

DESIGN A GAME FOR ENGINEERS

(Sorry for my bad English level)

Two ideas of plays, both on the topic of construction and the automation of robot, but the two ideas uses the same system, there is just the topic which changes and its gameplay.

BOT VS BOT... a little as it is known a kind of competition putting in scene robots which aim all to neutralize are adverse, the ideal would be to measure its robot with another player and whom that is limited to three engagements per day in its level. Gradually each player progresses of a level and fights of the player a little more experienced like a range of part to detach to build a model of robot a little more complex further... explanation in the booklet...

BOT EXPLORA... a play much calmer or the goal is not neutralized a its opponent, but more in one solo spirit... to build and program its robot in way has to make a success of the scenario. In a realistic way, it is often to manufacture a robot in such manner has to be able to avoid an obstacle, to put an object on a position, to follow a layout, to climb a rough ground, etc... via a selection part to detach and of level in level found vis-a-vis an increased difficulty.

BOT VS BOT

I do not hide it to you, this idea is my pet, I tien has to announce that the two ideas of plays meets in its total use. I see BOT VS BOT like a play multi-players differed, which I understand by differed it is that to fight the robot of its adversary, its adversary does not need to be present or connected on the site or waiter. The best solution you is schema-tized all that by stage.

01 Creation of its account

The player created an account on the waiter of the play, essential stage to start. Without that it would be impossible to manage its robot and to assemble level. From there a very intuitive teachware to understand the operation of the play would be welcome.

02 Creation of its robot

The player according to his level, starts to create his robot, which chassy to choose, its processor, its food, its options, its mode of displacement, and another value like its level of protection, the type of weapons...

03 Programming

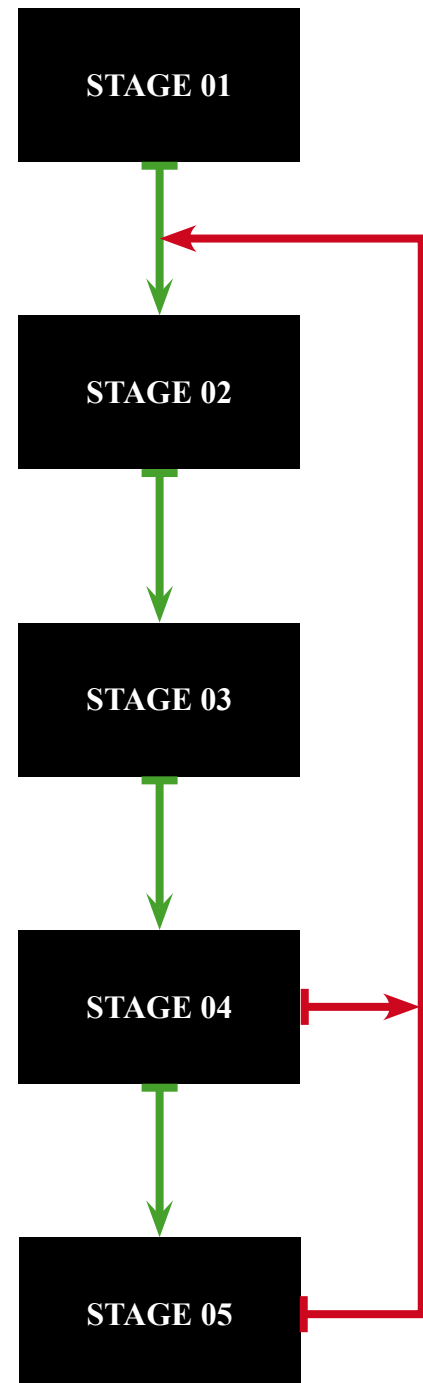
The goal of the play is to make its robot completely autonomous, starting from detectors knowledge which action to undertake, its programming should remain simple but enough push to have a choice and a rather high challenge vis-a-vis the other competitors. Programming with simple flow chart is for me a solution which I find because easy very well to explain to the people not having concepts of program-mings, and especially a step to like the programming ahead.

04 To test its robot

Yes because nobody is safe from an error, it is often to advise to see how functions its robot in an arena in order to correct an error of design or programming, it would be damage to see his robot doing anything vis-a-vis his competitor.

