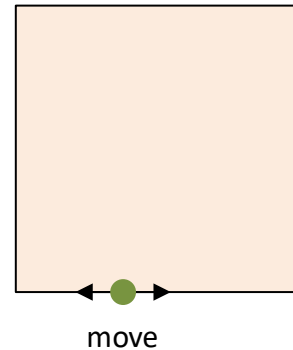


CPS406 Introduction to Software Engineering project iterations 2/3:

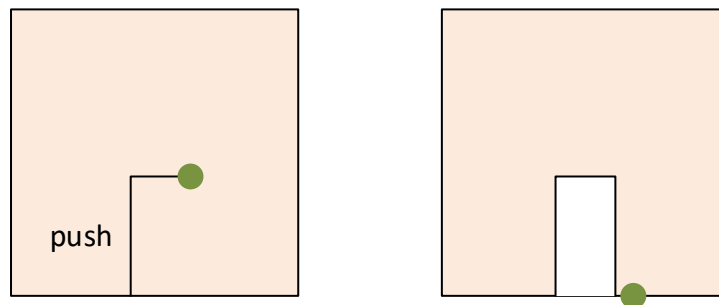
The Qix game

Your desire to qualify for the Ryerson Computer Gamers Hall of Fame, you need to qualify by implementing as much of the Qix game as possible. The basic outlines of the game follow.

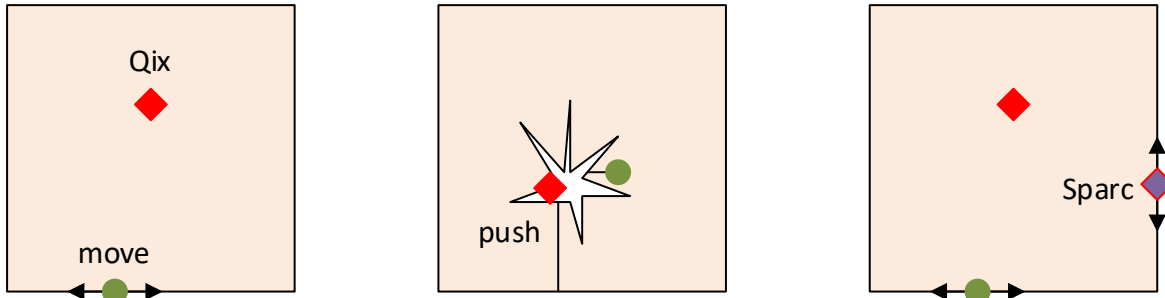
The game is played on a square field. The player (that would be you) moves a marker, say, of green colour along the edges of the field – the commands would be to Move left, right, u, and down. For simplicity, you may use just two of those, and change direction as you pass a corner of the field.



Your goal is to claim as much of an area inside the field as possible. To this end, you need another command, say, Push which causes the marker to enter the field. By simultaneously pressing one of the Move commands, you create an outline of an incursion into the field. Once your marker reaches the edge of the original field, the incursion changes colour and the field is effectively reduced. Your goal is to claim a predefined portion of the area of the field, say, 50% or so. (Ideally, this should be adjusted as a parameter before the game.) Did I say that the edge includes the original edge plus the inner side of all successful incursions?

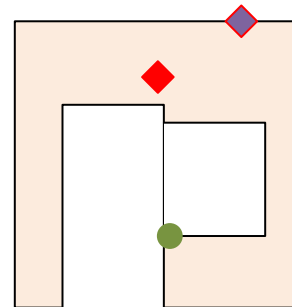


The game as described so far would be extremely easy, were it not for the fact that there are enemies which try to get to you. First, there is the Qix, a terrifying creature that wanders randomly through the field itself. As long as you're on the edge, you're safe from the Qix. To be fair, the Qix does not chase you – it just wanders around, but it is still deadly. Namely, if you begin a push and Qix manages to reach you before you actually finish the incursion, you will be set back (say, lose a life or a predefined amount of life force) and the incursion is effectively canceled – you are sent back to the location where the push has begun. But if you successfully end a push, you're safe again, and the free area in which the Qix can wander is reduced.



The other enemy (or enemies) are the Sparx. These are markers not unlike yours, and they move randomly along the edges of the field just like you do. You can begin with a single Sparc, and maybe progress to two of them – more than two would make for a rather annoying game. Also, it is wise to make them move at a slower pace than your marker, otherwise you're toast. The reason is, the Sparx are almost as lethal as the Qix – if they catch up with you as they move along, they will also eat up some of your life force. The same happens if a Sparc reaches the beginning of an unfinished push – the push is cancelled, your marker is back at the edge, and the Sparc is happily moving away from you.

You can assume that a Sparc always moves in the same direction, but that direction may change if they catch up with you, just to make your game more interesting.



So, the game basically unfolds as follows. You begin with a certain amount of life force, which is reduced at every encounter with the Qix or a Sparc. The goal is to claim as large a portion of the area of the field as possible whilst remaining alive. Once you do that, you can progress to the next level, with fresh supply of the life force and a faster Qix, or maybe two Sparx instead of a single one. And so on. Allowed variations also include a different shape of the Qix – a rotating stick, or a snake-like movement. But that's only if you want bonus points.

Your task is to develop as much as possible of the functionality of the game described above., and to submit the deliverables specified. Please note that you're free to choose the implementation platform – any operating system, any language, any graphics – in fact, you could easily program the game in a character based terminal.