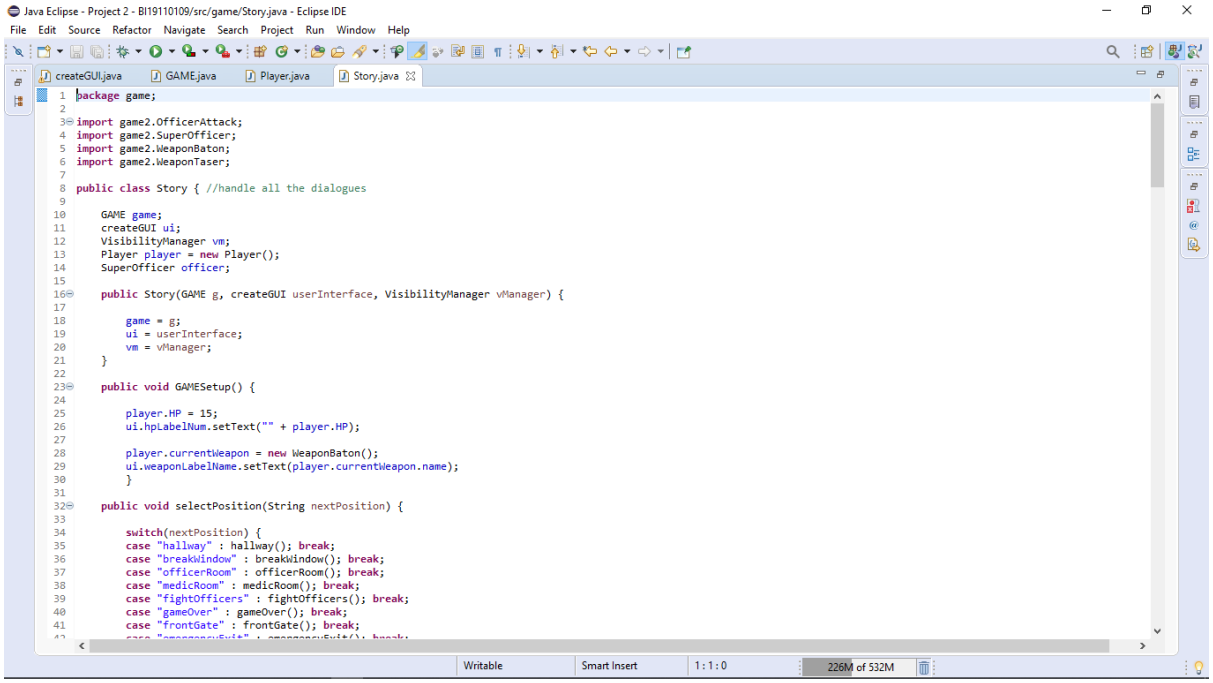
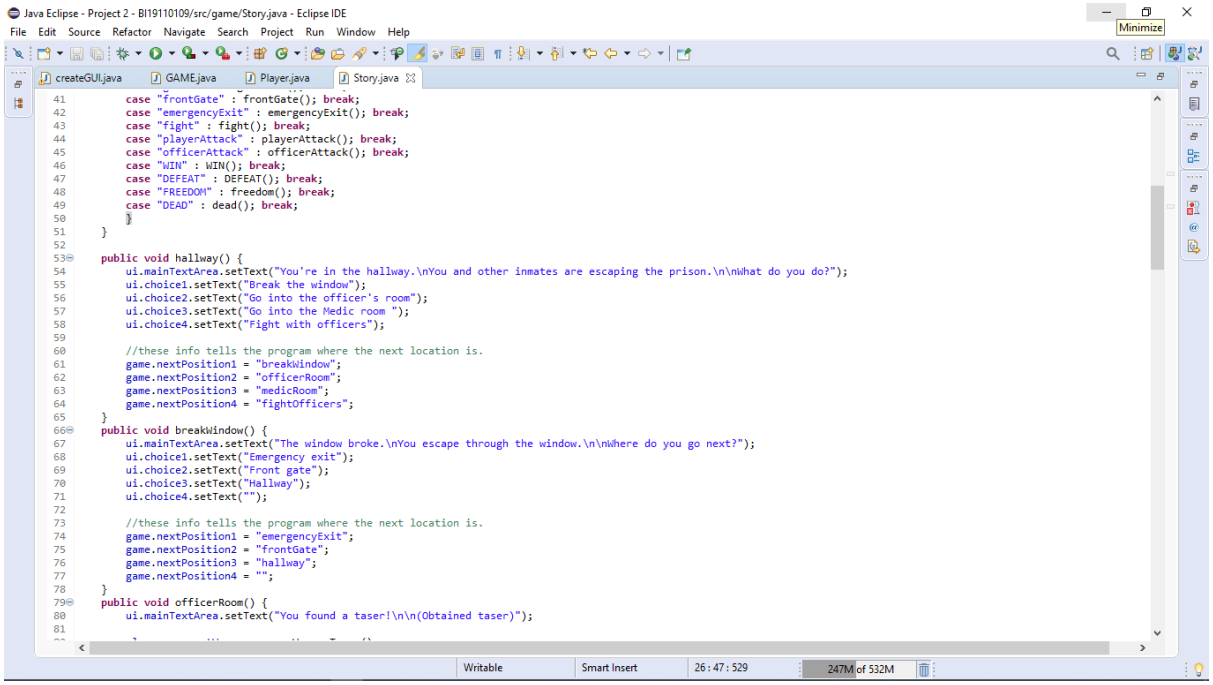
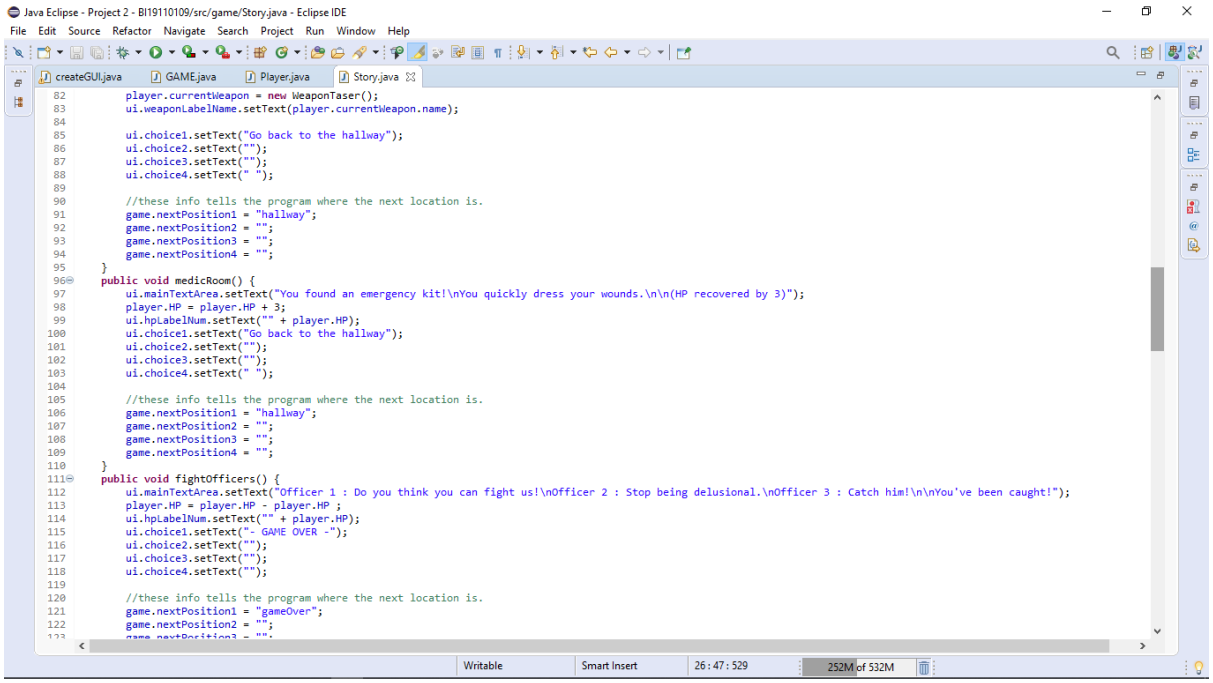
class Player



