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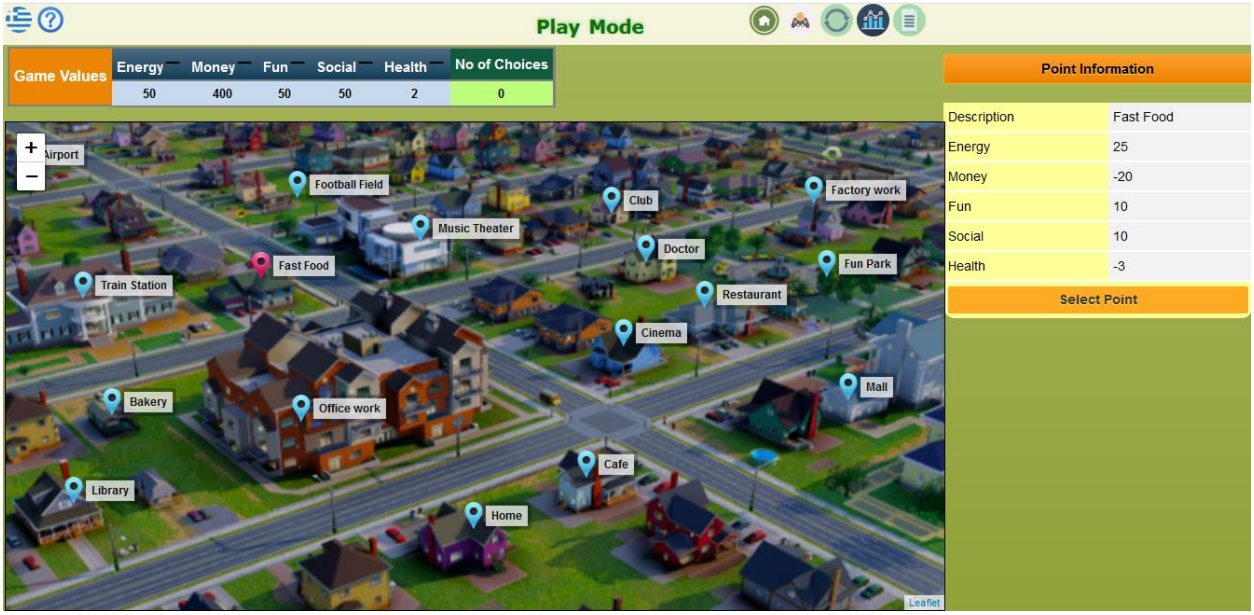
ChoiCo Guide



Contents

What is ChoiCo

ChoiCo software was built to support students and teachers to create digital games that belong to the genre of “choice-driven simulation” games. In ChoiCo games, the player faces complex socio-scientific issues with different possible choices to choose from. Each choice has divergent consequences along a set game fields. The aim of the player is to keep making choices for as long as possible without being thrown out of the game by means of going over one of the 'red lines' of a respective consequence.

ChoiCo differentiates from other similar games in that here the game mechanics that determine the choices, their consequences and the game rules are not closed or inaccessible by the user, but they are objects of thought, discussion, negotiation, and modification. To support this, ChoiCo offers two modes: The “Play Mode”, where one can play any ChoiCo game and the “Design Mode”, where one can design a new game or modify an existing one by using ChoiCo design tools.

ChoiCo Game Rationale

ChoiCo is a digital authoring tool with which one can play and create games based on the 'Choices with Consequences' idea (http://etl.ppp.uoa.gr/choico/). When playing a ChoiCo game, the aim of the player is to keep making choices as long as possible so that does not go over one of the 'red lines' of a respective consequence. When designing a ChoiCo game, the point is to consider wide socio-scientific issues (e.g., sustainability) and how they may be faced by individuals (e.g., students) who make choices.

ChoiCo games are choice-driven simulation games. In the context of a ChoiCo game, the player makes choices which have divergent consequences along a set of fields. The players' decisions with respect to the available choices determine the flow of the game.

Figure 1: ChoiCo Play Mode

A ChoiCo game consists of three elements (Figure 1):

a) The "**Scene**", that is the game interface of the game, where the socio-scientific issue embed in the game is simulated with a background image, on which all the available choices are pinned. Depending on the game scenario, these choices may represent various things, e.g. places to visit on a map, foods to eat, persons to talk or objects to use.
b) The "**Game Values table**", that shows the game fields (parameters) and their current values as they change depending the player's choices during the game.
c) The "**Point Information table**", that shows the consequences of a selected choice to the game fields along with other information (e.g. explanatory text).