05 To launch its robot

The stage which says if its robot is a future champion, starting from a list of adversary (a selection defined on its level chosen by chance) the player launches a challenge to this player... the match starts at once that the adversary is connected or disconnected, essence is that the robot of the adversary is functional. The ideal would be to have the right to make 3 engagements per day... But its robot can receive challenge as much than he wants. In the event of victory the player receives points and experiment. The experiment makes it possible to gain levels, and the points to buy new parts for its workshop.



THE WORKSHOP

The workshop, the heart of the play, this part is divided into two: The construction of the robot and its programming, it thus proves normal that the second part is not accessible before the first is finished. We thus initially will see the construction part.

This part makes place with the creativity of the player while remaining reasonable.

Starting from a list of components available according to his level and his purchases, the player builds his robot in a way simple and intuitive, in order to better understand I will present by stages the construction of a simple and complete robot.

01 The frame

Essential element of the robot, without him impossible to assemble the parts in this one... According to our level and our purchases, we have a more or less large choice of frame with for each characteristic taking into account for the design of its robot, like the weight, the matter, the size, the number of catch available, etc...

02 The processor

Another important component, the processor makes it possible to manage several elements more or less and more or less offers place to the level of the programming.

03 Power supply

another element very important of robot be its food, wi-

thout energy the robot be likely to be a toy for your adversary, it be thus preferable to have a food which correspond the more have your robot, but as for the frame, some the food be important, some it take some weight and some place.

04 The displacement

It would be stupid to have a robot which does not move, it could be a perfect target for your adversary, the choice of a system of displacement becomes important but attention, as for each element an advantage always involves a disadvantage, you can take small wheel very well offering to your robot a profit of weight, place and energy but losses of protection and power, whereas the use of caterpillar offers to this one the reverse.

