

Zappy AI

Generated by Doxygen 1.9.6



<b>1 Hierarchical Index</b>	<b>1</b>
1.1 Class Hierarchy	1
<b>2 Class Index</b>	<b>3</b>
2.1 Class List	3
<b>3 Class Documentation</b>	<b>5</b>
3.1 Action.Action Class Reference	5
3.1.1 Detailed Description	5
3.2 AI.AI Class Reference	6
3.2.1 Detailed Description	6
3.2.2 Constructor & Destructor Documentation	6
3.2.2.1 __init__()	6
3.2.3 Member Function Documentation	7
3.2.3.1 run()	7
3.2.3.2 serverCommunicationInThread()	7
3.3 API.API Class Reference	7
3.3.1 Detailed Description	8
3.3.2 Constructor & Destructor Documentation	8
3.3.2.1 __init__()	8
3.3.3 Member Function Documentation	8
3.3.3.1 close()	9
3.3.3.2 connect()	9
3.3.3.3 initConnection()	9
3.3.3.4 receiveData()	10
3.3.3.5 sendData()	10
3.4 APIException.APIException Class Reference	10
3.5 ArgsException.ArgsException Class Reference	10
3.5.1 Detailed Description	11
3.5.2 Constructor & Destructor Documentation	11
3.5.2.1 __init__()	11
3.6 IError.IError Class Reference	11
3.6.1 Detailed Description	12
3.6.2 Constructor & Destructor Documentation	12
3.6.2.1 __init__()	12
3.6.3 Member Function Documentation	12
3.6.3.1 __repr__()	12
3.6.3.2 __str__()	13
3.7 Inventory.Inventory Class Reference	13
3.7.1 Detailed Description	14
3.7.2 Constructor & Destructor Documentation	14
3.7.2.1 __init__()	14
3.7.3 Member Function Documentation	15

3.7.3.1 __add__()	15
3.7.3.2 __eq__()	15
3.7.3.3 __str__()	15
3.7.3.4 addAnObject()	16
3.7.3.5 countStones()	16
3.7.3.6 hasMoreStones()	16
3.7.3.7 removeAnObject()	16
3.7.3.8 toStr()	17
3.7.3.9 updateCaseContent()	17
3.7.3.10 updateInventory()	17
3.8 Item.Item Class Reference	17
3.8.1 Detailed Description	18
3.9 Mode.Mode Class Reference	18
3.10 Player.Player Class Reference	19
3.10.1 Detailed Description	20
3.10.2 Constructor & Destructor Documentation	22
3.10.2.1 __init__()	22
3.10.3 Member Function Documentation	22
3.10.3.1 __str__()	22
3.10.3.2 askSlavesForInventory()	22
3.10.3.3 broadcast()	23
3.10.3.4 checkIfEnoughFood()	23
3.10.3.5 chooseAction()	23
3.10.3.6 cmdInventory()	23
3.10.3.7 completeTeam()	24
3.10.3.8 connectMissingPlayers()	24
3.10.3.9 connectNbr()	24
3.10.3.10 dropping()	24
3.10.3.11 eject()	25
3.10.3.12 fork()	25
3.10.3.13 handleElevation()	25
3.10.3.14 handleResponse()	25
3.10.3.15 handleResponseBroadcast()	26
3.10.3.16 hasSomethingHappened()	26
3.10.3.17 incantation()	26
3.10.3.18 look()	26
3.10.3.19 lookingForFood()	27
3.10.3.20 lookingForStones()	27
3.10.3.21 moveForward()	27
3.10.3.22 none()	27
3.10.3.23 regroupAction()	28
3.10.3.24 set()	28

3.10.3.25 slavesReponses()	28
3.10.3.26 take()	28
3.10.3.27 turnLeft()	29
3.10.3.28 turnRight()	29
3.10.3.29 updateBroadcastReceived()	29
3.10.3.30 updateEjectionReceived()	29
3.10.3.31 updateInventory()	30
3.10.3.32 updateLevel()	30
3.10.3.33 updateMode()	30
3.10.3.34 updateModeLeader()	30
3.10.3.35 updateModeSlave()	31
3.10.3.36 updateVision()	31
3.10.3.37 waitingDrop()	31
3.10.3.38 waitingEveryone()	31
3.11 PlayerException.PlayerDeathException Class Reference	32
3.11.1 Detailed Description	32
3.11.2 Constructor & Destructor Documentation	32
3.11.2.1 __init__()	32
3.12 PlayerException.PlayerException Class Reference	32
3.12.1 Detailed Description	33
3.12.2 Constructor & Destructor Documentation	33
3.12.2.1 __init__()	33
3.13 Role.Role Class Reference	33
<b>Index</b>	<b>35</b>



