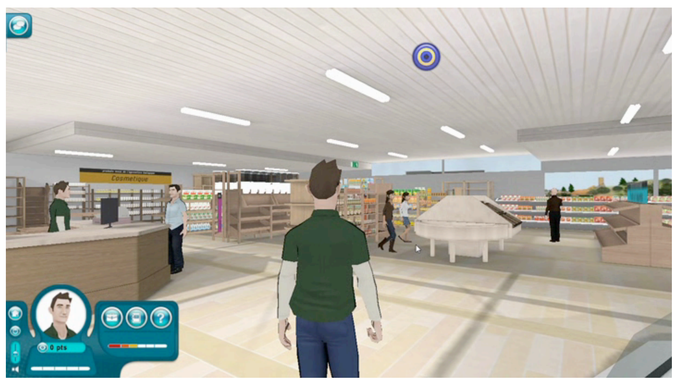
FORMAT-STORE

Store Management and Customer Care Learning Tool

Format-Store is a serious game designed for undergraduate business school students. FS offers an immersive experience of customer relationship management in the context of a virtual store populated with intelligent characters.



Controlling their avatar (a salesperson), the player evolves in a virtual supermarket populated with autonomous customers shopping for goods.

The customers find their way reading the information signs.

The customers are receptive to the condition of the store, which influences their level of satisfaction.

When they need assistance, they are able to look for the employee and start a conversation.

The customers queue at the checkout when they have collected all the items on their shopping list.

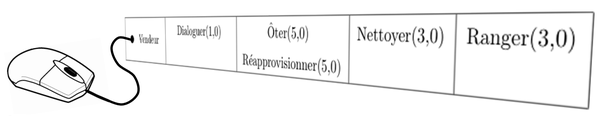
Format-store features a "Multiagent simulation" of the virtual customers in the 3d store

1) Intelligent customers

Action selection applied to the matrix enables the customers to express realistic, adaptive, modular and varied behaviours.

2) Interactive simulation

The player is integrated in the game by means of controlling an agent in the simulation (an employee in this case).
Their role is non blocking and interchangeable

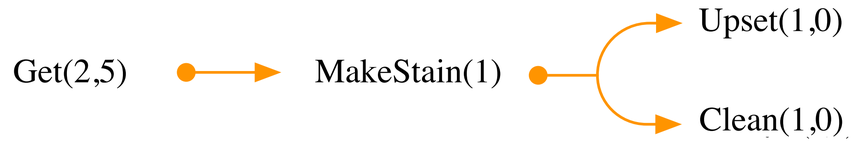


Source/Target	∅	Employee	Customer	Door	Sign	Checkout	Item	Queue	Stain	Crate
Employee	Converse(0)		StartConversation(1,0) EndConversation(1,0)				Remove(1,0) Supply(1,0) Order(1,0)		Clean(1,0)	PutAway(1,0)
Customer	Wander(0) GoTowards(1) Converse(13)	Wait(2,3)		Exit(1,12)		Pay(2,10)	Get(2,5)	StepIn(5,7) MoveOn(1,8) WalkOut(1,11)		
Door	SpawnCustomer(1)		Acknowledge(10,0)							
Sign			Acknowledge(10,0)							
Checkout			Acknowledge(10,0) CheckOut(2,0)							
Item	Expire(1) MakeStain(1) SpawnCrate(1)		Acknowledge(10,0) Upset(1,0) Ack_OutOfStock(1,0)							
Queue										
Stain			Upset(1,0)							
Crate			Upset(1,0)							