class Story






Java Eclipse - Project 2 - BI19110109/src/game/Story.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
createGUI.java GAME.java Player.java Story.java
player.currentWeapon = new WeaponTaser();
ui.weaponLabelName.setText(player.currentWeapon.name);
ui.choice1.setText("Go back to the hallway");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText(" ");
//these info tells the program where the next location is.
game.nextPosition1 = "hallway";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void medicRoom() {
ui.mainTextArea.setText("You found an emergency kit!\nYou quickly dress your wounds.\n\n(HP recovered by 3)");
player.HP = player.HP + 3;
ui.hpLabelNum.setText("" + player.HP);
ui.choice1.setText("Go back to the hallway");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText(" ");
//these info tells the program where the next location is.
game.nextPosition1 = "hallway";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void fightOfficers() {
ui.mainTextArea.setText("Officer 1 : Do you think you can fight us!\nOfficer 2 : Stop being delusional.\nOfficer 3 : Catch him!\n\nYou've been caught!");
player.HP = player.HP - player.HP ;
ui.hpLabelNum.setText("" + player.HP);
ui.choice1.setText("- GAME OVER -");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText("");
//these info tells the program where the next location is.
game.nextPosition1 = "gameOver";
game.nextPosition2 = "";
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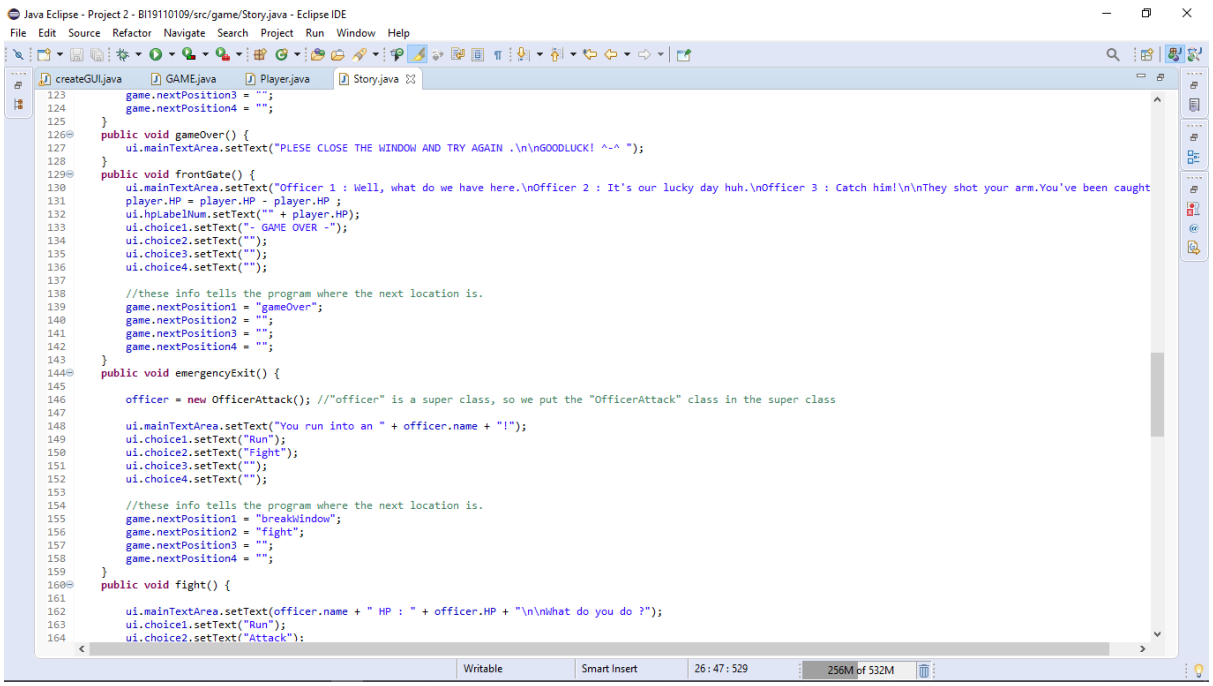
Java Eclipse - Project 2 - BI19110109/src/game/Story.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
createGUI.java GAME.java Player.java Story.java
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void gameOver() {
ui.mainTextArea.setText("PLESE CLOSE THE WINDOW AND TRY AGAIN .\n\nGOODLUCK! ^-^ ");
}
public void frontGate() {
ui.mainTextArea.setText("Officer 1 : Well, what do we have here.\nOfficer 2 : It's our lucky day huh.\nOfficer 3 : Catch him!\n\nThey shot your arm.You've been caught
player.HP = player.HP - player.HP ;
ui.hpLabelNum.setText("" + player.HP);
ui.choice1.setText("- GAME OVER -");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText("");
//these info tells the program where the next location is.
game.nextPosition1 = "gameOver";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void emergencyExit() {
officer = new OfficerAttack(); //"officer" is a super class, so we put the "OfficerAttack" class in the super class
ui.mainTextArea.setText("You run into an " + officer.name + "!");
ui.choice1.setText("Run");
ui.choice2.setText("Fight");
ui.choice3.setText("");
ui.choice4.setText("");
//these info tells the program where the next location is.
game.nextPosition1 = "breakWindow";
game.nextPosition2 = "fight";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void fight() {
ui.mainTextArea.setText(officer.name + " HP : " + officer.HP + "\n\nWhat do you do ?");
ui.choice1.setText("Run");
ui.choice2.setText("Attack");
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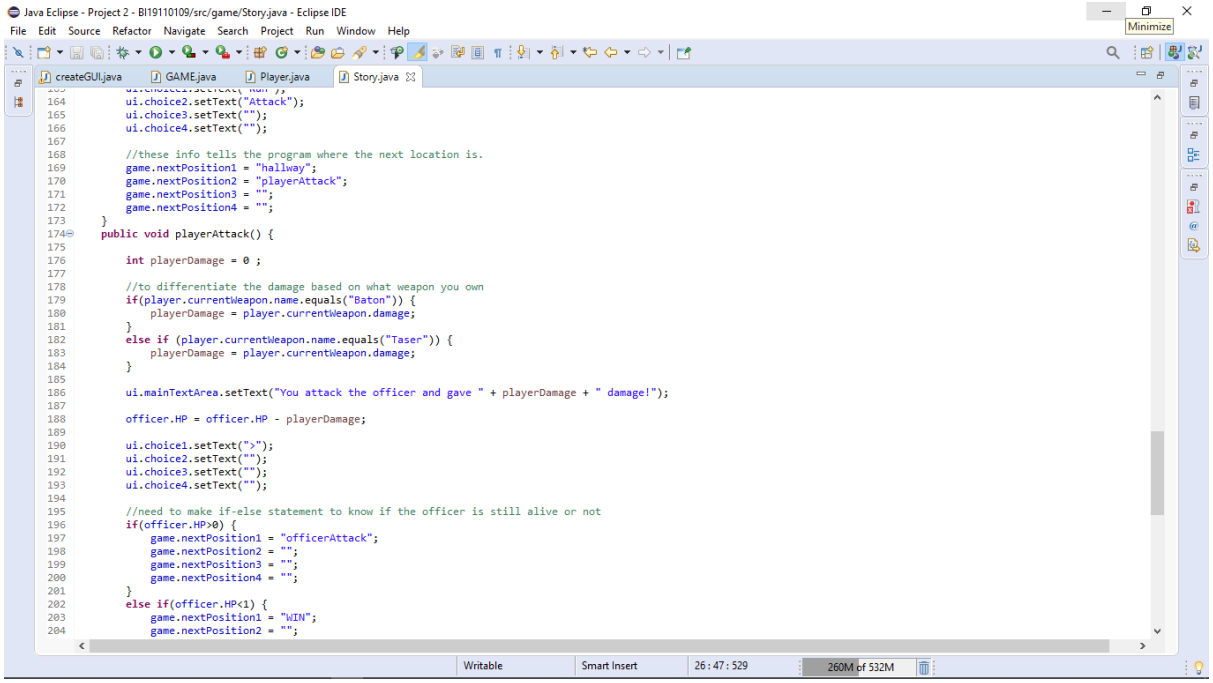