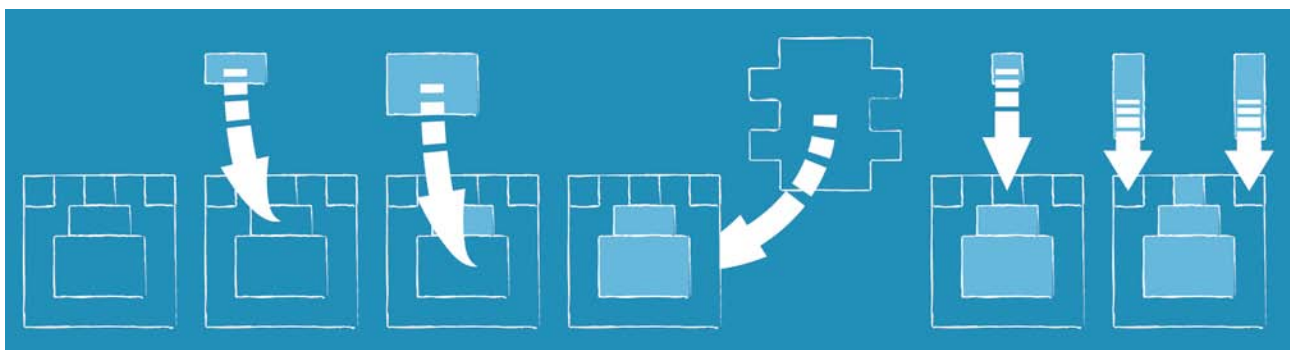
05 Detectors

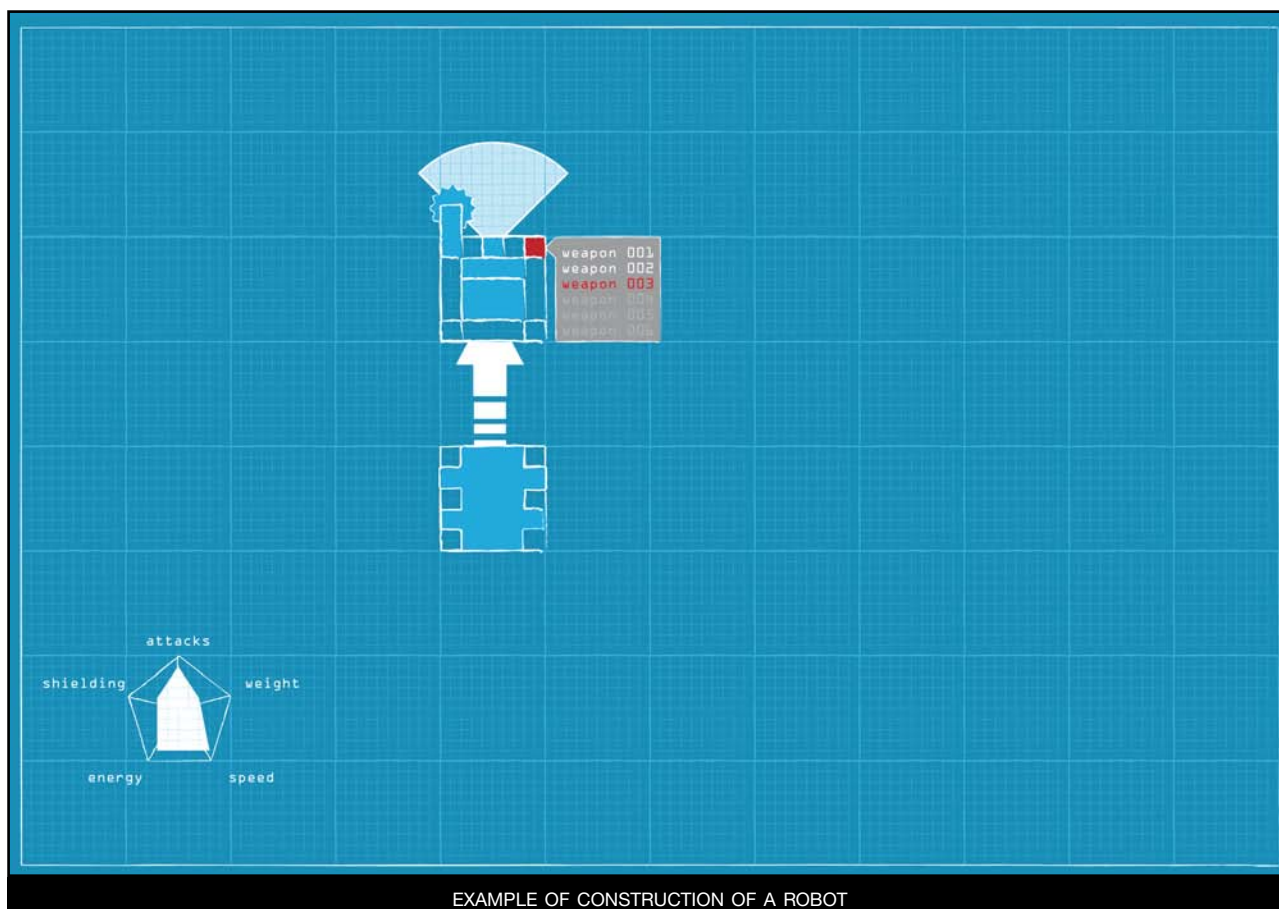
The eyes of your robot, without that it would be blind, it is the keystone of the programming, without the detectors the robots does not risk optimal operation of way. That can be detectors of colors, positions, of presence, contact, laser, etc... each detector has a function, a size, a consumption of energy.

06 Weapons

The weapons can be more or less fatal, that can go from the small queer of girl, with the fire launcher, have you to be creative to know to take the weapon or the weapons which it is necessary according to the need and the characteristics of this one. The use of some weapons can have critical blows on certain components of the robots adversary (lance flames against plastic...)

Here is your Terminator, you are new Skynet, finally almost because it misses the programming part. But before here an idea of component and their characteristics.



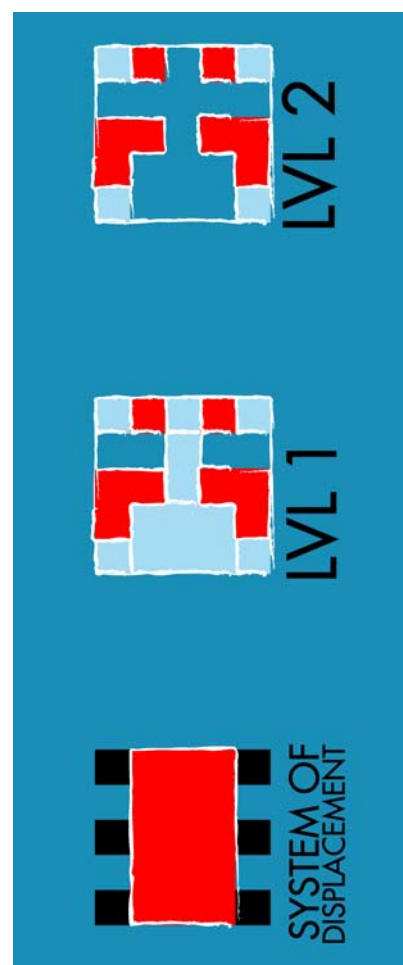
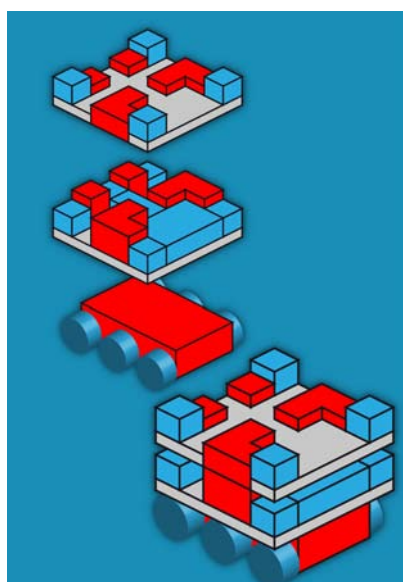