# Chapter 1

## Hierarchical Index

### 1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

AI.AI . . . . .	6
API.API . . . . .	7
Exception	
IError.IError . . . . .	11
Inventory.Inventory . . . . .	13
Player.Player . . . . .	19
Enum	
Action.Action . . . . .	5
Item.Item . . . . .	17
Mode.Mode . . . . .	18
Role.Role . . . . .	33
IError	
APIException.APIException . . . . .	10
ArgsException.ArgsException . . . . .	10
PlayerException.PlayerException . . . . .	32
PlayerException.PlayerDeathException . . . . .	32





## Chapter 2

# Class Index

### 2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Action.Action	5
AI.AI	6
API.API	7
APIException.APIException	10
ArgsException.ArgsException	10
IError.IError	11
Inventory.Inventory	
EPITECH PROJECT, 2024 Zappy File description: Inventory	13
Item.Item	17
Mode.Mode	18
Player.Player	19
PlayerException.PlayerDeathException	32
PlayerException.PlayerException	32
Role.Role	33



## Chapter 3

# Class Documentation

### 3.1 Action.Action Class Reference

Inheritance diagram for Action.Action:

Collaboration diagram for Action.Action:

#### Static Public Attributes

- str **FORWARD** = "Forward"
- str **RIGHT** = "Right"
- str **LEFT** = "Left"
- str **LOOK** = "Look"
- str **INVENTORY** = "Inventory"
- str **BROADCAST** = "Broadcast"
- str **CONNECT\_NBR** = "Connect\_nbr"
- str **FORK** = "Fork"
- str **EJECT** = "Eject"
- str **TAKE** = "Take"
- str **SET** = "Set"
- str **INCANTATION** = "Incantation"
- str **NONE** = "None"

#### 3.1.1 Detailed Description

Action class

A class to list the actions the player can do

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Enum/Action.py

## 3.2 AI.AI Class Reference

### Public Member Functions

- def `__init__` (self, host, port, teamName)
- def `serverCommunicationInThread` (self)
- def `run` (self)

### Public Attributes

- `api`
- `player`
- `teamName`
- `threads`

### 3.2.1 Detailed Description

```
AI class
A class to handle the AI of the Zappy project

Attributes :
    api : API
        the API to communicate with the server
    player : Player
        the player
    teamName : str
        the name of the team

-----

Methods :
    __init__(host : str, port : int, teamName : str)
        Constructor of the AI class
    run()
        Run the AI
```

### 3.2.2 Constructor & Destructor Documentation

#### 3.2.2.1 `__init__()`

```
def AI.AI.__init__ (
    self,
    host,
    port,
    teamName )

Constructor of the AI class
Assign the API, the player and the team name

Parameters :
    host : str
        the host of the server
    port : int
        the port of the server
    teamName : str
        the name of the team
```

### 3.2.3 Member Function Documentation

#### 3.2.3.1 run()

```
def AI.AI.run (
    self )
```

Run the AI (the main loop)

Connect to the server, initialize the connection and start the main loop

The main loop is an infinite loop that will select an action for the player and send it to the server and after that, it will receive the response from the server and handle it

#### 3.2.3.2 serverCommunicationInThread()

```
def AI.AI.serverCommunicationInThread (
    self )
```

Handle the communication with the server in a thread

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/AI.py

## 3.3 API.API Class Reference

### Public Member Functions

- def [\\_\\_init\\_\\_](#) (self, str host, int port)
- def [connect](#) (self)
- def [sendData](#) (self, str data, int timeout=None)
- def [receiveData](#) (self, float timeout=None)
- def [initConnection](#) (self, str teamName, str fileName="")
- def [close](#) (self)

### 3.3.1 Detailed Description

API class

A class to communicate with the server

Attributes :

```

    host : str
        the host of the server
    port : int
        the port of the server
    inputs : list
        the list of inputs
    outputs : list
        the list of outputs
    sock : socket
        the socket to communicate with the server

```

-----

Methods :

```

    sendData(data : str, timeout : int = None)
        send data to the server
    receiveData(timeout : int = None)
        receive data from the server
    connect(team_name : str)
        connect to the server
    close()
        close the connection

```

### 3.3.2 Constructor & Destructor Documentation

#### 3.3.2.1 \_\_init\_\_()

```

def API.API.__init__ (
    self,
    str host,
    int port )

```

Constructor of the API class

Assign the host and the port of the server

Create the socket to communicate with the server

Connect to the server and add the socket to the inputs and outputs lists

Parameters :

```

    host : str
        the host of the server
    port : int
        the port of the server

```

### 3.3.3 Member Function Documentation

### 3.3.3.1 close()

```
def API.API.close (
    self )
```

Close the connection with the server

### 3.3.3.2 connect()

```
def API.API.connect (
    self )
```

Connect to the server  
Add the socket to the inputs and outputs lists

### 3.3.3.3 initConnection()

```
def API.API.initConnection (
    self,
    str teamName,
    str fileName = "" )
```

Function to do the first exchange with the server

Send the team name to the server  
Receive the client number and the map size from the server  
Print the client number and the map size