Java Eclipse - Project 2 - BI19110109/src/game/Story.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
createGUI.java GAME.java Player.java Story.java
Minimize
ui.choice2.setText("Attack");
ui.choice3.setText("");
ui.choice4.setText("");
//these info tells the program where the next location is.
game.nextPosition1 = "hallway";
game.nextPosition2 = "playerAttack";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
public void playerAttack() {
int playerDamage = 0 ;
//to differentiate the damage based on what weapon you own
if(player.currentWeapon.name.equals("Baton")) {
playerDamage = player.currentWeapon.damage;
}
else if (player.currentWeapon.name.equals("Taser")) {
playerDamage = player.currentWeapon.damage;
}
ui.mainTextArea.setText("You attack the officer and gave " + playerDamage + " damage!");
officer.HP = officer.HP - playerDamage;
ui.choice1.setText(">");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText("");
//need to make if-else statement to know if the officer is still alive or not
if(officer.HP>0) {
game.nextPosition1 = "officerAttack";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
else if(officer.HP<1) {
game.nextPosition1 = "WIN";
game.nextPosition2 = "";
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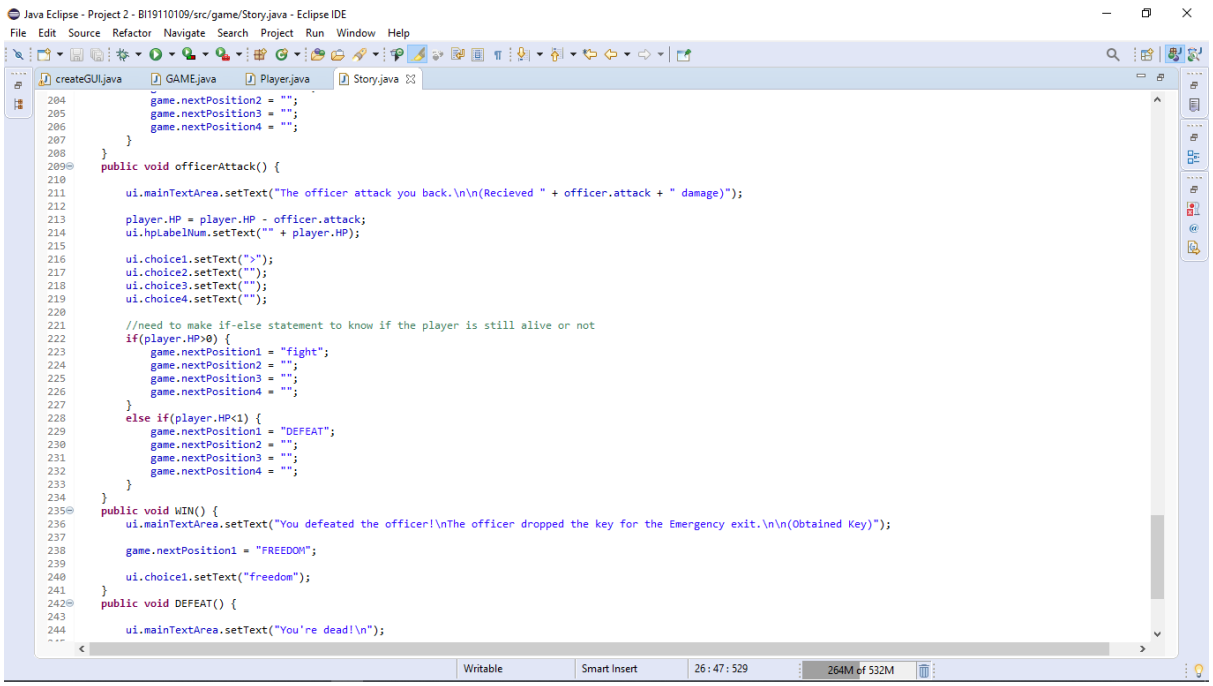
Java Eclipse - Project 2 - BI19110109/src/game/Story.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
createGUI.java GAME.java Player.java Story.java
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
}
public void officerAttack() {
ui.mainTextArea.setText("The officer attack you back.\n\n(Recieved " + officer.attack + " damage)");
player.HP = player.HP - officer.attack;
ui.hpLabelNum.setText("" + player.HP);
ui.choice1.setText(">");
ui.choice2.setText("");
ui.choice3.setText("");
ui.choice4.setText("");
//need to make if-else statement to know if the player is still alive or not
if(player.HP>0) {
game.nextPosition1 = "fight";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
else if(player.HP<1) {
game.nextPosition1 = "DEFEAT";
game.nextPosition2 = "";
game.nextPosition3 = "";
game.nextPosition4 = "";
}
}
public void WIN() {
ui.mainTextArea.setText("You defeated the officer!\nThe officer dropped the key for the Emergency exit.\n\n(Obtained Key)");
game.nextPosition1 = "FREEDOM";
ui.choice1.setText("freedom");
}
public void DEFEAT() {
ui.mainTextArea.setText("You're dead!\n");
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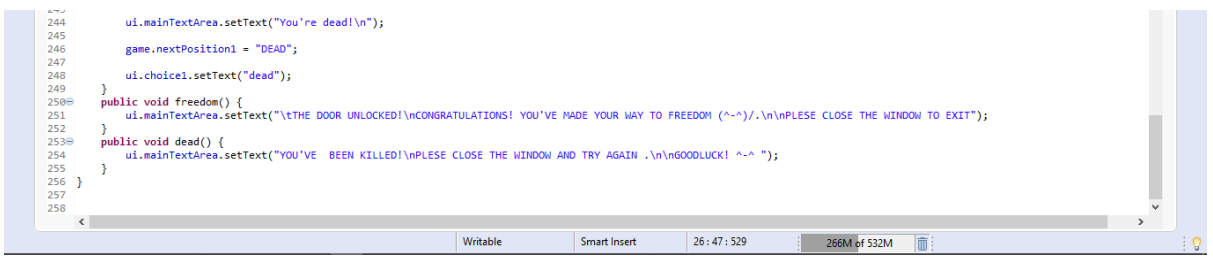
ui.mainTextArea.setText("You're dead!\n");
game.nextPosition1 = "DEAD";
ui.choice1.setText("dead");
}
public void freedom() {
ui.mainTextArea.setText("\tTHE DOOR UNLOCKED!\nCONGRATULATIONS! YOU'VE MADE YOUR WAY TO FREEDOM (^-^)/.\n\nPLESE CLOSE THE WINDOW TO EXIT");
}
public void dead() {
ui.mainTextArea.setText("YOU'VE BEEN KILLED!\nPLESE CLOSE THE WINDOW AND TRY AGAIN .\n\nGOODLUCK! ^-^ ");
}
}
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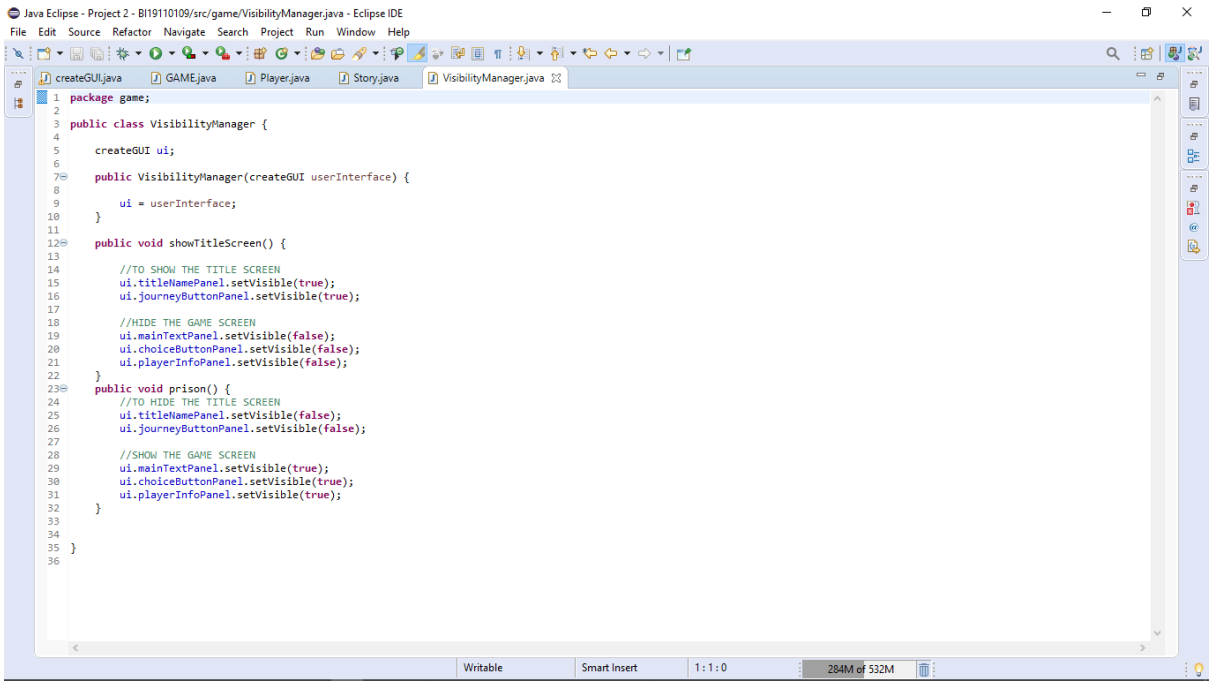
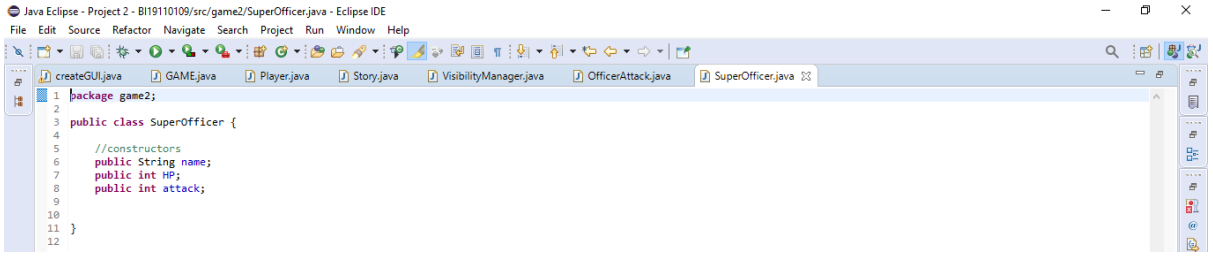
Class VisibilityManager