EXAMPLE OF CONSTRUCTION OF A ROBOT

To remain in the construction of his robot, the editor of robot must remain simple and ergonomic, a little as you often made for the play Silicon Foundry, the ideal would be for the part of construction of the robot, always to have an assistant or a deputy to know where to put the part. To make as if one made its robot in Lego is in my eyes the best means of attracting the most world in this kind of play.

It is besides sympathetic to sometimes happen certain a level (or since the beginning) to set up a system giving of the indications on its construction, the poid, speed, the force, etc... according to the type of adversary which one wants to fight that allows to adapt, the best players will often pay attention to that and will produce enough robot in order to avoid has each type of robot.

Another thing which can be interesting would be not to base itself solely on the couple frame and system of displacement, to make it possible to add a stage besides the frame would be more which can be not badly especially on the levels superior so E to create true fortress automated.



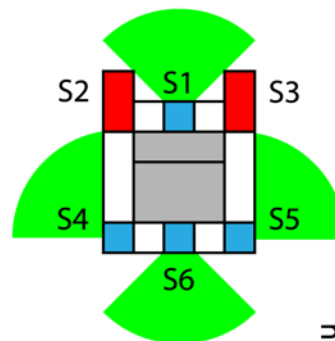
The programming, thing which makes fear with the players, and yet it is the stage which makes it possible to give life to the robot and to reduce in crumb its adversary, the idea is to offer two kind of programming, “simple” version and a version “expert”, that allows everyone to be able profited, especially those which do not have aucunes knowledge in programming, but also to offer has those which have knowledge or experience to be able to make the perfect robot.

For the programming “expert”, to take the same principle that the play manufactoid while offering has this one more function. The programming in Lua is in my eyes perfect because very simple while being powerful.

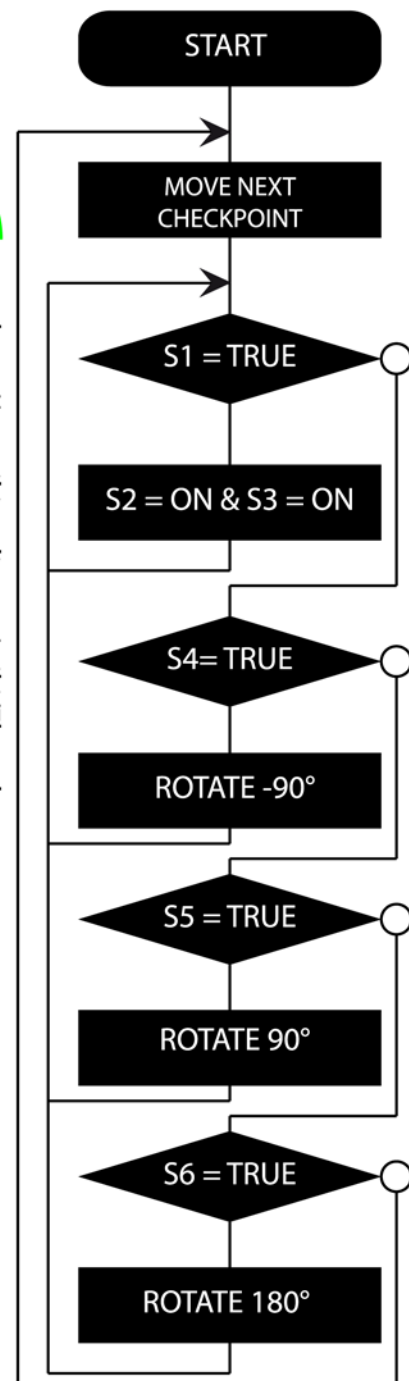
For the simple programming it is necessary to be put instead of those which do not have much knowledge in programming but which wishes to program their own robot all the same, it is desirable besides to have an assistant, a page of very complete and fast assistance to reading. Etc... In order to avoid with the player all typing, one to slip to deposit certain function is for me the perfect method, but not like a timeline, one does not program the movements of the robot in advance, but one makes it possible to him to deal with certain environment and element of the play.