For instance, in the game of Figure 1, different choices are pinned on an illustrated map of a city, representing different places of the city the player can visit or various activities he can do. The game fields, shown in "Game Values table" are Energy, Money, Fun, Social, and Health. According to the "Point Information" table a selection of the choice "Fast Food" will add 10 points to "Fun" field and 25 points to "Energy" field as eating Fast Food is enjoyable and Fast Food meals have many calories. In the same time the choice will subtract 20 points from "Money" field as Fast Food 3 points from "Health" field may cost money and it is not a very healthy choice. If the player choses to select this choice, these values will be added or subtracted from the respected game fields. The player keeps making choices until she/he loses the game.

Some general rules of all ChoiCo games:

- Every choice has consequences regarding each of a number of pre-set fields (e.g., the choice “Fast Food” has consequences in the fields “Energy”, “Money”, “Fun”, “Social”, Health” There is no choice which has only positive or only negative values
- Each game has one or more 'red lines' respectively, regarding a field above or below which ends the game
- The point of the game is for the ”Game Player” to stay on the game as long as possible, the player staying on the longest is the ‘best’ player
- The available choices and fields are related to a ‘concept’/socio-scientific issue for which it makes sense for the player to try to keep balanced for as long as possible and hopefully indefinitely. To do this (s)he has to develop a deep understanding of the game choices and how these affect the fields of the game.

Playing a ChoiCo game (Play Mode)

You can play a game by clicking the “Play Game” option at the home screen which will transfer you to a new screen. There you can either open a ChoiCo game that it is saved locally on PC, or select to play one of the available online games. When a game loads, a pop-up window appears, where you can read the storyline and instructions of the game (Figure 2).

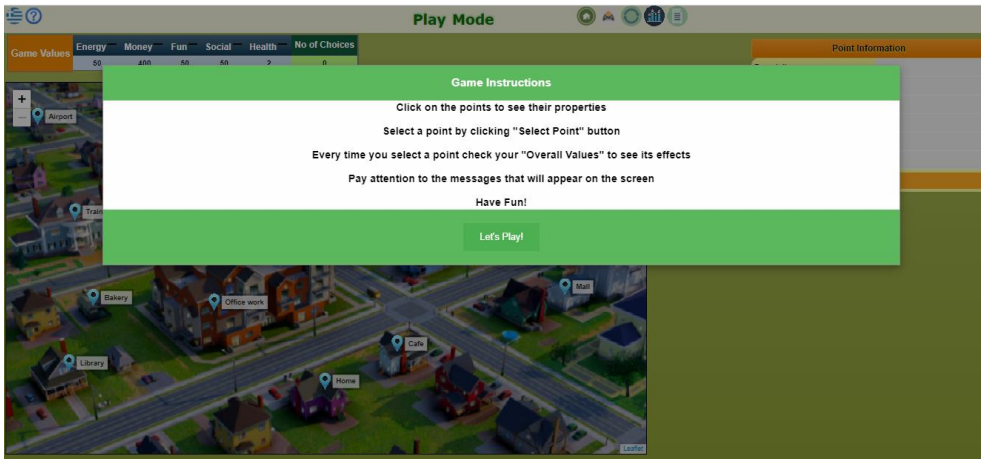


Figure 2: Game instructions appear when a game is loaded on Play Mode

To start playing, you select “Let’s play” option. Now, the scene appears on the left side, the Game Values Table on top and the Point information table on the right of the screen (Figure 1). If you click on a point of the scene, the “Point Information” table inform you about the characteristics of this point. That table contains information about the consequences of this choice to the fields’ values ofthe game and probably some extra information i.e. a description. You can select the point by clicking on the button “Select Point”. Then, the Game Status will be updated according to the point you selected and you will probably receive some feedback from the system (Figure 3).