Parameters :

- team\_name : str  
the name of the team
- fileName : str  
the file name of logs

Returns :

- client\_num : int  
the client number
- x : int  
the x size of the map
- y : int  
the y size of the map

### 3.3.3.4 receiveData()

```
def API.API.receiveData (
    self,
    float timeout = None )
```

Receive data from the server

Parameters :

- timeout : float
  - the timeout to wait for the server to send data
  - (default is None which means no timeout)

### 3.3.3.5 sendData()

```
def API.API.sendData (
    self,
    str data,
    int timeout = None )
```

Send data to the server

Parameters :

- data : str
  - the data to send
- timeout : int
  - the timeout to wait for the server to be ready to receive data
  - (default is None which means no timeout)

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Network/API.py

## 3.4 APIException.APIException Class Reference

Inheritance diagram for APIException.APIException:

## 3.5 ArgsException.ArgsException Class Reference

Inheritance diagram for ArgsException.ArgsException:

Collaboration diagram for ArgsException.ArgsException:

### Public Member Functions

- def [\\_\\_init\\_\\_](#) (self, message)



### 3.5.1 Detailed Description

ArgsException class

A class to handle exceptions that can occur in the Args  
The ArgsException class inherits from the IError class

Attributes :  
    message : str  
        the message of the exception

### 3.5.2 Constructor & Destructor Documentation

#### 3.5.2.1 \_\_init\_\_()

```
def ArgsException.ArgsException.__init__ (
    self,
    message )
```

Constructor of the ArgsException class

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Errors/ArgsException.py

## 3.6 IError.IError Class Reference

Inheritance diagram for IError.IError:

Collaboration diagram for IError.IError:

### Public Member Functions

- def [\\_\\_init\\_\\_](#) (self, message)
- def [\\_\\_str\\_\\_](#) (self)
- def [\\_\\_repr\\_\\_](#) (self)

### Public Attributes

- **message**

### 3.6.1 Detailed Description

`IErrors` class

A class to handle errors that can occur in the project

Attributes :

`message` : str  
        the message of the error

-----

Methods :

`__str__()`  
        return the message of the error  
    `__repr__()`  
        return the message of the error

### 3.6.2 Constructor & Destructor Documentation

#### 3.6.2.1 `__init__()`

```
def IError.IError.__init__ (
    self,
    message )
```

Constructor of the `IErrors` class

Assign the message of the error

Parameters :

`message` : str  
        the message of the error

### 3.6.3 Member Function Documentation

#### 3.6.3.1 `__repr__()`

```
def IError.IError.__repr__ (
    self )
```

Return the message of the error

### 3.6.3.2 `__str__()`

```
def IError.IError.__str__ (
    self )
```

Return the message of the error

The documentation for this class was generated from the following file:

- `/home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Errors/IError.py`

## 3.7 Inventory.Inventory Class Reference

EPITECH PROJECT, 2024 Zappy File description: Inventory.

### Public Member Functions

- `def __init__` (self, food=10, linemate=0, deraumere=0, sibur=0, mendiane=0, phiras=0, thystame=0, player=0)
- `def __str__` (self)
- `def toStr` (self)
- `def __eq__` (self, inventory)
- `def __add__` (self, inventory)
- `def hasMoreStones` (self, "Inventory" inventory)
- `def updateInventory` (self, str data)
- `def updateCaseContent` (self, list data)
- `def addAnObject` (self, str ressource)
- `def removeAnObject` (self, str ressource)
- `def countStones` (self)

### Public Attributes

- `food`
- `linemate`
- `deraumere`
- `sibur`
- `mendiane`
- `phiras`
- `thystame`
- `player`

### 3.7.1 Detailed Description

EPITECH PROJECT, 2024 Zappy File description: Inventory.

Inventory class

A class to handle the inventory of the player

Attributes :

```
    food : int
        the number of food
    linemate : int
        the number of linemate
    deraumere : int
        the number of deraumere
    sibur : int
        the number of sibur
    mendiane : int
        the number of mendiane
    phiras : int
        the number of phiras
    thystame : int
        the number of thystame
    player : int
        the number of players
```

-----

Methods :

```
    __init__()
        Constructor of the Inventory class
    __str__()
        Print the inventory
    updateInventory(data)
        Update the inventory with the data from the inventory command
    updateCaseContent(data)
        Update the case content with the data from the vision command
    addAnObject(ressource)
        Add an object to the inventory
    removeAnObject(ressource)
        Remove an object from the inventory
```

