Class Diagram

Action
- actionName : String
- description : String
- listEffect : List of Pair of Map (String, Integer)
- + getActionName() : String
- + getDescription() : String
- + getListEffect() : List<Pair<Map(String: Integer)>>
- + setActionName(String actionName) : void
- + setDescription(String description) : void
- + setEffect(List of Pair of Map(String, Integer) effects) : void
- + addEffect(Pair of Map(String, Integer) effect) : void
- + deleteEffect(String key) : void

World
- worldLength : Integer
- worldWidth : Integer
- matrixHouse : List<List<House>>
- + getWorldLength() : Integer
- + getWorldWidth() : Integer
- + getMatrixHouse() : List<List<House>>
- + setMatrixHouse(List<List<House>> matrixHouse) : void
- + addHouse(House house, Point point) : void
- + printMatrixHouse() : void

Occupation
- jobName : String
- dailySalary : Integer
- + getJobName() : String
- + getDailySalary() : Integer
- + setJobName(String jobName) : void
- + setDailySalary(Integer dailySalary) : void

Location
- point : Point
- house : House
- room : Room
- + getPoint() : Point
- + getHouse() : House
- + getRoom() : Room
- + setPoint(Point point) : void
- + setHouse(House house) : void
- + setRoom(Room room) : void

Sim
- fullName : String
- occupation : String
- money : Integer
- inventory : Inventory
- motive : Motive
- status : String
- simLoc : Location
- + getFullName() : String
- + getOccupation() : String
- + getMoney() : Integer
- + getInventory() : Inventory
- + getMotive() : Motive
- + getStatus() : String
- + getSimLoc() : Location
- + setFullName(String fullName) : void
- + setOccupation(String occupation) : void
- + setMoney(Integer money) : void
- + setListInventory(Inventory inventory) : void
- + setMotive(Motive motive) : void
- + setStatus(String status) : void
- + setSimLoc(Location simLoc) : void
- + work() : void
- + exercise() : void
- + sleep(Integer timeMillis) : void
- + eat(Food food) : void
- + cook(Food food) : void
- + visit(Point point) : void
- + pee() : void
- + upgradeHouse() : void
- + buyItem(Objek objek) : void
- + moveRoom(Room room) : void
- + installItem(NonFood nonFood) : void
- + goTo(Point point) : void

Time
- year : Integer
- month : Integer
- day : Integer
- hour : Integer
- minute : Integer
- second : Integer
- + getYear() : Integer
- + getMonth() : Integer
- + getDay() : Integer
- + getHour() : Integer
- + getMinute() : Integer
- + getSecond() : Integer
- + getTime() : String
- + setYear(Integer year) : void
- + setMonth(Integer month) : void
- + setDay(Integer day) : void
- + setHour(Integer hour) : void
- + setMinute(Integer minute) : void
- + setSecond(Integer second) : void

House
- owner : String
- listRoom : List of Room
- houseLoc : Point
- emptyRoom : Integer
- defaultRoom: Room
- + getOwner() : String
- + getListRoom() : List of Room
- + getHouseLoc() : Point
- + getEmptyRoom() : Integer
- + getDefaultRoom() : Room
- + setListRoom(List<Room> listRoom) : void
- + setHouseLoc(Point houseLoc) : void
- + setEmptyRoom(Integer emptyRoom) : void
- + addListRoom(Room room) : void

Purchasable
- + isPurchasable() : boolean

Objek
- objekName : String
- + getObjekName() : String
- + setObjekName(String objekName) : void

Point
- x : Integer
- y : Integer
- + getX() : Integer
- + getY() : Integer
- + setX(Integer x) : void
- + setY(Integer y) : void

Motive
- mood : Integer
- hunger : Integer
- health : Integer
- + getMood() : Integer
- + getHunger() : Integer
- + getHealth() : Integer
- + setMood(Integer mood) : void
- + setHunger(Integer hunger) : void
- + setHealth(Integer health) : void