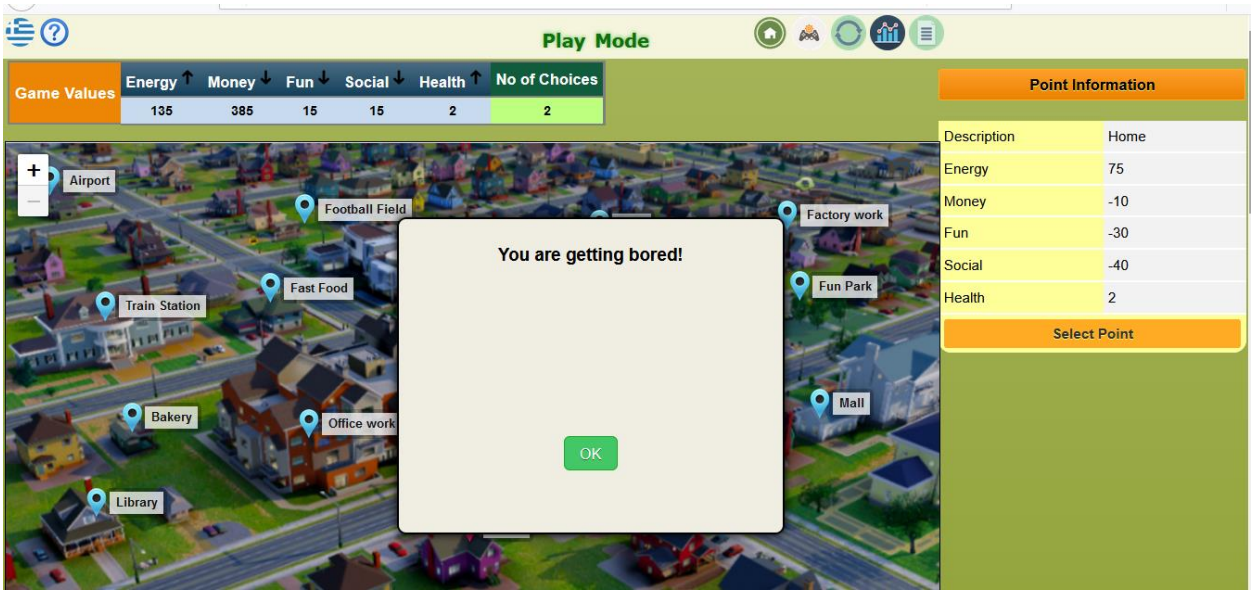


Figure 3: Feedback messages may appear during the game, informing the player about his/her progress

When the game ends an orange pop up window will show up, explaining the reason why the game ended and asking the player to choose between the following actions (Figure 4)

Play Again: Restarts the game

Edit Game: Opens the game in the Edit Mode (look next section)

Show Score and statistics: Opens the game log that contains the current values of game fields along with a track history of all the player choices during the game. The player (student) can download his/hers score and statistics by clicking the “Download Score” button. The downloaded file is a PDF containing this information along with the date and time of playing, and the number of times the player has played the game so far.

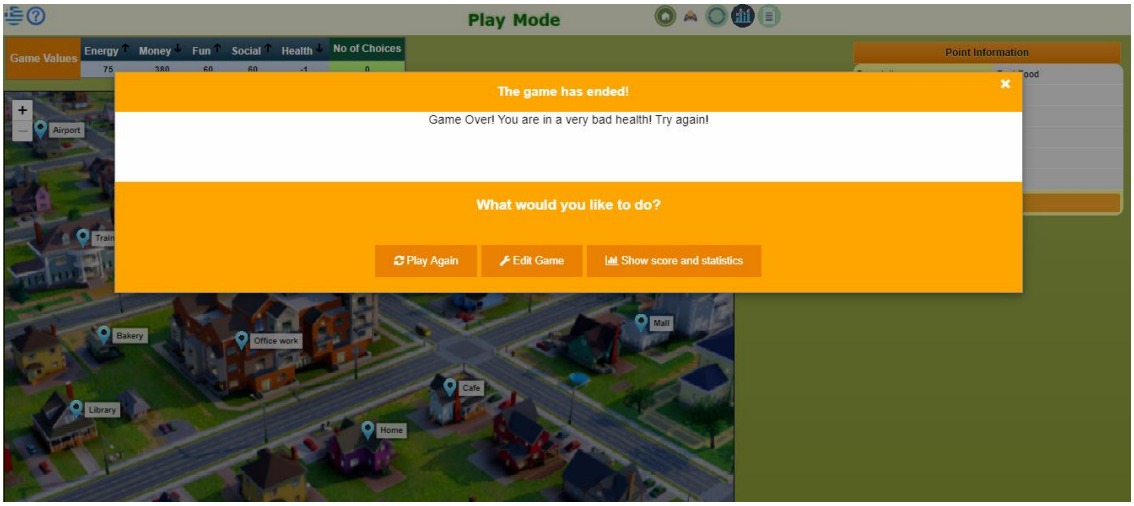


Figure 4: When the game ends a window appears with three possible actions

Other available buttons in play mode are:

 Shows/Hide the **game instructions.**

 Shows/Hide the **game log.** The game log that contains the current values of game fields along with a track history of all the player choices during the game.