### 3.7.2 Constructor & Destructor Documentation

#### 3.7.2.1 \_\_init\_\_()

```
def Inventory.Inventory.__init__ (
    self,
    food = 10,
    linemate = 0,
    deraumere = 0,
    sibur = 0,
    mendiane = 0,
    phiras = 0,
    thystame = 0,
    player = 0 )
```

Constructor of the Inventory class

### 3.7.3 Member Function Documentation

#### 3.7.3.1 `__add__()`

```
def Inventory.Inventory.__add__ (
    self,
    inventory )
```

Add two inventories

Parameters :

- inventory : Inventory  
the inventory to add

Returns :

- Inventory  
the self inventory with the inventory added

#### 3.7.3.2 `__eq__()`

```
def Inventory.Inventory.__eq__ (
    self,
    inventory )
```

Compare two inventories

Parameters :

- inventory : Inventory  
the inventory to compare with

Returns :

- bool  
True if the inventories are the same, False otherwise

#### 3.7.3.3 `__str__()`

```
def Inventory.Inventory.__str__ (
    self )
```

Print the inventory

#### 3.7.3.4 addAnObject()

```
def Inventory.Inventory.addAnObject (
    self,
    str ressource )
```

Add an object to the inventory

Parameters :  
    ressource : str  
        the ressource to add

#### 3.7.3.5 countStones()

```
def Inventory.Inventory.countStones (
    self )
```

Count the number of different stones in a case

Returns :  
    int  
        the number of different stones in a case

#### 3.7.3.6 hasMoreStones()

```
def Inventory.Inventory.hasMoreStones (
    self,
    "Inventory" inventory )
```

Check if the self inventory has more stones than the inventory

Parameters :  
    inventory : Inventory  
        the inventory to compare with

Returns :  
    bool  
        True if the self inventory has more stones, False otherwise

#### 3.7.3.7 removeAnObject()

```
def Inventory.Inventory.removeAnObject (
    self,
    str ressource )
```

Remove an object from the inventory

Parameters :  
    ressource : str  
        the ressource to remove

### 3.7.3.8 toStr()

```
def Inventory.Inventory.toStr (
    self )
```

Return the inventory as a string

Returns :  
    str  
        the inventory as a string

### 3.7.3.9 updateCaseContent()

```
def Inventory.Inventory.updateCaseContent (
    self,
    list data )
```

Update the case content with the data from the vision command

Parameters :  
    data : list  
        the data from the vision command

### 3.7.3.10 updateInventory()

```
def Inventory.Inventory.updateInventory (
    self,
    str data )
```

Update the inventory with the data from the inventory command

Parameters :  
    data : str  
        the data from the inventory command

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Player/Inventory.py

## 3.8 Item.Item Class Reference

Inheritance diagram for Item.Item:

Collaboration diagram for Item.Item:

## Static Public Attributes

- str **FOOD** = "food"
- str **LINEMATE** = "linemate"
- str **DERAUMERE** = "deraumere"
- str **SIBUR** = "sibur"
- str **MENDIANE** = "mendiane"
- str **PHIRAS** = "phiras"
- str **THYSTAME** = "thystame"

### 3.8.1 Detailed Description

Item class  
A class to list the items in the game

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Enum/Item.py

## 3.9 Mode.Mode Class Reference

Inheritance diagram for Mode.Mode:

Collaboration diagram for Mode.Mode:

## Static Public Attributes

- int **FOOD** = 0
- int **STONES** = 1
- int **FORKING** = 2
- int **BROADCASTING** = 3
- int **HANDLINGRESPONSE** = 4
- int **WAITING** = 5
- int **ELEVATING** = 6
- int **REGROUP** = 7
- int **DROPPING** = 8
- int **NONE** = 9

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Enum/Mode.py



## 3.10 Player.Player Class Reference

### Public Member Functions

- def `__init__` (self)
- def `__str__` (self)
- def `moveForward` (self, callback=None)
- def `turnRight` (self, callback=None)
- def `turnLeft` (self, callback=None)
- def `look` (self, callback=None)
- def `cmdInventory` (self, callback=None)
- def `broadcast` (self, str message="Hello", callback=None)
- def `connectNbr` (self, callback=None)
- def `fork` (self, callback=None)
- def `eject` (self, callback=None)
- def `take` (self, str resource="food", callback=None)
- def `set` (self, str resource="food", callback=None)
- def `incantation` (self, callback=None)
- def `none` (self)
- def `updateVision` (self, str vision)
- def `updateInventory` (self, str inventory)
- def `updateBroadcastReceived` (self, str message)
- def `updateEjectionReceived` (self, str message)
- def `updateLevel` (self, int level)
- def `handleElevation` (self, str response)
- def `hasSomethingHappened` (self, str response)
- def `handleResponse` (self, str response)
- def `connectMissingPlayers` (self)
- def `completeTeam` (self)
- def `updateModeSlave` (self)
- def `updateModeLeader` (self)
- def `updateMode` (self)
- def `lookingForFood` (self)
- def `lookingForStones` (self)
- def `askSlavesForInventory` (self)
- def `checkIfEnoughFood` (self, str response)
- def `handleResponseBroadcast` (self)
- def `slavesReponses` (self)
- def `waitingEveryone` (self)
- def `waitingDrop` (self)
- def `dropping` (self)
- def `regroupAction` (self)
- def `chooseAction` (self)