NonFood
- objLength : Integer
- objWidth : Integer
- objPrice : Integer
- action : Action
- startPoint : Point
- endPoint : Point
- + getObjLength() : Integer
- + getObjWidth() : Integer
- + getObjPrice() : Integer
- + getAction() : Action
- + getStartPoint() : Point
- + getEndPoint() : Point
- + setObjLength(Integer objLength) : void
- + setObjWidth(Integer objWidth) : void
- + setObjPrice(Integer price) : void
- + setAction(Action action) : void
- + setStartPoint(Point startPoint) : void
- + setEndPoint(Point endPoint) : void

Groceries
- grocPrice : Integer
- grocHunger : Integer
- + getGrocPrice() : Integer
- + getGrocHunger() : Integer
- + setGrocPrice(Integer grocPrice) : void
- + setGrocHunger(Integer grocHunger) : void

Food
- listGroceries : List of Groceries
- foodHunger : Integer
- + getListGroceries() : List<Groceries>
- + getFoodHunger() : Integer
- + setListGroceries(List<Groceries> listGroceries) : void
- + setFoodHunger(Integer foodHunger) : void

Room
- roomName : String
- roomLength : Integer
- roomWidth : Integer
- listObjek : List of Objek
- upperSide : Room
- bottomSide: Room
- leftSide : Room
- rightSide : Room
- + getRoomName() : String
- + getRoomLength() : Integer
- + getRoomWidth() : Integer
- + getListObjek() : List of Objek
- + getUpperSide() : Room
- + getBottomSide() : Room
- + getLeftSide() : Room
- + getRightSide() : Room
- + setListObjek(List<Objek> listObjek) : void
- + setUpperSide(Room room) : void
- + setBottomSide(Room room) : void
- + setRightSide(Room room) : void
- + setLeftSide(Room room) : void
- + addListObjek(Objek objek) : void

Inventory
- boxNonFood : Box of NonFood
- boxGroceries : Box of Groceries
- boxFood : Box of Food
- + getBoxNonFood() : Box of NonFood
- + getBoxGroceries() : Box of Groceries
- + getBoxFood() : Box of Food
- + setBoxNonFood(Box<NonFood> boxNonFood) : void
- + setBoxGroceries(Box<Groceries> boxGroceries) : void
- + getBoxFood(Box<Food> boxFood) : void

Box<T>
- type : T
- listT: List of Pair (T, Integer)
- + getType() : T
- + getListT() : List of Pair (T, Integer)
- + setType(T type) : void
- + setListT(List<T, Integer> listT) : void
- + add(T t) : void
- + delete(T t) : void