 **Restarts** the game. You can restart a game at any time you wish.

 Opens the **Design Mode** where you can edit the game.

Modify or design a ChoiCo game (Design Mode)

To design a new game select the "Design Game" option at the home screen which will transfer you to the Design Mode of ChoiCo environment.

The Design Mode offers four separate tabs representing the different elements of the game that you will design. These tabs are:

a) **Game interface**
   Here you design the interface of your game (how your game will look like). You can change the scene's background, add and modify points on the scene and set up the consequences of each point.
b) **Initial settings**
   This is where you set up the initial status of the game (how the game will start).
c) **Gameplay rules**
   In this tab you set up the rules that will take place in every turn of the player (how the game will progress).
d) **End rules**
   Here you set up the rules that will end the game (how the player wins or loses).

Below there is a detailed description of each tab and how to use its functionalities

Game Interface (1st tab)

In this tab you can find the a)scene of the game in which the background (by default a city map) and b)a database, as seen in Figure 5. In this tab you can:

a. Set or change the background of the game
b. Set the layers of the game if there are more than one
c. Add or delete the points-choices of the game or modify their fields
d. Write the instructions for the player

The scene is a very important game element, as it simulates the situation in the context of which the socio-scientific issue of the game is embedded. It the element that the player mainly interacts with as he makes choices.

Figure 5: ChoiCo Design Mode - "Game Interface"Tab

a. Change the background

To change the background of the scene, click on the icon on the toolbar left of the scene. Then you can select any image from your computer and click OK. The image will automatically be added and adjusted as background of the scene.

b. Add/Delete/Move a point or change its consequences

To **add** new points on the scene, click on the icon on the toolbar left of the scene. By clicking this icon you activate the "insertion of points" functionality. While this functionality is activated, you can click anywhere on the scene with the cursor to add a point. After you have finished with the points' insertion you have to click the button again to return to the normal mode of the map.

You can **move** a point by clicking on it and drag it to a new position on the scene (drag-and drop).

To **delete** a point you should right click on it and select "Delete Point"

To change the **consequences** of a point-choice, you can edit the "Data Table" on the left of the screen.

c. Add layers to your game

It is possible that a choico game has more than one layers. This means that by selecting a choice the player can be transferred in another scene, which contains other choices. With respect to our example, let's say that if the player selects the choice Fun Park, he is transferred to a scene which shows a Fun Park layout. You can add a layer to your game by clicking on the icon on the left side of the screen. In the pop window which appears you can see all the layers of your game and browse in your computer in order to upload new images as background to the new layers. To add a new layer, you select "Browse" and choose a picture from your computer. When the new background picture is uploaded, its name added in the layers list. If you want to delete or rename the layer, you just click on it and select "Delete layer" or "Rename layer" accordingly (Figure 6).

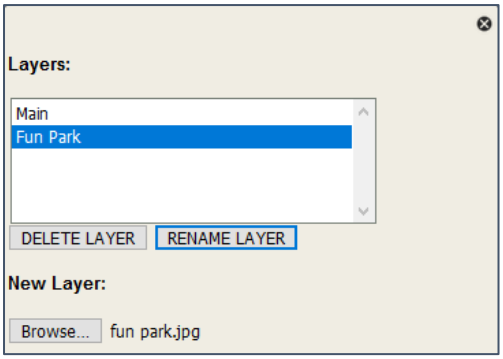


Figure 6: The layers settings window

The layer is added and you just have to program the game in order for the player to be transferred in the new Fun Park layer when he selects Fun Park. You can do this in the "Gameplay Rules" Tab (Gameplay Rules Tab session). Every layer can have its own choices. You can add points-choices in the layers the same way described in the session Game Interface.

Data Table

When you add a new point on the scene, the system automatically inserts a row at the table on the right. This **line** represents the specific point (like a record in a database) and gives you the opportunity to change the point's fields. All points have the same fields which are depicted by the **columns** of the table (Figure 7). By default there are 4 Fields: ID, Description, FieldA, FieldB. The ID is a unique number of each point and cannot be deleted or modified. The Description field is a small text for a point that will appear next to it on the scene.