### Public Attributes

- `inventory`
- `level`
- `actions`
- `currentAction`
- `commands`
- `currentCommand`
- `callbacks`

- **currentCallback**
- **vision**
- **broadcastReceived**
- **ejectionReceived**
- **isLeader**
- **unusedSlots**
- **currentlyElevating**
- **currentMode**
- **currentFood**
- **nbSlaves**
- **waitingResponse**
- **regroupDirection**
- **arrived**
- **isTimed**
- **nbSlavesHere**
- **callback**

### 3.10.1 Detailed Description

Player class

A class to handle the player

Attributes :

```

inventory : Inventory
    the inventory of the player
level : int
    the level of the player
actions : list
    the actions of the player
currentAction : Action
    the current action of the player
commands : list
    the commands of the player
currentCommand : str
    the current command of the player
callbacks : list
    the callbacks of the player
currentCallback : function
    the current callback of the player
vision : list
    the vision of the player
broadcastReceived : list
    the broadcast received by the player
ejectionReceived : list
    the ejection received by the player
isLeader : Role
    if the player is the leader/undefined/slave
unusedSlots : int
    the unused slots
currentlyElevating : bool
    if the player is currently elevating
currentMode : Mode
    the current mode of the player
currentFood : int
    the current food of the player
nbSlaves : int
    the number of slaves that are alive
waitingResponse : bool
    if the player is waiting for a response
regroupDirection : int
    the direction of the regroup
arrived : bool
    if the player arrived to the regroup
isTimed : bool
    if the player is timed

```

-----

#### Methods :

```

__init__()
    Constructor of the Player class
__str__()
    Print the player
moveForward(callback = None)
    Move the player forward
turnRight(callback = None)
    Turn the player right
turnLeft(callback = None)
    Turn the player left
look(callback = None)
    Look around the player
cmdInventory(callback = None)
    Get the inventory of the player
broadcast(message : str = "Hello", callback = None)
    Broadcast a message
connectNbr(callback = None)
    Connect to the number of players
fork(callback = None)
    Fork the player
eject(callback = None)
    Eject the player
take(resource : str = "food", callback = None)
    Take a resource
set(resource : str = "food", callback = None)
    Set a resource
incantation(callback = None)
    Start the incantation
none()
    Do nothing
updateVision(vision : str)
    Update the vision of the player
updateInventory(inventory : str)
    Update the inventory of the player
updateBroadcastReceived(message : str)
    Update the broadcast received by the player
updateEjectionReceived(message : str)
    Update the ejection received by the player
updateLevel(level : int)
    Update the level of the player
handleElevation(response : str)
    Handle the elevation
hasSomethingHappened(response : str)
    Check if something happened
handleResponse(response : str)
    Handle the response
connectMissingPlayers()
    Connect the missing players
completeTeam()
    Complete the team
updateModeSlave()
    Update the mode of the player when he is a slave
updateModeLeader()
    Update the mode of the player when he is a leader
updateMode()
    Update the mode of the player
lookingForFood()
    Look for food
lookingForStones()
    Look for stones
askSlavesForInventory()
    Ask the slaves for their inventory
checkIfEnoughFood(response : str)
    Check if the slave has enough food
handleResponseBroadcast()
    Handle the response of the broadcast
slavesReponses()
    Handle the leader order as a slave
waitingEveryone()

```

```
        Wait for everyone to finish the regroup
waitingDrop()
        Wait for everyone to finish dropping the stones
dropping()
        Drop the stones
regroupAction()
        Regroup the players
chooseAction()
        Choose the action of the player
```

## 3.10.2 Constructor & Destructor Documentation

### 3.10.2.1 `__init__()`

```
def Player.Player.__init__ (
    self )
```

Constructor of the Player class

## 3.10.3 Member Function Documentation

### 3.10.3.1 `__str__()`

```
def Player.Player.__str__ (
    self )
```

Print the player

### 3.10.3.2 `askSlavesForInventory()`

```
def Player.Player.askSlavesForInventory (
    self )
```

Ask the slaves for their inventory  
The leader will ask the slaves for their inventory

### 3.10.3.3 broadcast()

```
def Player.Player.broadcast (
    self,
    str message = "Hello",
    callback = None )
```

Set the current action to broadcast

Parameters :