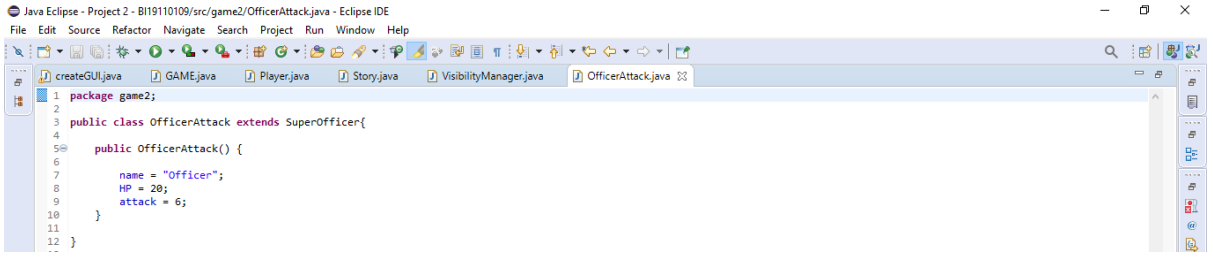


Package = game2

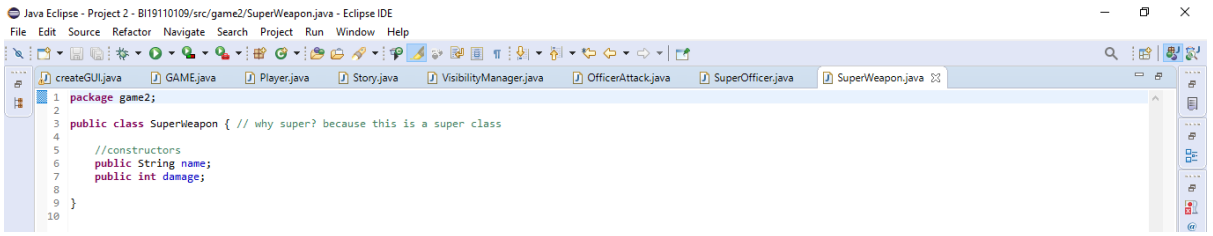
class SuperOfficer



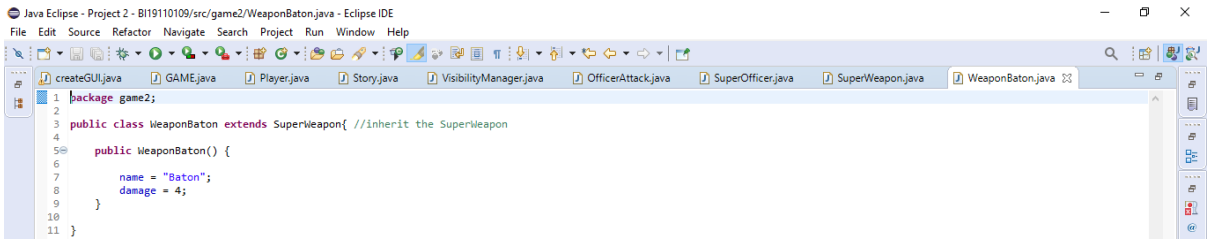
class OfficerAttack



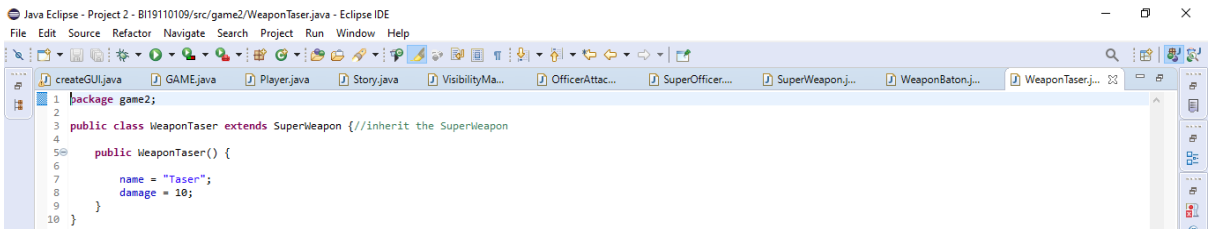
class SuperWeapon



class WeaponBaton

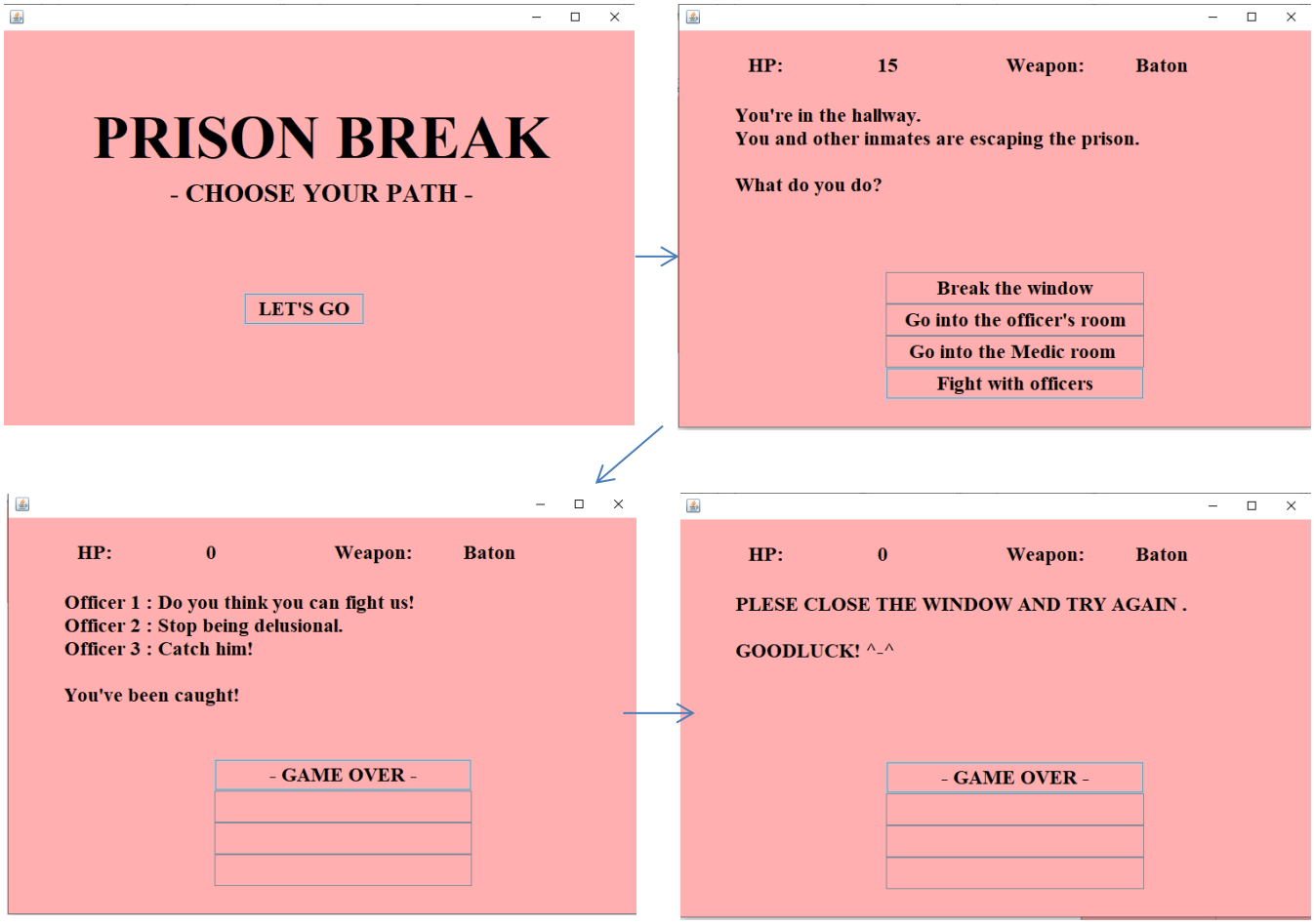


Class WeaponTaser



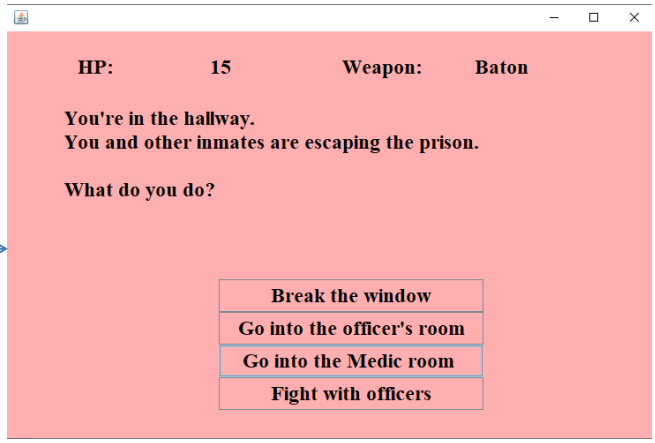
OUTPUT

WAY 1:


PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO
HP: 15 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 0 Weapon: Baton
Officer 1 : Do you think you can fight us!
Officer 2 : Stop being delusional.
Officer 3 : Catch him!
You've been caught!
- GAME OVER -
HP: 0 Weapon: Baton
PLESE CLOSE THE WINDOW AND TRY AGAIN .
GOODLUCK! ^-^
- GAME OVER -

WAY 2:

PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO


HP: 15 Weapon: Baton
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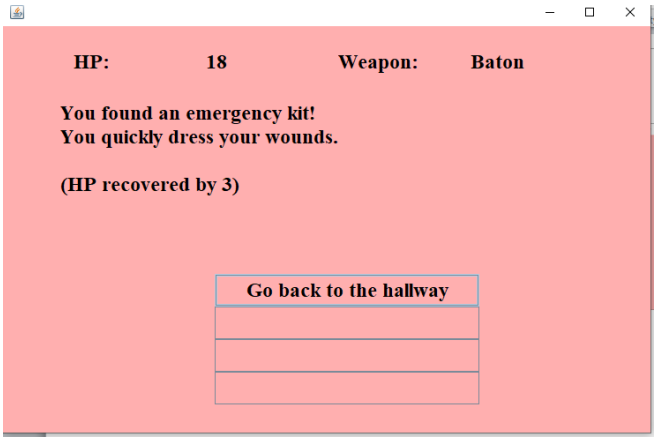
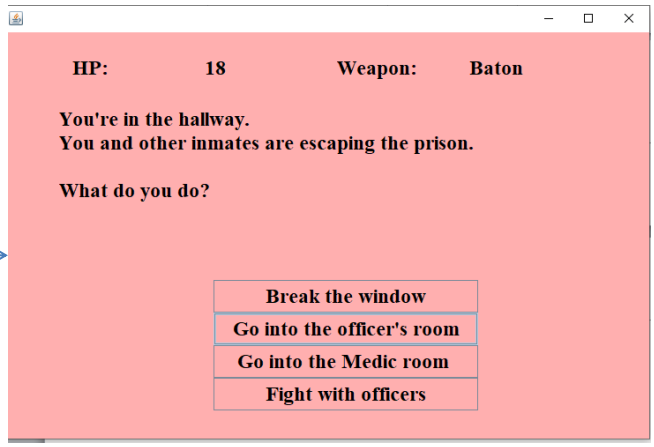
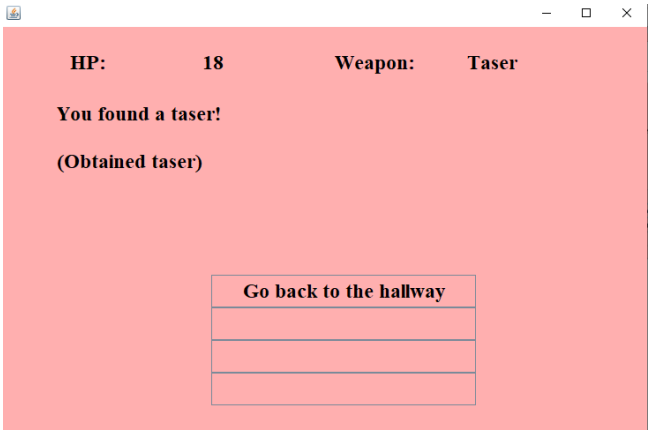
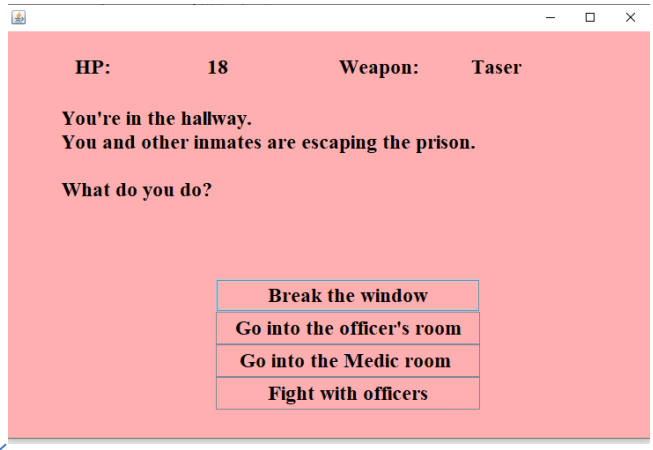

HP: 18 Weapon: Baton
You found an emergency kit!
You quickly dress your wounds.
(HP recovered by 3)
Go back to the hallway