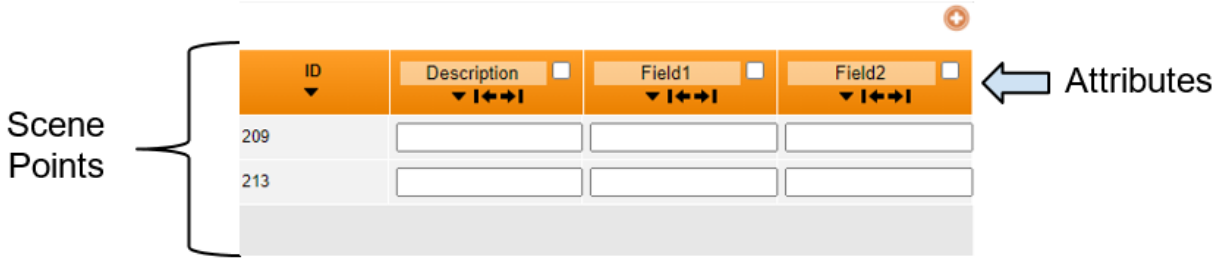


Figure 7: The ChoiCo datatable. The lines represent the game choices, the columns the game fields and the numerical values the consequence of each choice to the specific field, if selected by the player.

Adding / Deleting a game field (column)

To add a new field (column) at the table you should click on the icon  of the table. A field will be added as a new column of the table. To set the name of the field click on the orange box (Figure 1).

Figure 8: Adding a new game field at the datatable

To delete a game field, click on the little box next to its name. Then click on the  icon on the top of the table (Figure 9). The “Description” and “ID” fields cannot be deleted.

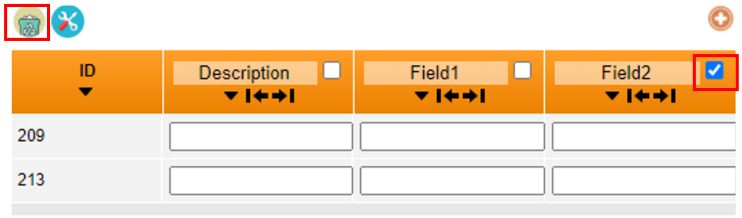


Figure 9: Deleting a game field

Change the type of a game field

Every field is characterized by its name and its type. Available types are: Number, Text, Image, Date, Url. The default type of every feild is “Number”. To change the type click on the checkbox next to the field’s name and then click on the icon  on the top of the table. At the pop up window you can select one of the available types (Figure 10).

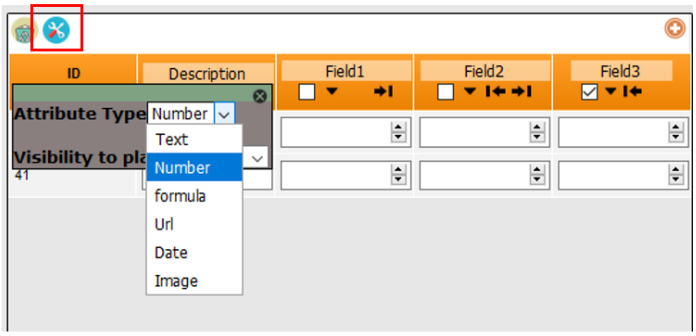


Figure 10: Changing the type of a game field

The “Description” field is by default set to “Text” type and cannot be changed.

Set the field values

You can set the values for a game choice (point) by clicking to the respective white box of the point’s row (Figure 11).

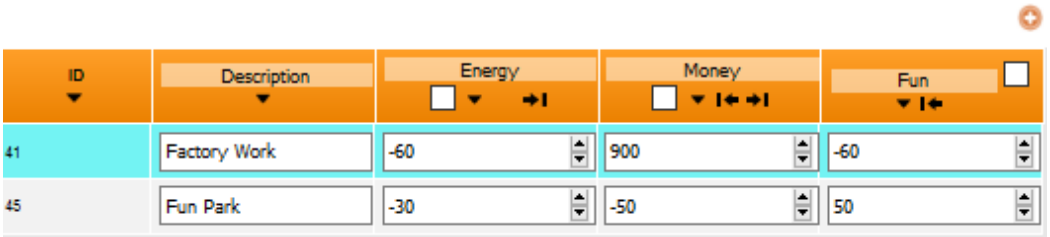


Figure 11: Setting the values of a point (row) for the game fields

Initial settings (2nd tab)

After you have set the fields and their properties at the first tab, you can then define the initial values of the numerical fields at the second tab “Initial settings”, where you set up how the game starts. There you will find a block-based programming area where you can make your definitions. At the left side there is a

sidebar with the available blocks, which you can drag and drop them in the white workspace to the right in order to program the initial values of the game (Figure 12).