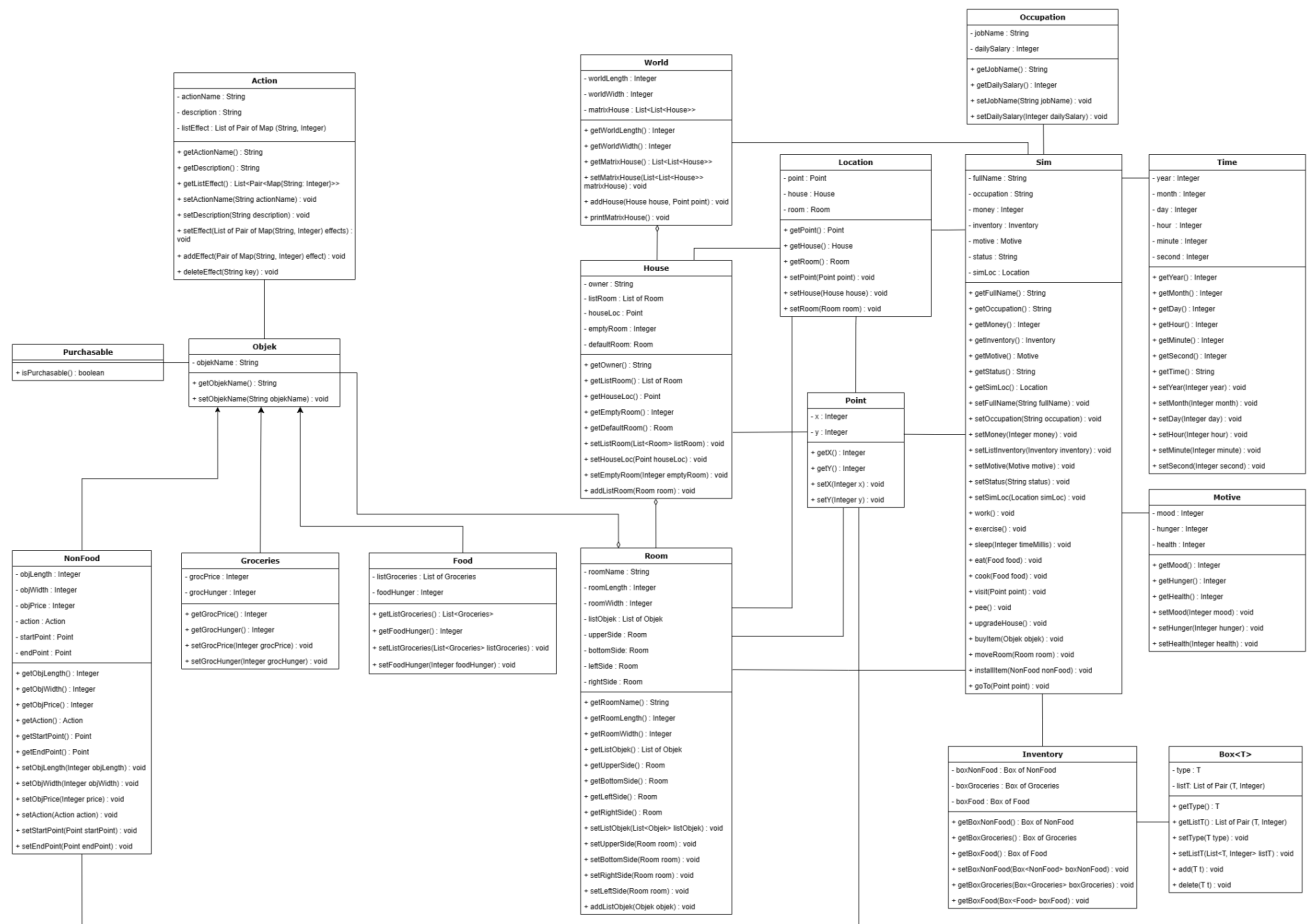## 1. Sim

Constructor: hunger = 80; mood = 80; health = 80; money = 100; occupation = random()

Tabel 1.1 *Attributes detail*

Attribute	Type	Access Control
fullName	String	private
occupation	String	private
money	Integer	private
inventory	Inventory	private

motive	Motive	private
status	String	private
simLoc	Location	private

Tabel 1.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getFullName	Empty - Empty	String	public
getOccupation	Empty - Empty	String	public
getMoney	Empty - Empty	Integer	public
getInventory	Empty - Empty	Inventory	public
getMotive	Empty - Empty	Motive	public
getStatus	Empty - Empty	String	public
getSimLoc	Empty - Empty	Location	public
setFullName	fullName - String	void	public
setOccupation	occupation - String	void	public
setMoney	money - Integer	void	public
setListInventory	inventory - Inventory	void	public
setMotive	motive - Motive	void	public
setStatus	status - String	void	public
setSimLoc	simLoc - Location	void	public
work	Empty - Empty	void	public
exercise	Empty - Empty	void	public
sleep	timeMillis - Integer	void	public
eat	food - Food	void	public
cook	food - Food	void	public
visit	point - Point	void	public

pee	Empty - Empty	void	public
upgradeHouse	Empty - Empty	void	public
buyItem	objek - Objek	void	public
moveRoom	room - Room	void	public
installItem	nonFood - NonFood	void	public
goTo	point - Point	void	public

2. World

Constructor: worldLength = 64; worldWidth = 64

Tabel 2.1 *Attributes detail*

Attribute	Type	Access Control
worldLength	Integer	private
worldWidth	Integer	private
listHouse	List of List of House	private

Tabel 2.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getWorldLength	Empty - Empty	Integer	public
getWorldWidth	Empty - Empty	Integer	public
getMatrixHouse	Empty - Empty	List of List of House	public
setMatrixHouse	matrixHouse - List of List of House	void	public
addHouse	house - House, point - Point	void	public
printMatrixHouse	Empty - Empty	void	public