Example: the socket02 detects an object (enemy or decoration), moves to avoid it or attack.

For the moment the only solution that I found in order to return the programming of his simple robot would be to program it like a flow chart.



<http://en.wikipedia.org/wiki/Flowchart>

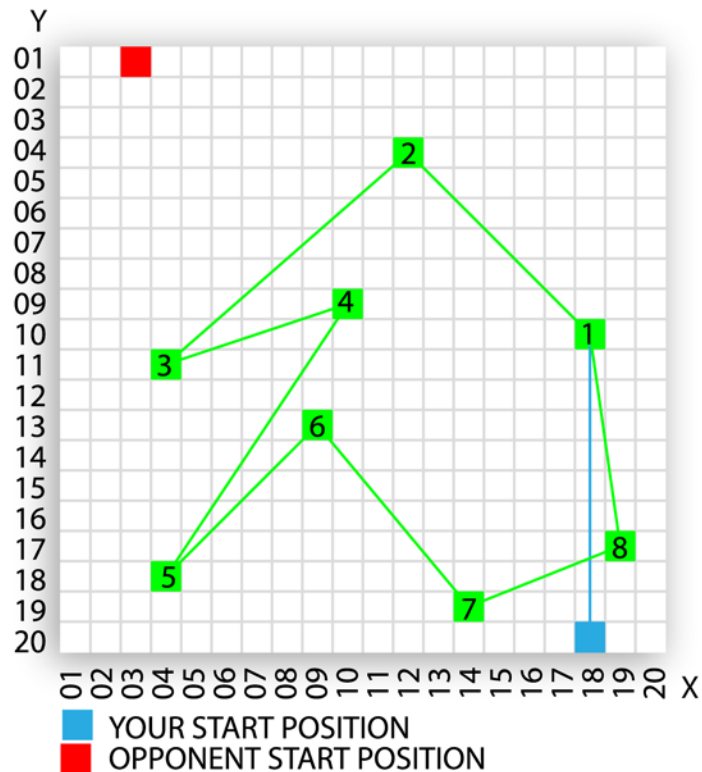


Like present on the example of the preceding page, the robot moves in check not, of course the ideal would be that it can also move in a completely autonomous way for the version “Expert” whom one does not have need to parameterize in advance his course and that it can itself make it or at least almost.

On this page I will present an example of arena and the checkpoints preregistered. But before... Why Preregistered? To have to program the course of the robot allows not to be bored (for the beginner) with all to program, to program the fact of avoiding an obstacle, to be in withdrawal or other. That especially makes it possible to the occasional player to pass only 10minutes to build its robot, and to the players experienced to spend many hour to improve it.

That also avoids with the beginner making a robot who is likely to be wedged in the corners, yes it is stupid to say but much people will not think of it.

From the chart of the arena and the many points already recorded, the player can if it wishes it to program a course as on a chess-board, the function “move next checkpoint” will deal with launching a function already to record by defect allowing to move the robot with the following position. For example of many RTS uses this system for the patrols of soldiers.



COURSE OF THE ROBOT
LOOP [
1(18;10)
2(12;04)
3(04;11)
4(10;09)
5(04;18)
6(09;13)
7(14;19)
8(19;17)
]

WHO IS THE CHAMPION

Haha, maintaining it is with the harder turn... because to make a robot which moves it is well, to measure it with the other engineers it is better, which will be the best in the play. Above all let us explain a little how the whole functions, after being itself made an account user, and built its small robot the robot be to safeguard in its workshop, zones reserved with the users to manage those on a limited number (5 maximum robot for example).

Three times per day, the user can make fight his robot against an adversary with the choice or randomly and to choose its chart if there is a possible selection, the robot of the user and that of the opponent thus launches out automatic (that the opponent is to connect or disconnect), starting from there the two robots go faced. If the robots are well programmed, or at least if the robot of the programmer is well programmed both robots will meet and clash, leaving a winner and a loser. But if the two robots do not meet, it is that there is a problem on the level of the programming and it would be judicious to re-examine its robot and its programming so that does not arrive any more.