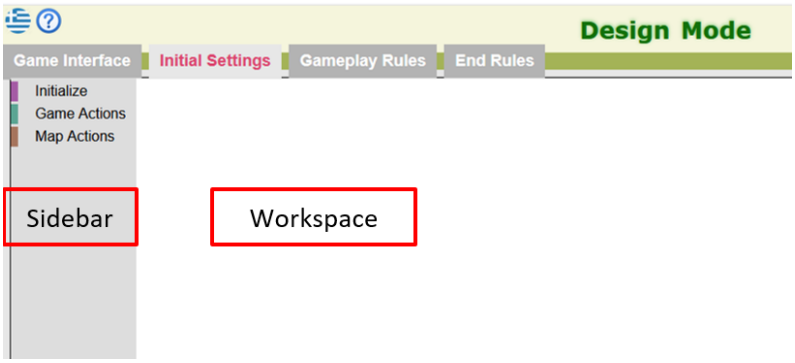


Figure 12: Sidebar and workspace of "Initial Settings" Tab

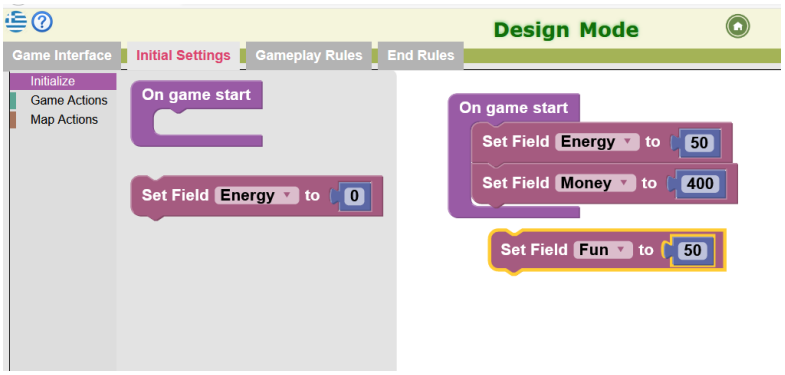


Figure 13: Drag and drop a block to the workspace. Example of initial settings code

When you visit this tab for the first time, it has only one field set **as an example of setting the initial rules of the game**. To set your own conditions of ending the game, you have to select from the sidebar the block 

and drag it under the other "Set Field" blocks (Figure 13). In the example here when the game starts, the values of the field "Energy" is set to 50 and the value of the field "Money" is set to 400 and . This means that when the game starts on Play mode, the player will be able to see in the Game Values Table that he starts with 50 Energy points and 400 Money points (Figure 14).

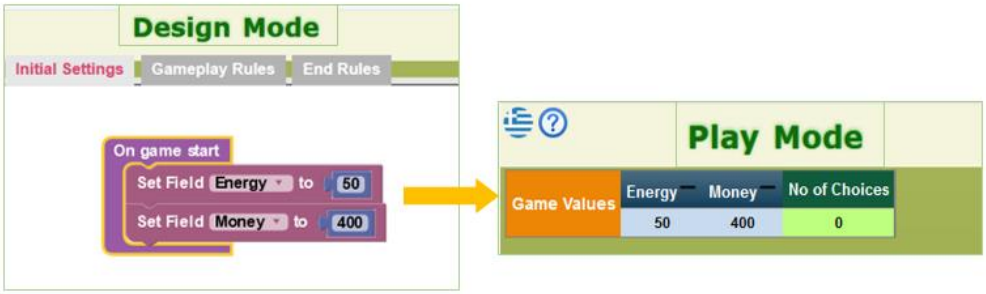


Figure 14: Setting the initial values of the game

Click on the field name to select from a dropdown menu the field you want to define (Figure 15). The

default value for all fields is set to 0. You can change this number by clicking in the blue box that contains the number.