HP: 18 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers


HP: 18 Weapon: Taser
You found a taser!
(Obtained taser)
Go back to the hallway


HP: 18 Weapon: Taser
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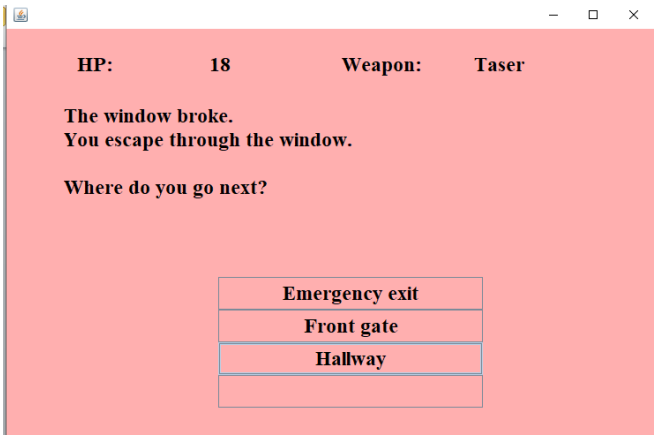
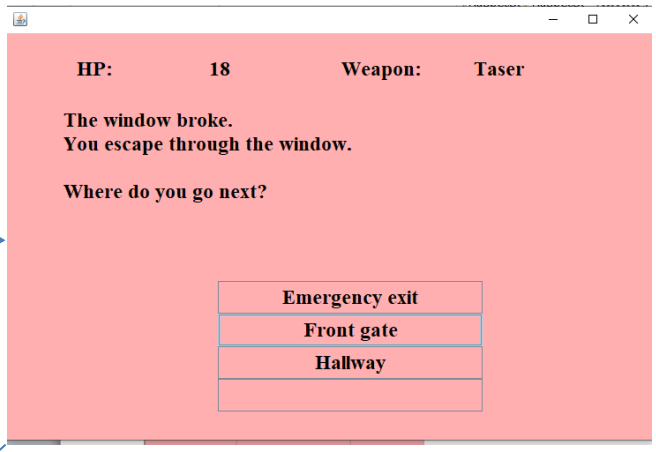
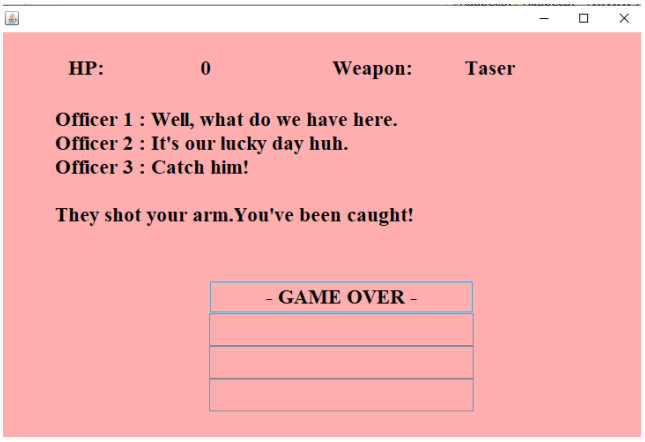
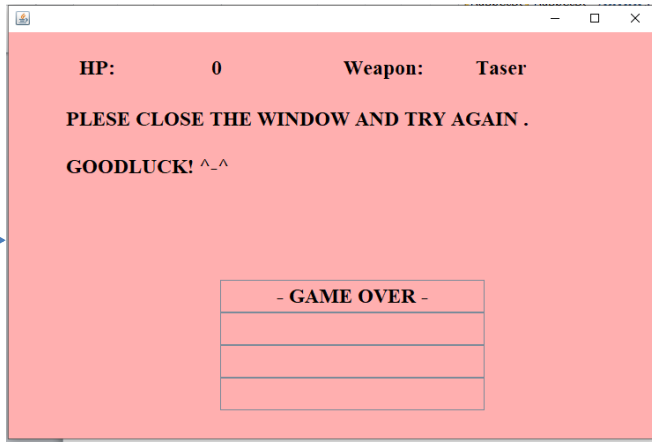
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers

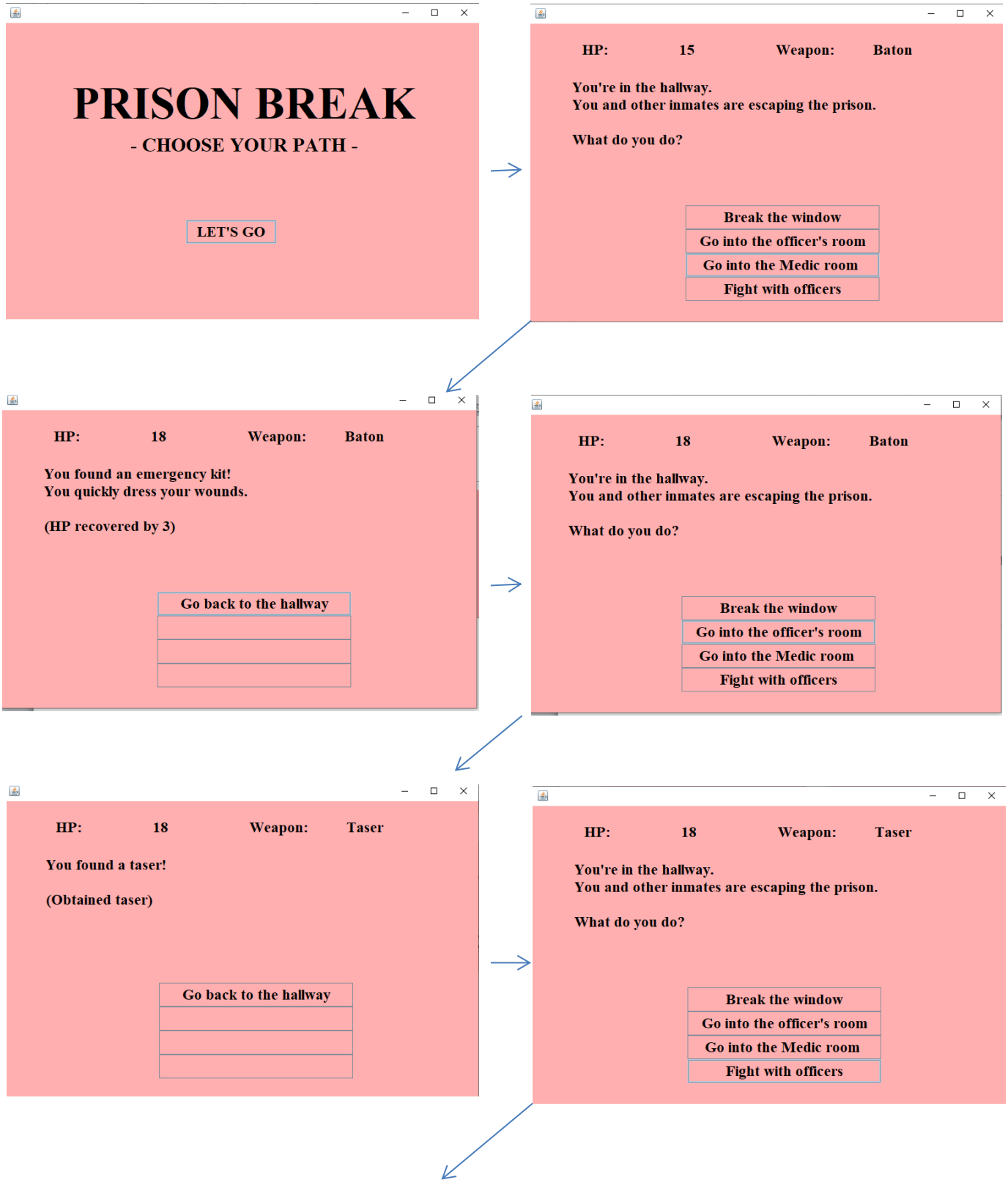

HP: 18 Weapon: Taser
The window broke.
You escape through the window.
Where do you go next?
Emergency exit
Front gate
Hallway

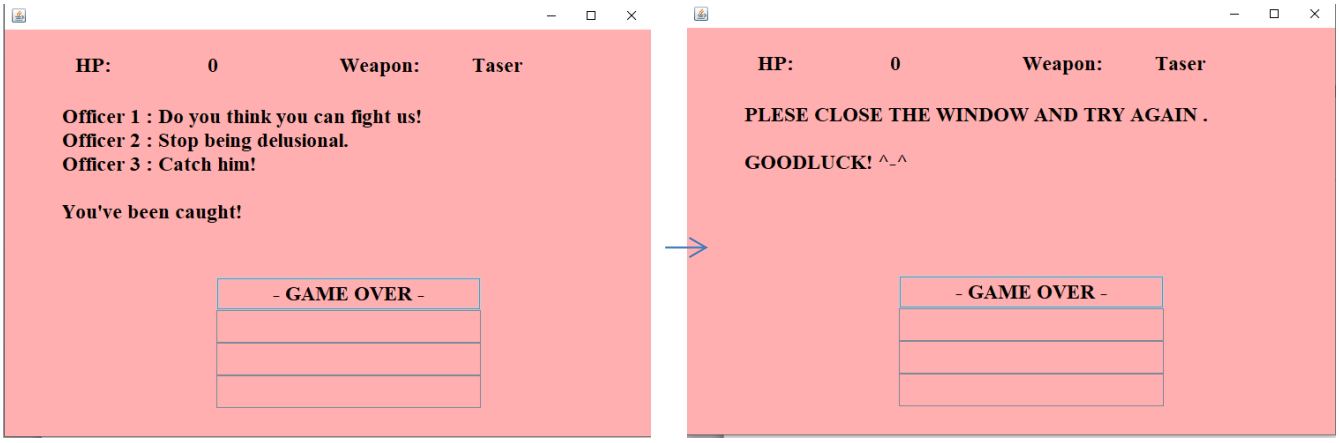

HP: 18 Weapon: Taser
The window broke.
You escape through the window.
Where do you go next?
Emergency exit
Front gate
Hallway


HP: 0 Weapon: Taser
Officer 1 : Well, what do we have here.
Officer 2 : It's our lucky day huh.
Officer 3 : Catch him!
They shot your arm.You've been caught!
- GAME OVER -