- message : str  
the message to broadcast
- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.4 checkIfEnoughFood()

```
def Player.Player.checkIfEnoughFood (
    self,
    str response )
```

Check if the slave has enough food to survive the regroup

### 3.10.3.5 chooseAction()

```
def Player.Player.chooseAction (
    self )
```

Choose the action of the player  
The action is chosen depending on the mode of the player  
The mode is updated before choosing the action

### 3.10.3.6 cmdInventory()

```
def Player.Player.cmdInventory (
    self,
    callback = None )
```

Set the current action to inventory

Parameters :

- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.7 completeTeam()

```
def Player.Player.completeTeam (  
    self )
```

Complete the team

### 3.10.3.8 connectMissingPlayers()

```
def Player.Player.connectMissingPlayers (  
    self )
```

Connect the missing players

### 3.10.3.9 connectNbr()

```
def Player.Player.connectNbr (  
    self,  
    callback = None )
```

Set the current action to connect\_nbr

Parameters :

- `callback` : function  
the callback to call after the action  
(default is None)

### 3.10.3.10 dropping()

```
def Player.Player.dropping (  
    self )
```

Drop the stones

As a leader, you will wait for the slaves to drop the stones

As a slave, you will drop the stones until you have none left

### 3.10.3.11 eject()

```
def Player.Player.eject (
    self,
    callback = None )
```

Set the current action to eject

Parameters :

- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.12 fork()

```
def Player.Player.fork (
    self,
    callback = None )
```

Set the current action to fork

Parameters :

- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.13 handleElevation()

```
def Player.Player.handleElevation (
    self,
    str response )
```

Handle the response of the elevation command

Parameters :

- response : str  
the response from the server

### 3.10.3.14 handleResponse()

```
def Player.Player.handleResponse (
    self,
    str response )
```

Handle the response from the server

Parameters :

- response : str  
the response from the server

### 3.10.3.15 `handleResponseBroadcast()`

```
def Player.Player.handleResponseBroadcast (
    self )
```

Handle the response of the broadcast

### 3.10.3.16 `hasSomethingHappened()`

```
def Player.Player.hasSomethingHappened (
    self,
    str response )
```

Check if something happened to the player

Look if the player is dead, if he received a message or if he was ejected

Parameters :

```
    response : str
        the response from the server
```

### 3.10.3.17 `incantation()`

```
def Player.Player.incantation (
    self,
    callback = None )
```

Set the current action to incantation

Parameters :

```
    callback : function
        the callback to call after the action
        (default is None)
```

### 3.10.3.18 `look()`

```
def Player.Player.look (
    self,
    callback = None )
```

Set the current action to look

Parameters :

```
    callback : function
        the callback to call after the action
        (default is None)
```



### 3.10.3.19 lookingForFood()

```
def Player.Player.lookingForFood (
    self )
```

Look for food  
The player will look for the nearest food in his vision.  
When he finds food, he will go to the case  
where there is food and take it.

### 3.10.3.20 lookingForStones()

```
def Player.Player.lookingForStones (
    self )
```

Look for stones  
The player will look for the case with the most stones in his vision.  
When he finds stones, he will go to the case  
where there are stones and take them.

### 3.10.3.21 moveForward()

```
def Player.Player.moveForward (
    self,
    callback = None )
```

Set the current action to forward

Parameters :  
    callback : function  
            the callback to call after the action  
            (default is None)

### 3.10.3.22 none()

```
def Player.Player.none (
    self )
```

Set the current action to none

### 3.10.3.23 regroupAction()

```
def Player.Player.regroupAction (
    self )
```

Regroup the players

As a leader, you will wait for the slaves to regroup

As a slave, you will regroup with the leader

### 3.10.3.24 set()

```
def Player.Player.set (
    self,
    str resource = "food",
    callback = None )
```

Set the current action to set

Parameters :

- resource : str  
the resource to set
- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.25 slavesReponses()

```
def Player.Player.slavesReponses (
    self )
```

Handle the leader order as a slave

### 3.10.3.26 take()

```
def Player.Player.take (
    self,
    str resource = "food",
    callback = None )
```

Set the current action to take

Parameters :

- resource : str  
the resource to take
- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.27 turnLeft()

```
def Player.Player.turnLeft (
    self,
    callback = None )
```

Set the current action to left

Parameters :

- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.28 turnRight()

```
def Player.Player.turnRight (
    self,
    callback = None )
```

Set the current action to right

Parameters :

- callback : function  
the callback to call after the action  
(default is None)

### 3.10.3.29 updateBroadcastReceived()

```
def Player.Player.updateBroadcastReceived (
    self,
    str message )
```

Update the broadcast received by the player

Parameters :

- message : str  
the message from the server

### 3.10.3.30 updateEjectionReceived()

```
def Player.Player.updateEjectionReceived (
    self,
    str message )
```

Update the ejection received by the player

Parameters :