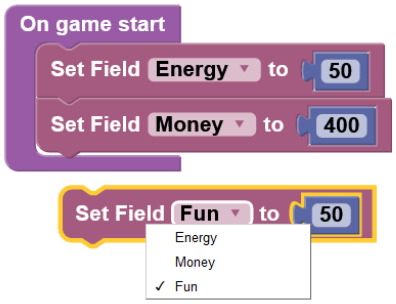


Figure 15: Select the field you want by clicking on the dropdown menu

More information about the available blocks and how to use the programming environment you can find in the section "Programming with blocks".

> All the Set Field blocks must be under the Initial Values purple function as in the example above You must set the initial value for every numeric field you have in the game.

Gameplay rules (3rd tab)

At the 3rd tab you can program rules for the game that will occur **every time the player selects a point**. The code that will be programmed here, will run every time the player selects a point and the result will occur automatically. Similar with the 2nd tab, this tab contains a working space for block-based programming and a side bar with the available blocks. The available blocks here are divided in four different categories according to their functionality which are: conditions, variables, maths and actions.

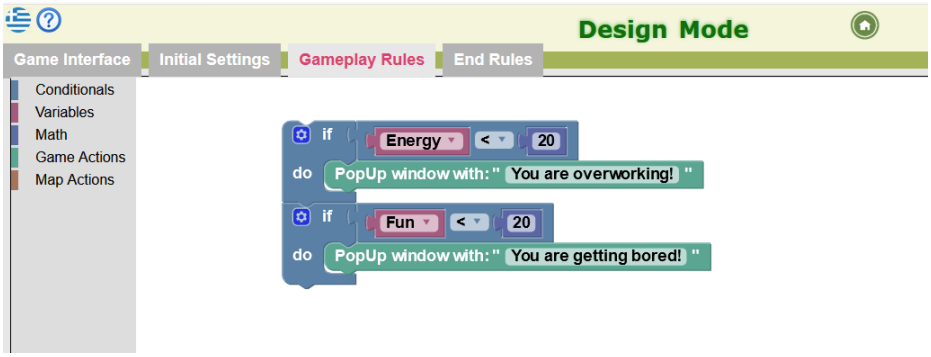


Figure 16: The Game play Rules tab.4

Figure 16 shows an example of 2 rules programmed in the tab “Gameplay rules”. In this example after the player makes one choice, the game will check if the field Energy is below 20, and if it is a pop up window will appear with the message “You are overworking”. After that, it will check if the field Fun is under 20 and if it is the message “You are getting bored” will appear. In the example of Figure 17 the code checks if the selected choice is the “Fun Park” (selectedChoice.name) and if it is it sets the active layer to a layer called “fun park”.

Figure 17:Example of condition which changes the layer. When the player selects Fun Park choice, he is transferred to the Fun Park layer.

More information about the available blocks and how to use the programming environment you can find in the section “Programming with blocks”.

End rules (4th tab)

At the 4th tab you can program the ending rules of the game. The code that will be programmed here, will run every time the player selects a point, after the code of check conditions, and the result will occur automatically. Similar with the tabs 2 and 3, this tab contains a working space for block-based programming and a side bar with the available blocks. The available blocks here are divided in five different categories according to their functionality which are: conditions, variables, maths, actions and game flow.

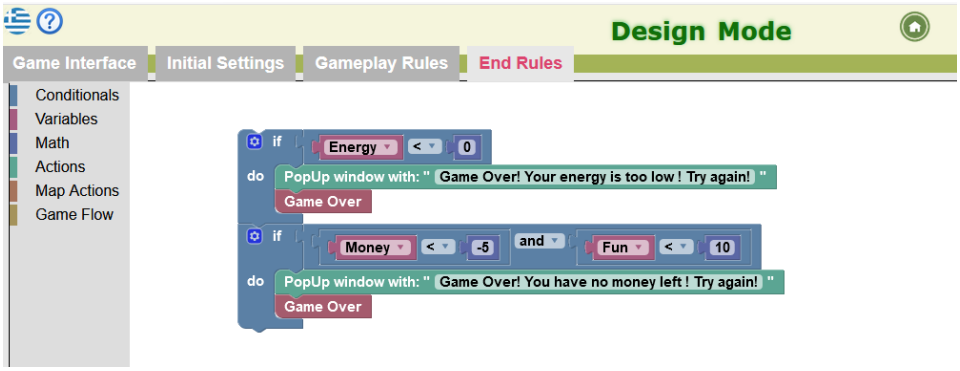


Figure 18: The "End rules" tab

Figure 15 shows an example of 2 ending rules programmed in 4th tab. Every time the player makes a choice the code checks first if his Energy became lower than 0. If it is a pop up window appears with the message "Game Over! Your energy is too low! Try again!" and the game ends. Secondly it checks if the player's Money became bellow -5 AND the Fun became bellow 10 and if they are the game ends.