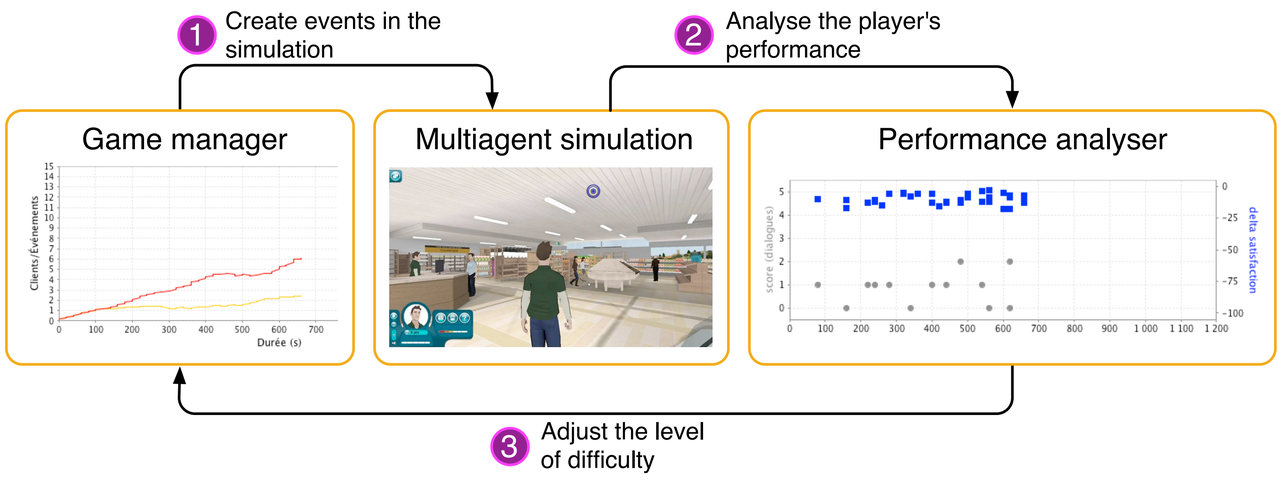
The interaction matrix of IODA's methodology enables the description of the entire behaviour of every agent in the simulation by means of their mutual interactions. In IODA, every entity in the simulation is represented by an agent, should it play an active and/or a passive role.

3) Mise-en-scene

Mise-en-scene is an important aspect of the game. It requires the integration of pedagogical learning objects (problem-situations rendered as interactive dialogues between the player and a customer) and the ability to describe scenarios in spite of the agent's autonomy. The interaction matrix represents a meaningful way for the game designer to model and visualise sequences of actions.

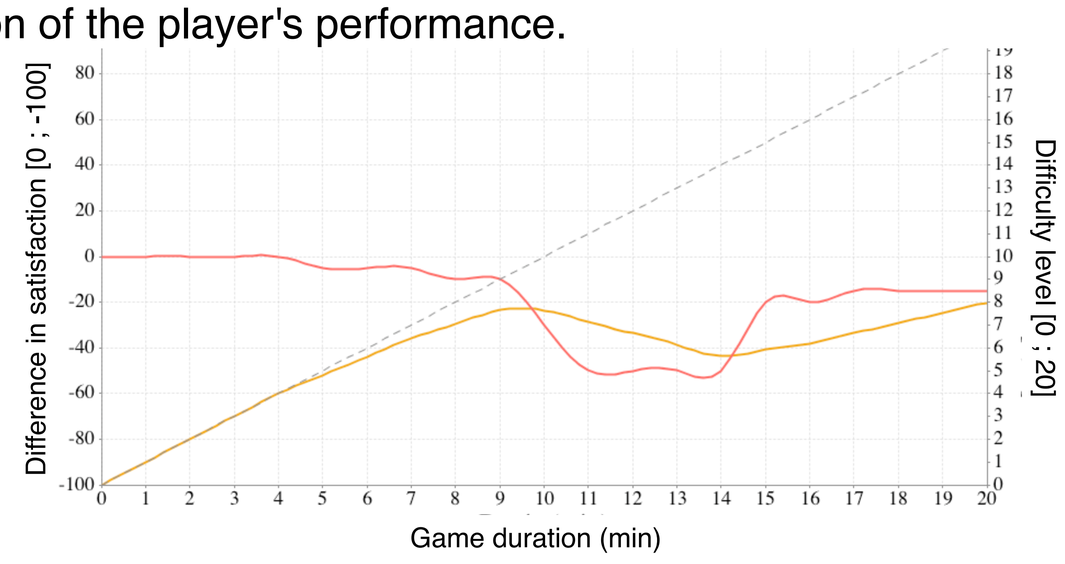


The "Serious Game" design consists in taking the control of the simulation



The Game manager triggers events in the simulation (expire an item, send a customer with a question) with which the player has to deal. Their performance is evaluated by the customers themselves (according to their level of satisfaction). The game difficulty is adjusted by increasing or decreasing the fequency or the intensity of the events.

A game manager takes the control of the simulation by disturbing the environment and analysing how the player copes. To that end, it relies on a continuous evaluation of the player's performance.



During the game session (20 minutes), the satisfaction level of every customer leaving the store is collected (red curve). The difficulty level (orange curve) is adjusted in order to avoid frustrating the player, or boring them on the contrary. In the exemple above, one can see that the dramatic drop of performance (after about 9 minutes) is balanced by a decreased difficulty. A few minutes later, one observes the player has got to grips again with the game.

Visit our project's website at
http://www.lifl.fr/SMAC/projects/formatstore/

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