In the event of tie, aucuns of the robots gains of point... because it may be that is a programming error and in this case neither the user nor his opponent deserves of point.

In the event of defeat, user gain not experiments, but gain 10% of kitty, on the other hand opponent gains him 50% of kitty and 15% of experiments (even if it is not connected), it gains since its robot was well programmed and that it is functional, that allows him gone up level rather quickly.

In the event of victory, the user gains 100% of the experiment available for this match and the totality of the points of the kitty, his opponent does not gain anything to him and receives a notification of the match by e-mail, with the possibility of seeing the match, of modifying his robot, of being avenged (on its daily credit of tests).

As it is specified, the principal goal of the play is not to fight another robot but to make so that its robot gains, and for that it must be programmed and built perfectly in order to make a success of its mission.

Each player must have thus chooses a principal robot which will be to regard as the challenger in the event of combat, the part starts for the user who the opponent is to connect or disconnect, it is thus judicious always to have like principal robot, a general-purpose machine on all the situations, the talent of the engineer is rather important.

Who fights who?

It is increasingly more interesting to fight robots of its level, but it is often damage to always fight weakest. In order to offer a better play, the profits in XP and Point, depend on the robot of the opponent, plus the opponent is strong and more the chances to have many experiments and Point are important, but the difficulty will be also increased, the reverse is possible, plus its opponent is weak and the chance to have much XP and of Point will be also weak. It is thus interesting to know to fight the players of its level.

It is also always cool to fight the robot of his friend like a small challenge or a play, or to fight the robot of a precise opponent, the idea to have like choice to fight a random robot or to fight that of a precise player is important, an search engine is always a value always good to take in order to offer a play which remains open. (That makes it possible to make fun takes place its work place of the defeat of his/her colleague...)

The experiment and points.

A thing practices is to offer a gift no-claims bonus to the winner and gone up thus in level to return the robots more to improve and the choice while composing larger, for assembled in level of play the experiments gained during engagements is necessary, more one gains of combat and more one deserves to meet of the stronger player and to see the possibility

of ordering more complex component in order to make better robots. The points as for them allow the purchase of part accessible on its level, the purchase of new weapons, frame and others make it possible to build of another type of robot and to gain more easily or to be able faced stronger players. Why the levels, the players will gain experiment more and more, the objective is always to program additional levels and components with the players who go up rather quickly, to offer unlimited contents and possibilities of unlimited construction as they gain stages. There is thus necessary during the programming of the play to leave an open standard to improve and develop continuously the play, it alone limit remains imagination more... another small is to offer to the best players to indirectly take part in the development of new weapons or component of new arena, etc... Give the impression to the user whom it makes the play and whom this one follower with him is offered a very positive value to this one.

Another important point is to offer kinds of tournaments from time to time or several robots clashes in an arena on a list of authorized component, offering best to the manufacturer and to programmer profits important or single (single component, a special row, sums of points important, etc...)

The idea to have challenges is also something which can make the play exceptional while offering to the users vis-a-vis scenarios or their meninx will have to be activated in order to make a success of them.

Here is my idea, it is summarized in 3 points: Design, programming, Challenge. Because after all, to build its own robot programmed to type on the robot of its pal is the dream of all...

BOT EXPLORA

Bot Explora is as for him more to turn towards the ludic one, as specified in introduction the principle of design and programming remains the same one, each level has a number of element given.

A scenario

The robots are everywhere today, more the share of time we do not realize there, one can see them on the space programs, in sea-beds, the soldier, industry, etc... It would be interesting to work much of scenario on the topics above.

An overall picture...

Ground and of its objective, in order to program the robot it is always appreciable not to be blind vis-a-vis him, to know the form of the ground can make it possible to develop its robot in another way.

A robot

It can be in part to detach on a list of many component and to choose the good within sight of the situation, or to be already to assemble and there the programming will have to play a more important part, it is besides can be more interesting to start according to the levels:

Easy: Construction of the robot to guide with the keyboard

Means: programming of robot already built

Difficult: programming of robot which one built

The levels superior is released according to our success, it is noted that it east can be uses to program way has to make it possible to add levels (user), that makes it possible to the user to share problems more or less to complicate, and thus to prolong the lifespan of the play.