3. House

Constructor: listRoom = 1

Tabel 3.1 *Attributes detail*

Attribute	Type	Access Control
owner	String	private
listRoom	List of Room	private
houseLoc	Point	private
emptyRoom	Integer	private
defaultRoom	Room	private

Tabel 3.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getOwner	Empty - Empty	String	public
getListRoom	Empty - Empty	List of Room	public
getHouseLoc	Empty - Empty	Point	public
getEmptyRoom	Empty - Empty	Integer	public
getDefaultRoom	Empty - Empty	Room	public
setListRoom	listRoom - List of Room	void	public
setHouseLoc	houseLoc - Point	void	public
setEmptyRoom	emptyRoom - Integer	void	public
addListRoom	room - Room	void	public

4. Room

Constructor: roomLength = 6; roomWidth = 6

Tabel 4.1 *Attributes detail*

Attribute	Type	Access Control
roomName	String	private
roomLength	Integer	private
roomWidth	Integer	private
listObjek	List of Objek	private
upperSide	Room	private
bottomSide	Room	private
leftSide	Room	private
rightSide	Room	private

Tabel 4.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getRoomName	Empty - Empty	String	public
getRoomLength	Empty - Empty	Integer	public
getRoomWidth	Empty - Empty	Integer	public
getListObjek	Empty - Empty	List of Objek	public
getUpperSide	Empty - Empty	Room	public
getBottomSide	Empty - Empty	Room	public
getLeftSide	Empty - Empty	Room	public
getRightSide	Empty - Empty	Room	public
setListObjek	listObjek - List of Objek	void	public
setUpperSide	room - Room	void	public
setBottomSide	room - Room	void	public

setLeftSide	room - Room	void	public
setRightSide	room - Room	void	public
addListObjek	objek - Objek	void	public

5. Objek

Tabel 5.1 *Attributes detail*

Attribute	Type	Access Control
objekName	String	private

Tabel 5.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getObjekName	Empty - Empty	String	public
setObjekName	objekName - String	void	public

5.1. NonFood

Tabel 5.1.1 *Attributes detail*

Attribute	Type	Access Control
objLength	Integer	private
objWidth	Integer	private
objPrice	Integer	private
action	Action	private
startPoint	Point	private
endPoint	Point	private

Tabel 5.1.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getObjLength	Empty - Empty	Integer	public
getObjWidth	Empty - Empty	Integer	public
getObjPrice	Empty - Empty	Integer	public
getAction	Empty - Empty	Action	public
getStartPoint	Empty - Empty	Point	public
getEndPoint	Empty - Empty	Point	public

setObjLength	objLength - Integer	void	public
setObjWidth	objWidth - Integer	void	public
setObjPrice	price - Integer	void	public
setAction	action - Action	void	public
setStartPoint	startPoint - Point	void	public
setEndPoint	endPoint - Point	void	public

5.2. Groceries

Tabel 5.2.1 *Attributes detail*

Attribute	Type	Access Control
grocPrice	Integer	private
grocHunger	Integer	private

Tabel 5.2.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getGrocPrice	Empty - Empty	Integer	public
getGrocHunger	Empty - Empty	Integer	public
setGrocPrice	grocPrice - Integer	void	public
setGrocHunger	grocHunger - Integer	void	public

5.3. Food

Tabel 5.3.1 *Attributes detail*

Attribute	Type	Access Control
listGroceries	List of Groceries	private
foodHunger	Integer	private

Tabel 5.3.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getListGroceries	Empty - Empty	List of Groceries	public

getFoodHunger	Empty - Empty	Integer	public
setListGroceries	listGroceries - List of Groceries	void	public
setFoodHunger	foodHunger - Integer	void	public

6. Occupation

Tabel 6.1 *Attributes detail*

Attribute	Type	Access Control
jobName	String	private
dailySalary	Integer	private

Tabel 6.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getJobName	Empty - Empty	String	public
getDailySalary	Empty - Empty	Integer	public
setJobName	jobName - String	void	public
setDailySalary	dailySalary - Integer	void	public