> You must use the "Game Over" block to finish the game.

Programming with blocks

In this section we describe the programming environment of ChoiCo.

> Find a full list of all ChoiCo commands with detailed descriptions and examples of use on this URL: http://etl.ppp.uoa.gr/choico/blocksEn.html

The programming Environment

The programming environment consists of two parts: the sidebar on the left and the workspace on the right. The sidebar contains all the available blocks that can be used at the workspace. While ChoiCo has 3 different workspaces (initial settings, gameplay rules, end rules), there are some differences to the available blocks according to the functionality of each workspace.

Insert new block

To insert a block in the workspace and make it part of the code you select it from the sidebar and drag and drop it in the workspace. Different blocks can be connected together if they have edges that fit with each other, like pieces of a puzzle. Figure 19 shows an example of blocks that can be connected and Figure 20 shows blocks that cannot.

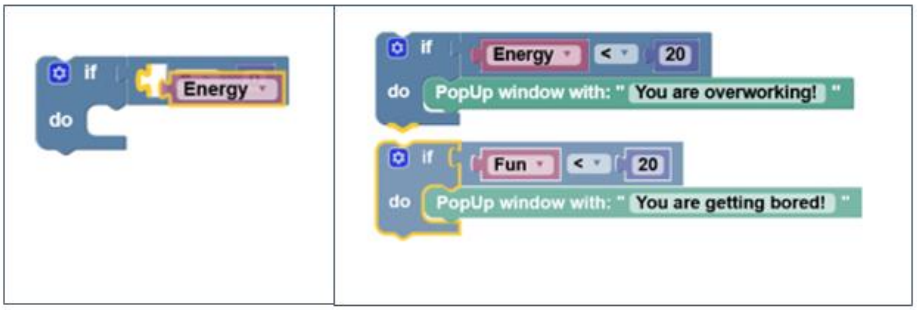


Figure 19:Examples of blocks that can be connected

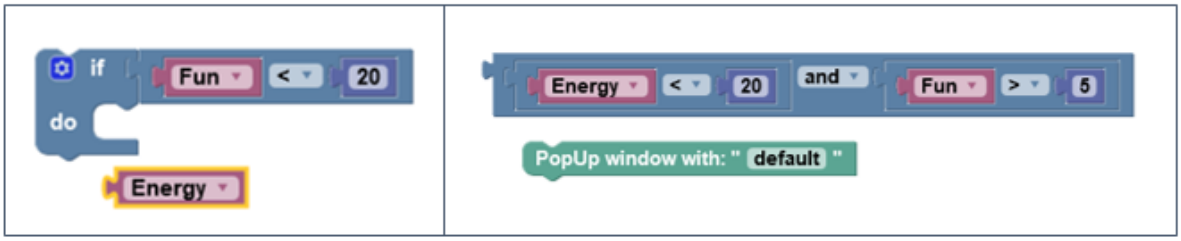


Figure 20: Examples of blocks that cannot be connected

Delete block(s)

To delete a block or a group of connected blocks you can do one of the following:

a) Right click on it and select “Delete Block”
b) Drag and drop it on the bin at the right down corner
c) Drag and drop it on the side bar

Duplicate block(s)

To duplicate a block or a group of blocks you should right click on it and select “Duplicate”

Disable block(s)

To disable a block or a group of connected blocks you should right click on it and select “Disable Block”. The block(s) will appear as disabled in the workspace and will not be executed. You can enable it again by right clicking and selecting “Enable Block”.

Collapse block(s)

To collapse a block or a group of connected blocks you should right click on it and select “Collapse Block”. The block(s) will be collapsed and they will be represented by a single block. You can expand the block(s) again by right clicking on the single block and select “Expand Block”. This is a very useful functionality if you want to save some space on your workspace.

Undo

You can undo your latest action by pressing ctrl+z on your keyboard.