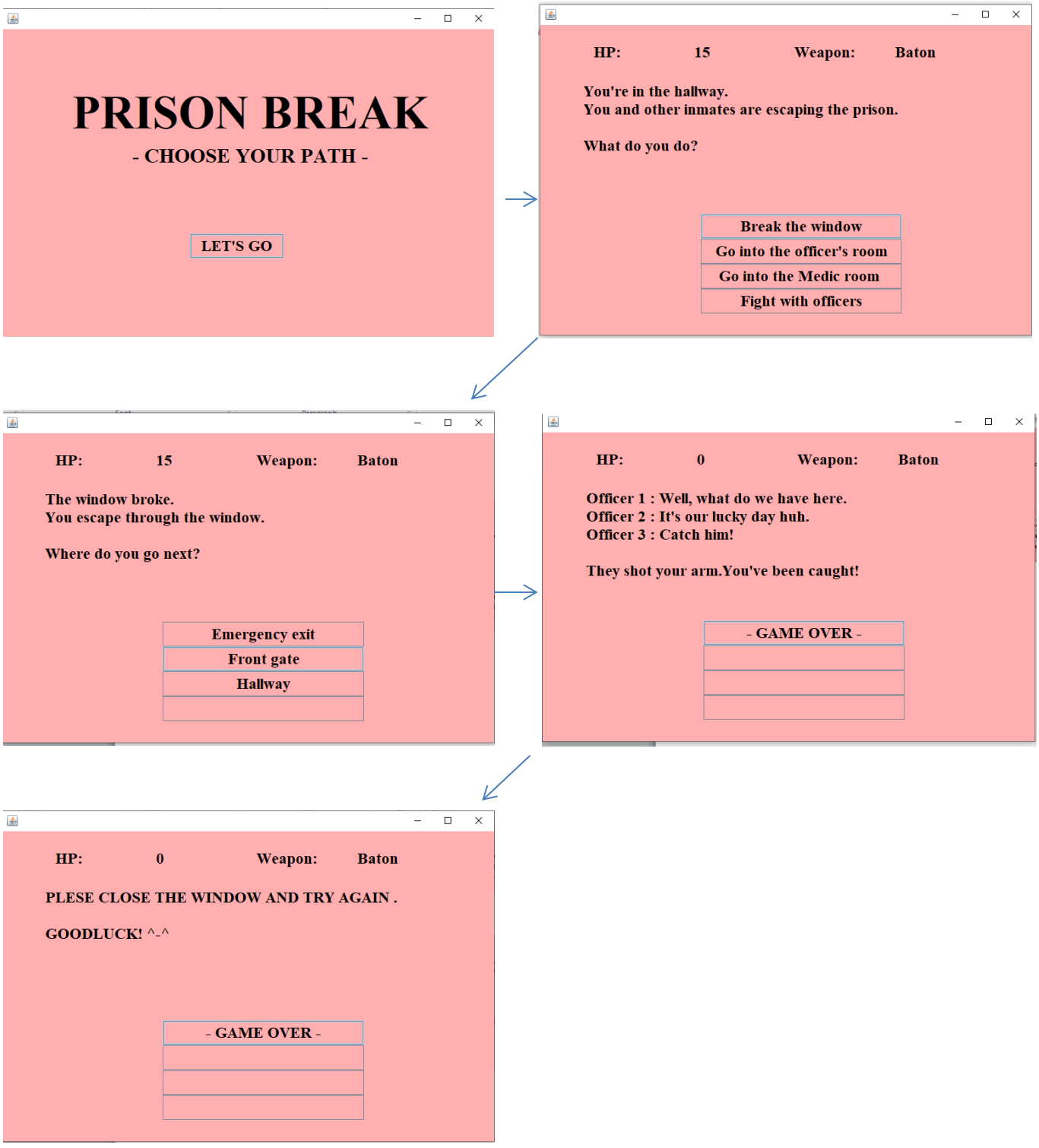

HP: 0 Weapon: Taser
PLESE CLOSE THE WINDOW AND TRY AGAIN .
GOODLUCK! ^_^
- GAME OVER -

WAY 3:

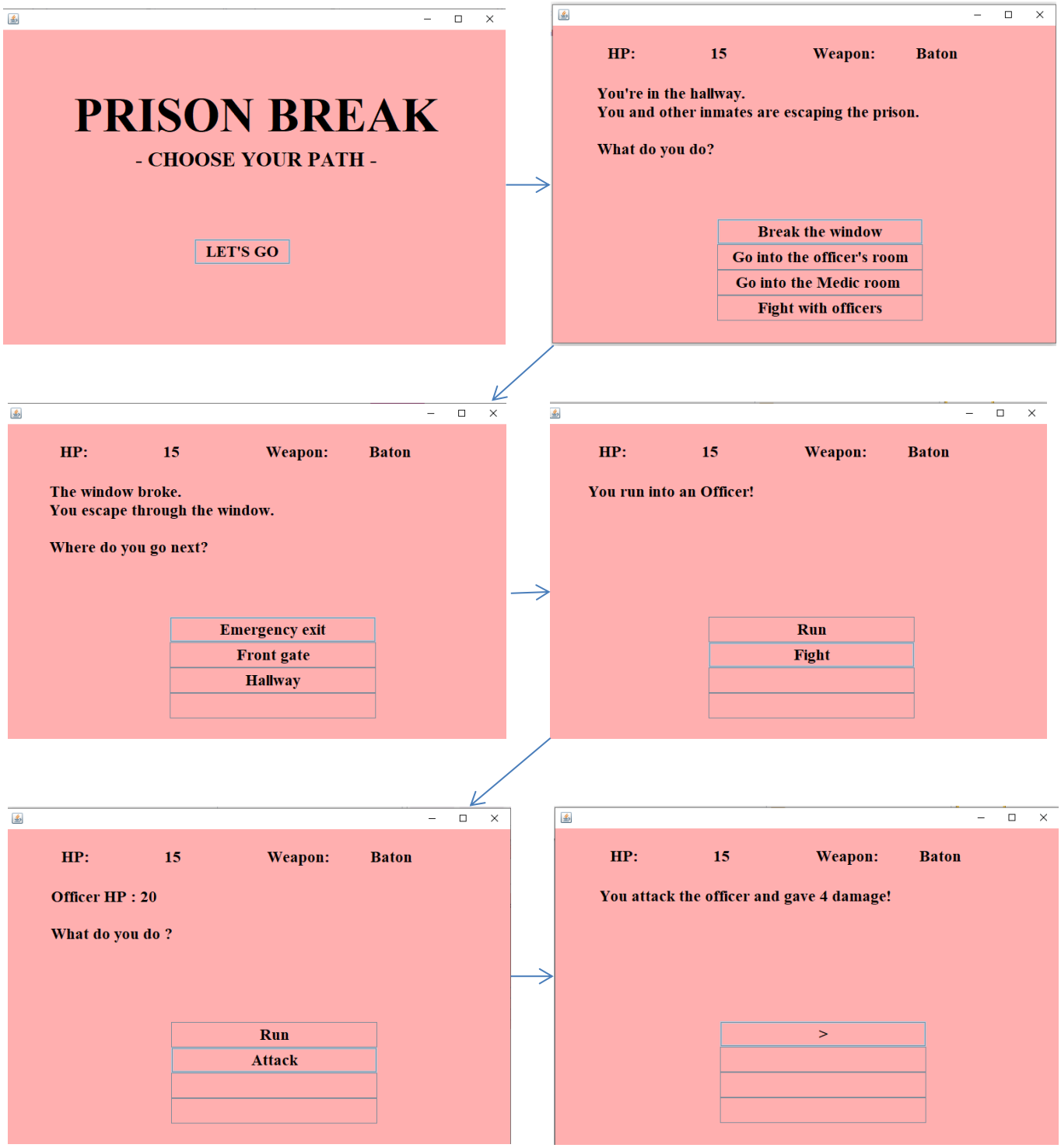

PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO
HP: 15 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 18 Weapon: Baton
You found an emergency kit!
You quickly dress your wounds.
(HP recovered by 3)
Go back to the hallway
HP: 18 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 18 Weapon: Taser
You found a taser!
(Obtained taser)
Go back to the hallway
HP: 18 Weapon: Taser
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers

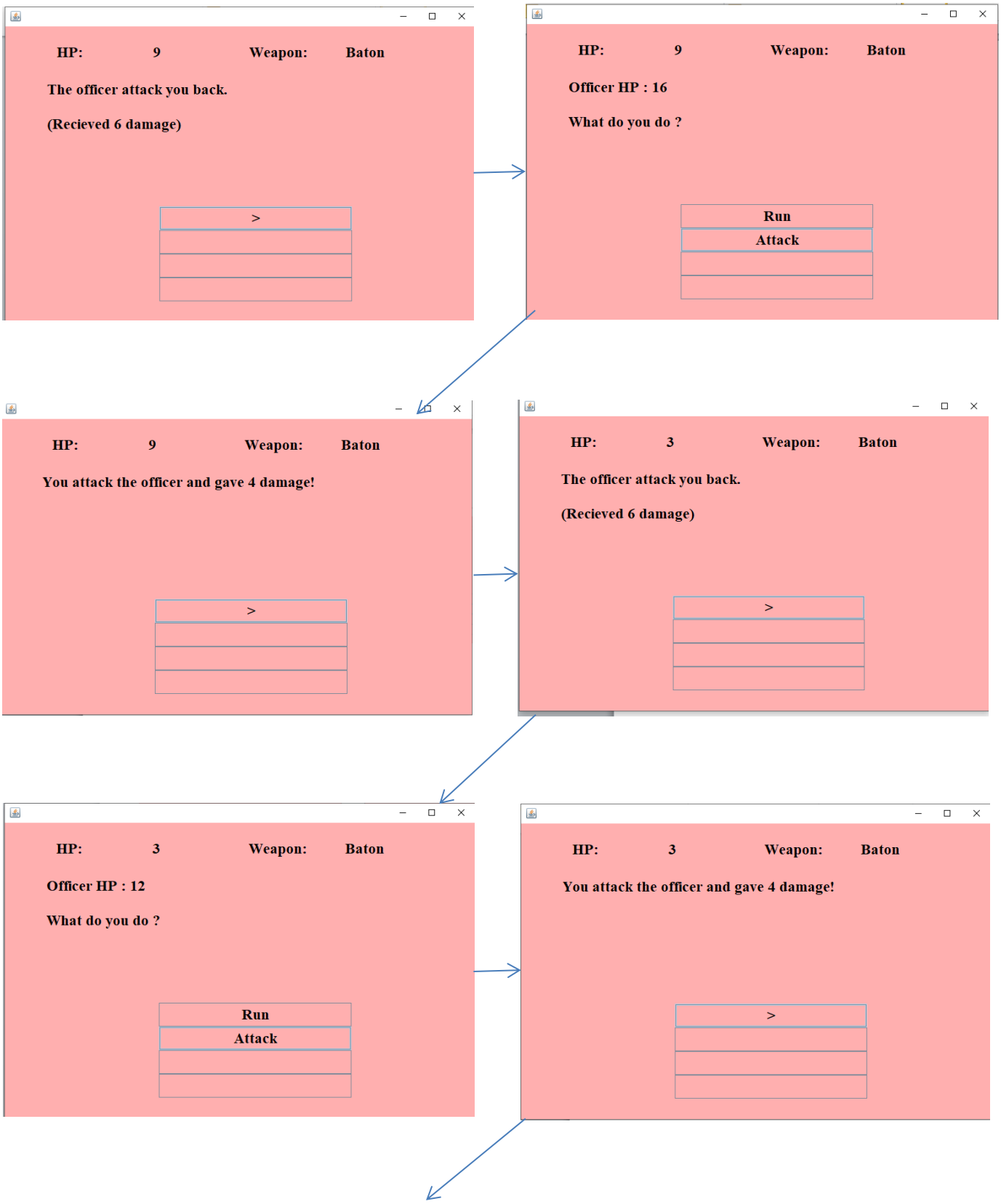

HP: 0 Weapon: Taser
Officer 1 : Do you think you can fight us!
Officer 2 : Stop being delusional.
Officer 3 : Catch him!
You've been caught!
- GAME OVER -
HP: 0 Weapon: Taser
PLESE CLOSE THE WINDOW AND TRY AGAIN .
GOODLUCK! ^-^
- GAME OVER -

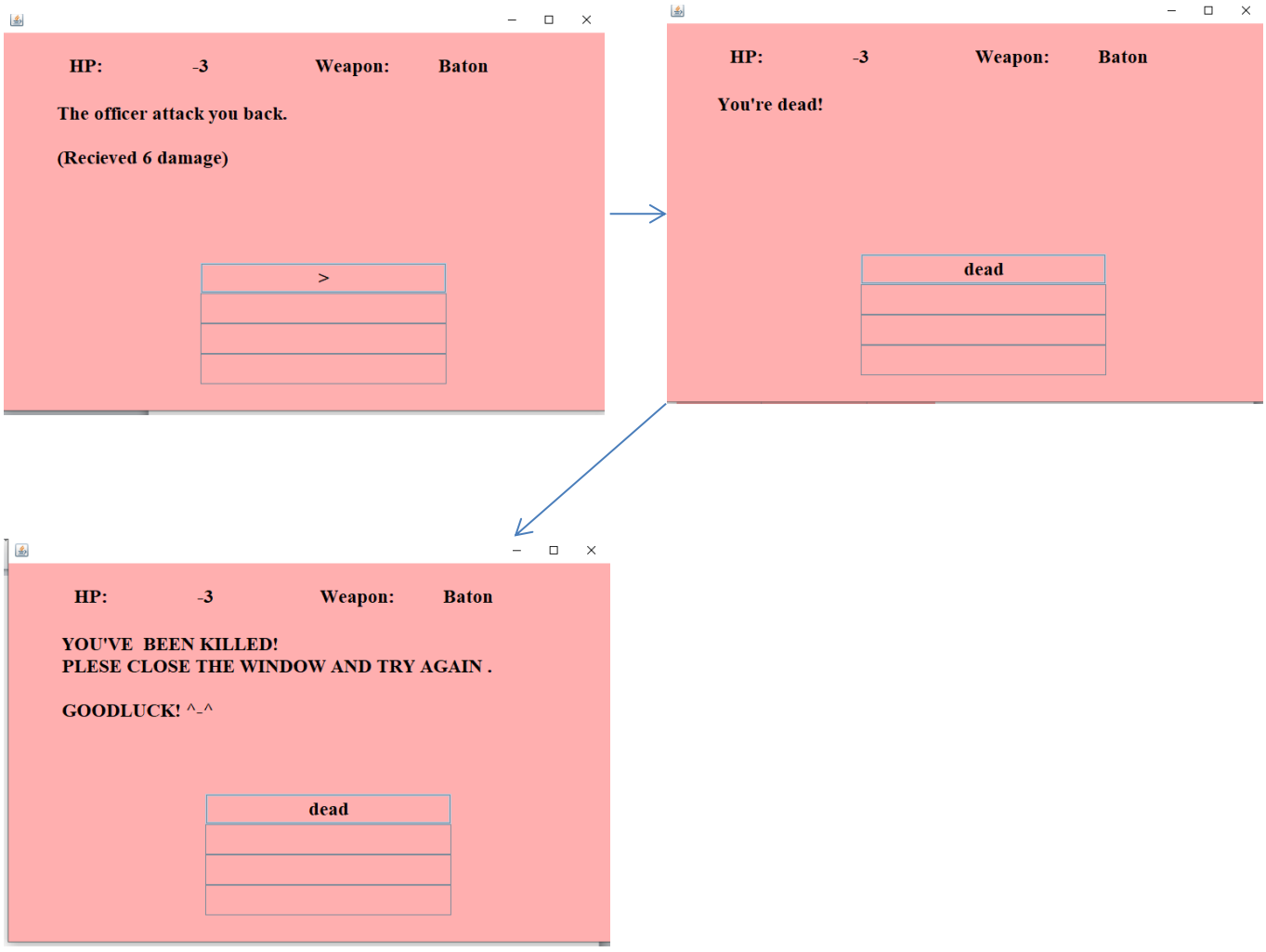
WAY 4:


PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO
HP: 15 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 15 Weapon: Baton
The window broke.
You escape through the window.
Where do you go next?
Emergency exit
Front gate
Hallway
HP: 0 Weapon: Baton
Officer 1 : Well, what do we have here.
Officer 2 : It's our lucky day huh.
Officer 3 : Catch him!
They shot your arm.You've been caught!
- GAME OVER -
HP: 0 Weapon: Baton
PLESE CLOSE THE WINDOW AND TRY AGAIN .
GOODLUCK! ^-^
- GAME OVER -

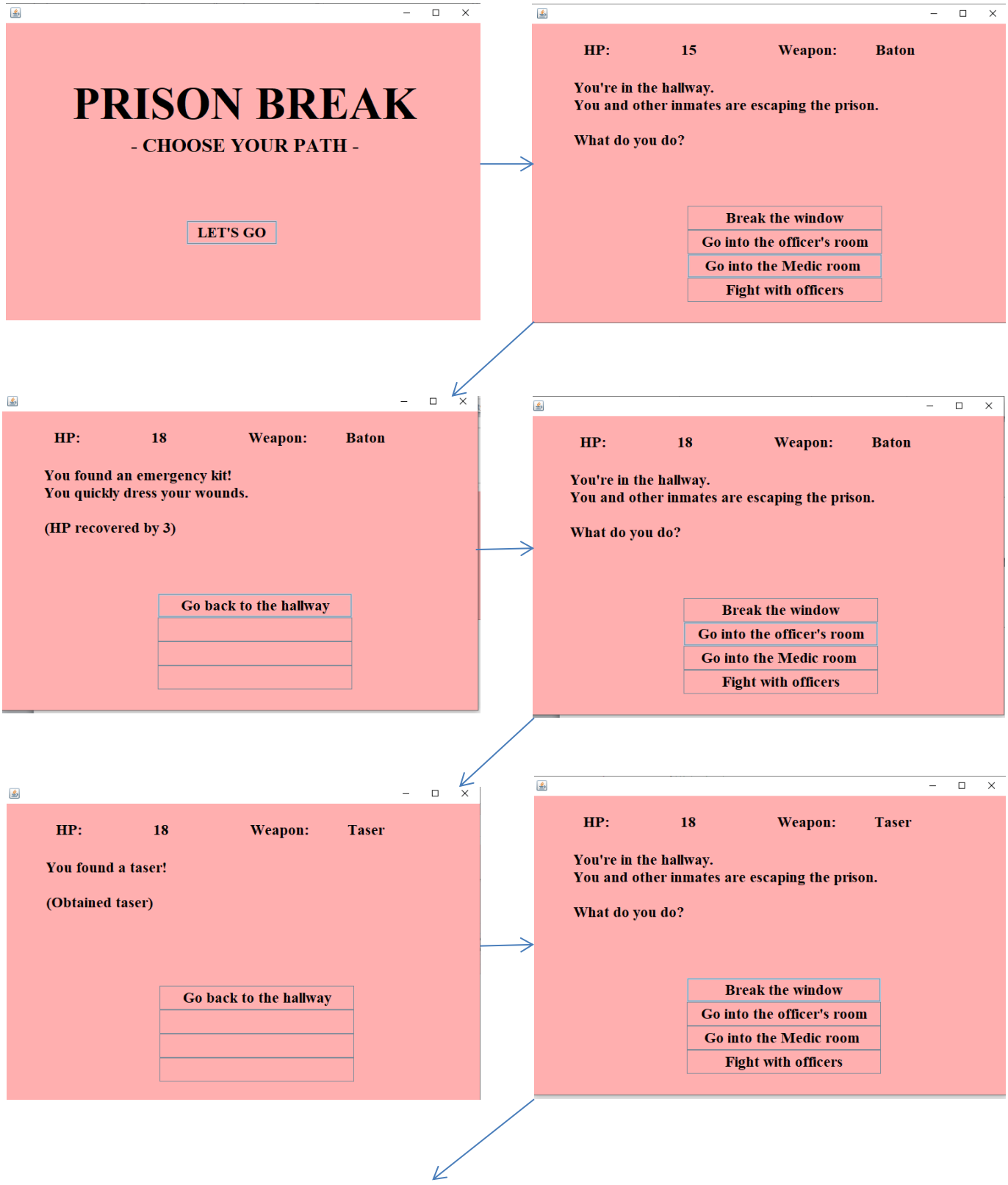
WAY 5:

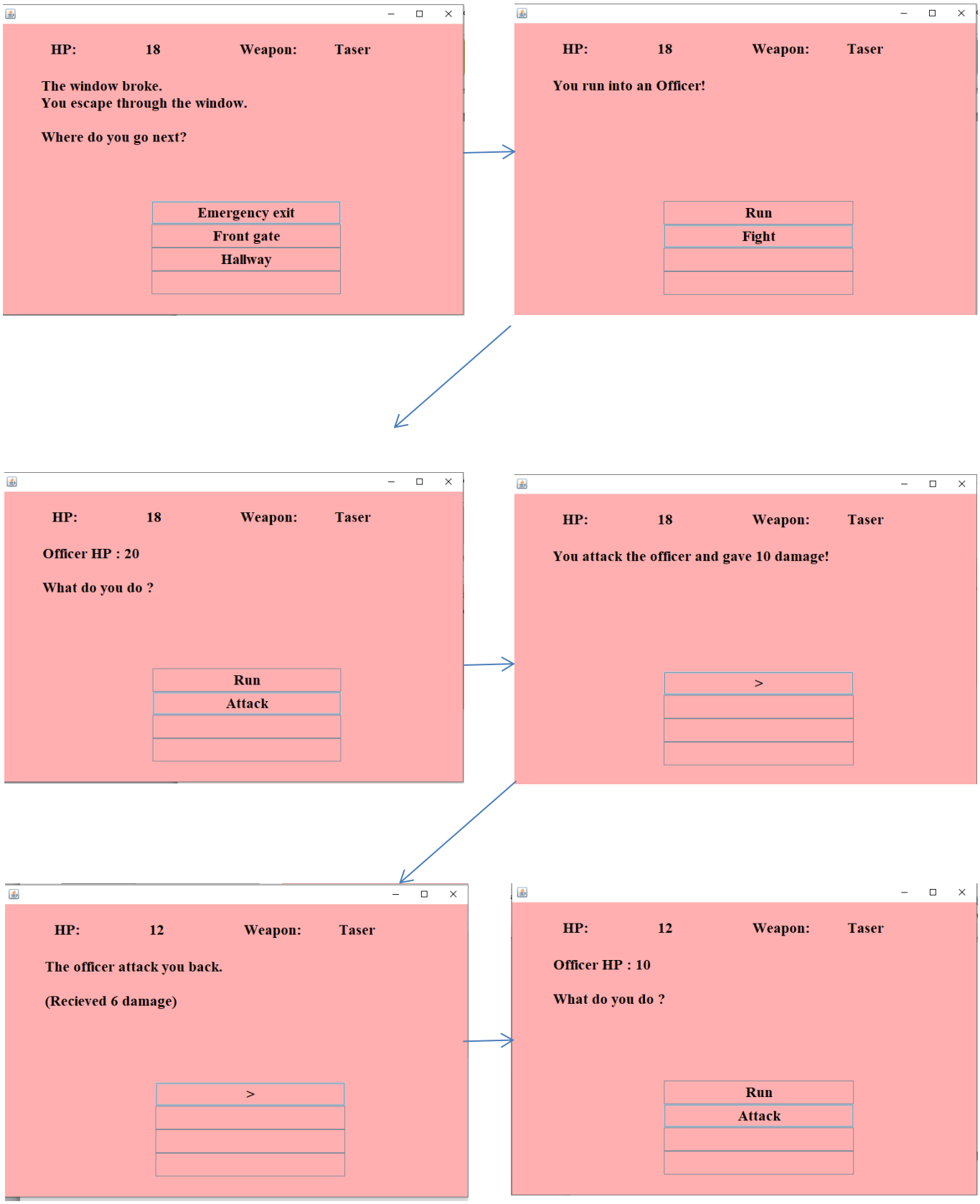

PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO
HP: 15 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 15 Weapon: Baton
The window broke.
You escape through the window.
Where do you go next?
Emergency exit
Front gate
Hallway
HP: 15 Weapon: Baton
You run into an Officer!
Run
Fight
HP: 15 Weapon: Baton
Officer HP : 20
What do you do ?
Run
Attack
HP: 15 Weapon: Baton
You attack the officer and gave 4 damage!
>

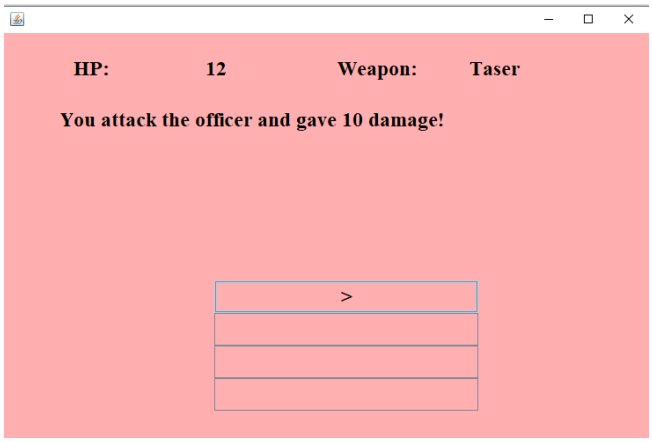

HP: 9 Weapon: Baton
The officer attack you back.
(Recieved 6 damage)
>
HP: 9 Weapon: Baton
Officer HP : 16
What do you do ?
Run
Attack
HP: 9 Weapon: Baton
You attack the officer and gave 4 damage!
>
HP: 3 Weapon: Baton
The officer attack you back.
(Recieved 6 damage)
>
HP: 3 Weapon: Baton
Officer HP : 12
What do you do ?
Run
Attack
HP: 3 Weapon: Baton
You attack the officer and gave 4 damage!
>

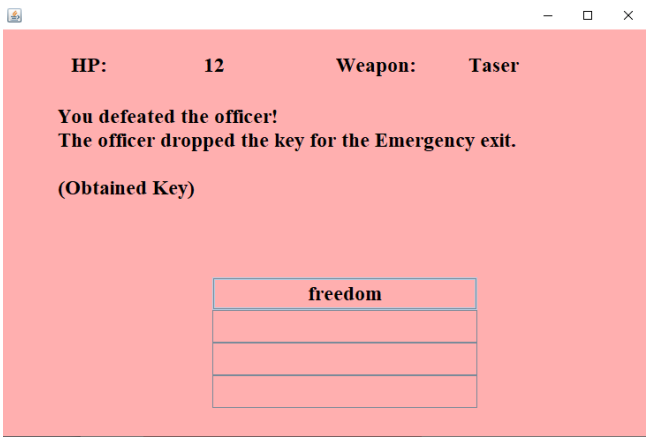

HP: -3 Weapon: Baton
The officer attack you back.
(Recieved 6 damage)
>
HP: -3 Weapon: Baton
You're dead!
dead
HP: -3 Weapon: Baton
YOU'VE BEEN KILLED!
PLESE CLOSE THE WINDOW AND TRY AGAIN .
GOODLUCK! ^-^
dead

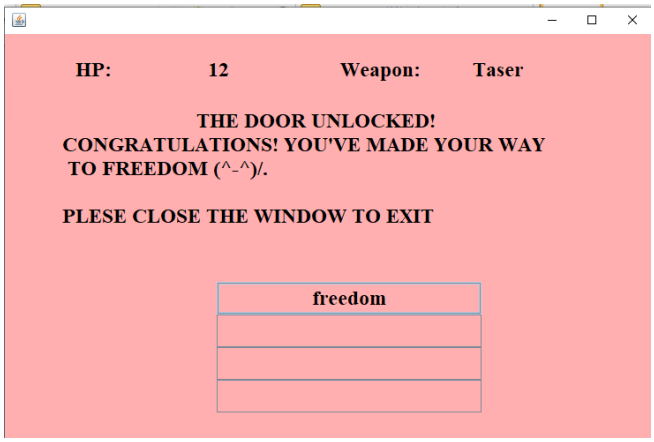
WAY 6:


PRISON BREAK
- CHOOSE YOUR PATH -
LET'S GO
HP: 15 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 18 Weapon: Baton
You found an emergency kit!
You quickly dress your wounds.
(HP recovered by 3)
Go back to the hallway
HP: 18 Weapon: Baton
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers
HP: 18 Weapon: Taser
You found a taser!
(Obtained taser)
Go back to the hallway
HP: 18 Weapon: Taser
You're in the hallway.
You and other inmates are escaping the prison.
What do you do?
Break the window
Go into the officer's room
Go into the Medic room
Fight with officers


HP: 18 Weapon: Taser
The window broke.
You escape through the window.
Where do you go next?
Emergency exit
Front gate
Hallway
HP: 18 Weapon: Taser
You run into an Officer!
Run
Fight
HP: 18 Weapon: Taser
Officer HP : 20
What do you do ?
Run
Attack
HP: 18 Weapon: Taser
You attack the officer and gave 10 damage!
>
HP: 12 Weapon: Taser
The officer attack you back.
(Recieved 6 damage)
>
HP: 12 Weapon: Taser
Officer HP : 10
What do you do ?
Run
Attack


HP: 12 Weapon: Taser
You attack the officer and gave 10 damage!
>


HP: 12 Weapon: Taser
You defeated the officer!
The officer dropped the key for the Emergency exit.
(Obtained Key)
freedom


HP: 12 Weapon: Taser
THE DOOR UNLOCKED!
CONGRATULATIONS! YOU'VE MADE YOUR WAY
TO FREEDOM (^-^)/.
PLESE CLOSE THE WINDOW TO EXIT
freedom

OBJECT ORIENTED PROGRAMMING CONCEPT

1. Inheritance
    - Inheritance in Java is a mechanism in which one object acquires all the properties and behaviors of a parent object.
    - It is the ability to create a new class from an existing class.
        - Parent class (Superclass) is the general class i.e. SuperWeapon, SuperOfficer.
        - Children classes (subclass) is the more specific classes i.e. WeaponBaton, WeaponTaser, OfficerAttack.
        - These common classes share many attributes and behaviors (code reusability)

2. Abstraction
    - Abstraction is a process of hiding the implementation details and showing only functionality to the user.
    - It is the ability to represent data at a very conceptual level without any details.
    - Another way, it shows only essential things to the user and hides the internal details, for example, clicking the buttons in the game. User does not know the internal processing about the next action will be.
    - Abstraction lets you focus on what the object does instead of how it does it.

3. Polymorphism
    - Polymorphism in Java is a concept by which we can perform a single action in different ways.
    - A single statement is used to call various methods and the exact method to be called is only known during runtime.