7. Point

Tabel 7.1 *Attributes detail*

Attribute	Type	Access Control
x	Integer	private
y	Integer	private

Tabel 7.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getX	Empty - Empty	Integer	public
getY	Empty - Empty	Integer	public
setX	x - Integer	void	public
setY	y - Integer	void	public

8. Action

Tabel 8.1 *Attributes detail*

Attribute	Type	Access Control
actionName	String	private
description	String	private
listEffect	List of Pair of Map (String, Integer)	private

Contoh listEffect: ([<{hunger: -10}, {cooldown: 30}>, <{mood: -10, cooldown: 30}>])

Tabel 8.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getActionName	Empty - Empty	String	public
getDescription	Empty - Empty	String	public
getListEffect	Empty - Empty	List of Pair of Map (String, Integer)	public
setActionName	actionName - String	void	public
setDescription	description - String	void	public
setListEffect	effects - List of Pair of Map (String, Integer)	void	public
addEffect	effect - Pair of Map (String, Integer) Contoh: <{mood: -10}, {cooldown: 30}>	void	public
deleteEffect	key - String	void	public

9. Box<T>

Tabel 9.1 *Attributes detail*

Attribute	Type	Access Control
type	T	private
listT	List of Pair (T, Integer)	private

Tabel 9.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getType	Empty - Empty	T	public
getListT	Empty - Empty	List of Pair (T, Integer)	public
setType	type - T	void	public
setListT	listT - List of Pair (T, Integer)	void	public
add	t - T	void	public
delete	t - T	void	public

10. Inventory

Tabel 10.1 *Attributes detail*

Attribute	Type	Access Control
boxNonFood	Box of NonFood	private
boxGroceries	Box of Groceries	private
boxFood	Box of Food	private

Tabel 10.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getBoxNonFood	Empty - Empty	Box of NonFood	public
getBoxGroceries	Empty - Empty	Box of Groceries	public
getBoxFood	Empty - Empty	Box of Food	public
setBoxNonFood	boxNonFood - Box of NonFood	void	public
setBoxGroceries	boxGroceries - Box of Groceries	void	public
setBoxFood	boxFood - Box of Food	void	public

11. Location

Tabel 11.1 *Attributes detail*

Attribute	Type	Access Control
house	House	private
room	Room	private
point	Point	private

Tabel 11.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getHouse	Empty - Empty	House	public
getRoom	Empty - Empty	Room	public
getPoint	Empty - Empty	Point	public
setHouse	house - House	void	public
setRoom	room - Room	void	public
setPoint	point - Point	void	public

12. Time

Tabel 12.1 *Attributes detail*

Attribute	Type	Access Control
year	Integer	private
month	Integer	private
day	Integer	private
hour	Integer	private
minute	Integer	private
second	Integer	private

Tabel 12.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getYear	Empty - Empty	Integer	public
getMonth	Empty - Empty	Integer	public
getDay	Empty - Empty	Integer	public
getHour	Empty - Empty	Integer	public
getMinute	Empty - Empty	Integer	public
getSecond	Empty - Empty	Integer	public
setYear	year - Integer	void	public
setMonth	month - Integer	void	public
setDay	day - Integer	void	public
setHour	hour - Integer	void	public
setMinute	minute - Integer	void	public
setSecond	second - Integer	void	public
getTime	Empty - Empty	String	public

13. Motive

Tabel 13.1 *Attributes detail*

Attribute	Type	Access Control
mood	Integer: 0-100	private
hunger	Integer: 0-100	private
health	Integer: 0-100	private

Tabel 13.2 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
getMood	Empty - Empty	Integer	public
getHunger	Empty - Empty	Integer	public
getHealth	Empty - Empty	Integer	public
setMood	mood - Integer	void	public
setHunger	hunger - Integer	void	public
setHealth	health - Integer	void	public

14. Purchasable

Tabel 14.1 *Methods detail*

Method Name	Parameter - Type	Return Type	Access Control
isPurchasable()	Empty - Empty	Boolean	public