- message : str  
the message from the server

### 3.10.3.31 updateInventory()

```
def Player.Player.updateInventory (
    self,
    str inventory )
```

Update the inventory of the player with the data from the inventory command

Parameters :

- inventory : str  
the inventory from the server

### 3.10.3.32 updateLevel()

```
def Player.Player.updateLevel (
    self,
    int level )
```

Update the level of the player

Parameters :

- level : int  
the level of the player

### 3.10.3.33 updateMode()

```
def Player.Player.updateMode (
    self )
```

Update the mode of the player

### 3.10.3.34 updateModeLeader()

```
def Player.Player.updateModeLeader (
    self )
```

Update the mode of the player when he is a leader

**3.10.3.35 updateModeSlave()**

```
def Player.Player.updateModeSlave (
    self )
```

Update the mode of the player when he is a slave

**3.10.3.36 updateVision()**

```
def Player.Player.updateVision (
    self,
    str vision )
```

Update the vision of the player with the data from the look command

Parameters :

- vision : str  
the vision from the server

**3.10.3.37 waitingDrop()**

```
def Player.Player.waitingDrop (
    self )
```

Wait for everyone to finish dropping the stones

**3.10.3.38 waitingEveryone()**

```
def Player.Player.waitingEveryone (
    self )
```

Wait for everyone to finish the regroup

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Player/Player.py

## 3.11 PlayerException.PlayerDeathException Class Reference

Inheritance diagram for PlayerException.PlayerDeathException:

Collaboration diagram for PlayerException.PlayerDeathException:

### Public Member Functions

- `def __init__ (self, message)`
- `def __init__ (self, message)`

#### 3.11.1 Detailed Description

PlayerDeathException class

A class to handle the death of the player  
The PlayerDeathException class inherits from the PlayerException class

Attributes :  
    message : str  
        the message of the exception

#### 3.11.2 Constructor & Destructor Documentation

##### 3.11.2.1 \_\_init\_\_()

```
def PlayerException.PlayerDeathException.__init__ (
    self,
    message )
```

Constructor of the PlayerDeathException class

Reimplemented from [PlayerException.PlayerException](#).

The documentation for this class was generated from the following file:

- /home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Player/PlayerException.py

## 3.12 PlayerException.PlayerException Class Reference

Inheritance diagram for PlayerException.PlayerException:

Collaboration diagram for PlayerException.PlayerException:

## Public Member Functions

- `def __init__ (self, message)`

### 3.12.1 Detailed Description

`PlayerException` class

A class to handle exceptions that can occur in the Player  
The `PlayerException` class inherits from the `IError` class

Attributes :  
    `message` : `str`  
        the message of the exception

### 3.12.2 Constructor & Destructor Documentation

#### 3.12.2.1 `__init__()`

```
def PlayerException.PlayerException.__init__ (
    self,
    message )
```

Constructor of the `PlayerException` class

Reimplemented in [PlayerException.PlayerDeathException](#).

The documentation for this class was generated from the following file:

- `/home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Player/PlayerException.py`

## 3.13 Role.Role Class Reference

Inheritance diagram for `Role.Role`:

Collaboration diagram for `Role.Role`:

### Static Public Attributes

- `int UNDEFINED = 0`
- `int LEADER = 1`
- `int SLAVE = 2`

The documentation for this class was generated from the following file:

- `/home/tjerome-rocher/Desktop/Tek2/Zappy/ai/src/Enum/Role.py`





# Index

- `__add__`
    - `Inventory.Inventory`, [15](#)
  - `__eq__`
    - `Inventory.Inventory`, [15](#)
  - `__init__`
    - `AI.AI`, [6](#)
    - `API.API`, [8](#)
    - `ArgsException.ArgsException`, [11](#)
    - `IError.IError`, [12](#)
    - `Inventory.Inventory`, [14](#)
    - `Player.Player`, [22](#)
    - `PlayerException.PlayerDeathException`, [32](#)
    - `PlayerException.PlayerException`, [33](#)
  - `__repr__`
    - `IError.IError`, [12](#)
  - `__str__`
    - `IError.IError`, [12](#)
    - `Inventory.Inventory`, [15](#)
    - `Player.Player`, [22](#)
- `Action.Action`, [5](#)
- `addAnObject`
  - `Inventory.Inventory`, [15](#)
- `AI.AI`, [6](#)
  - `__init__`, [6](#)
  - `run`, [7](#)
  - `serverCommunicationInThread`, [7](#)
- `API.API`, [7](#)
  - `__init__`, [8](#)
  - `close`, [8](#)
  - `connect`, [9](#)
  - `initConnection`, [9](#)
  - `receiveData`, [9](#)
  - `sendData`, [10](#)
- `APIException.APIException`, [10](#)
- `ArgsException.ArgsException`, [10](#)
  - `__init__`, [11](#)
- `askSlavesForInventory`
  - `Player.Player`, [22](#)
- `broadcast`
  - `Player.Player`, [22](#)
- `checkIfEnoughFood`
  - `Player.Player`, [23](#)
- `chooseAction`
  - `Player.Player`, [23](#)
- `close`
  - `API.API`, [8](#)
- `cmdInventory`
  - `Player.Player`, [23](#)
- `completeTeam`
  - `Player.Player`, [23](#)
- `connect`
  - `API.API`, [9](#)
- `connectMissingPlayers`
  - `Player.Player`, [24](#)
- `connectNbr`
  - `Player.Player`, [24](#)
- `countStones`
  - `Inventory.Inventory`, [16](#)
- `dropping`
  - `Player.Player`, [24](#)
- `eject`
  - `Player.Player`, [24](#)
- `fork`
  - `Player.Player`, [25](#)
- `handleElevation`
  - `Player.Player`, [25](#)
- `handleResponse`
  - `Player.Player`, [25](#)
- `handleResponseBroadcast`
  - `Player.Player`, [25](#)
- `hasMoreStones`
  - `Inventory.Inventory`, [16](#)
- `hasSomethingHappened`
  - `Player.Player`, [26](#)
- `IError.IError`, [11](#)
  - `__init__`, [12](#)
  - `__repr__`, [12](#)
  - `__str__`, [12](#)
- `incantation`
  - `Player.Player`, [26](#)
- `initConnection`
  - `API.API`, [9](#)
- `Inventory.Inventory`, [13](#)
  - `__add__`, [15](#)
  - `__eq__`, [15](#)
  - `__init__`, [14](#)
  - `__str__`, [15](#)
  - `addAnObject`, [15](#)
  - `countStones`, [16](#)
  - `hasMoreStones`, [16](#)
  - `removeAnObject`, [16](#)
  - `toStr`, [16](#)
  - `updateCaseContent`, [17](#)

- updateInventory, 17
- Item.Item, 17
- look
  - Player.Player, 26
- lookingForFood
  - Player.Player, 26
- lookingForStones
  - Player.Player, 27
- Mode.Mode, 18
- moveForward
  - Player.Player, 27
- none
  - Player.Player, 27
- Player.Player, 19
  - \_\_init\_\_, 22
  - \_\_str\_\_, 22
  - askSlavesForInventory, 22
  - broadcast, 22
  - checkIfEnoughFood, 23
  - chooseAction, 23
  - cmdInventory, 23
  - completeTeam, 23
  - connectMissingPlayers, 24
  - connectNbr, 24
  - dropping, 24
  - eject, 24
  - fork, 25
  - handleElevation, 25
  - handleResponse, 25
  - handleResponseBroadcast, 25
  - hasSomethingHappened, 26
  - incantation, 26
  - look, 26
  - lookingForFood, 26
  - lookingForStones, 27
  - moveForward, 27
  - none, 27
  - regroupAction, 27
  - set, 28
  - slavesReponses, 28
  - take, 28
  - turnLeft, 28
  - turnRight, 29
  - updateBroadcastReceived, 29
  - updateEjectionReceived, 29
  - updateInventory, 29
  - updateLevel, 30
  - updateMode, 30
  - updateModeLeader, 30
  - updateModeSlave, 30
  - updateVision, 31
  - waitingDrop, 31
  - waitingEveryone, 31
- PlayerException.PlayerDeathException, 32
  - \_\_init\_\_, 32
- PlayerException.PlayerException, 32
  - \_\_init\_\_, 33
- receiveData
  - API.API, 9
- regroupAction
  - Player.Player, 27
- removeAnObject
  - Inventory.Inventory, 16
- Role.Role, 33
- run
  - AI.AI, 7
- sendData
  - API.API, 10
- serverCommunicationInThread
  - AI.AI, 7
- set
  - Player.Player, 28
- slavesReponses
  - Player.Player, 28
- take
  - Player.Player, 28
- toStr
  - Inventory.Inventory, 16
- turnLeft
  - Player.Player, 28
- turnRight
  - Player.Player, 29
- updateBroadcastReceived
  - Player.Player, 29
- updateCaseContent
  - Inventory.Inventory, 17
- updateEjectionReceived
  - Player.Player, 29
- updateInventory
  - Inventory.Inventory, 17
  - Player.Player, 29
- updateLevel
  - Player.Player, 30
- updateMode
  - Player.Player, 30
- updateModeLeader
  - Player.Player, 30
- updateModeSlave
  - Player.Player, 30
- updateVision
  - Player.Player, 31
- waitingDrop
  - Player.Player, 31
- waitingEveryone
  - Player.Player, 31