

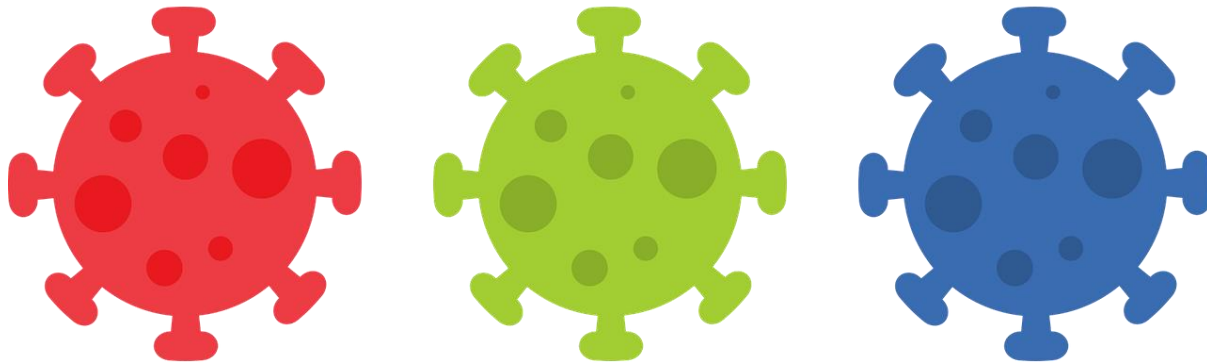


Apresentação do Projeto

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Antivírus por um dia



- **Antivírus por um dia** é um jogo de tabuleiro que tem como objetivo percorrer os setores da memória de um computador infectado por vírus. O jogador assume o papel do antivírus, que deve avançar pelos setores, eliminando os vírus que encontrar, até que o setor com a fonte de infecção seja alcançado.



Movimentando os jogadores P1 e P2

```

-----
|   Antivírus por um dia   |
-----

```

	1	2	3	4	5
	---	---	---	---	---
1					
	---	---	---	---	---
2					
	---	---	-*	---	---
3			*P12*		
	---	---	-*	---	---
4					
	---	---	---	---	---
5		X			
	---	---	---	---	---

P1: Setor [3,3] P2: Setor [3,3]

-----*-----	-----*-----
* *	* *
P1 P2	P1 P2
2/6 1/7	2/6 1/7
-----*-----	-----*-----

Where to go PLAYER 1 (P1)?

- U- Up
- D- Down
- L- Left
- R- Right

```
-----  
|   Antivírus por um dia   |  
-----
```

1	---	---	---	---	---
2	---	---	---	---	---
3	---	---	*P12*	---	---
4	---	---	---	---	---
5	---	X	---	---	---


P1: Setor [3,3] P2: Setor [3,3]

The diagram shows two identical 2x2 grids. Each grid has a dashed border. The top and bottom horizontal lines are dashed and have an asterisk (*) at their left and right ends. The left and right vertical lines are dashed and have an asterisk (*) at their top and bottom ends. Inside each grid, the top row contains 'P1' and 'P2', and the bottom row contains '2/6' and '1/7'. In the left grid, a green arrow points down to the 'P1' cell. In the right grid, a green arrow points down to the 'P2' cell.

Where to go PLAYER 1 (P1)?

U- Up

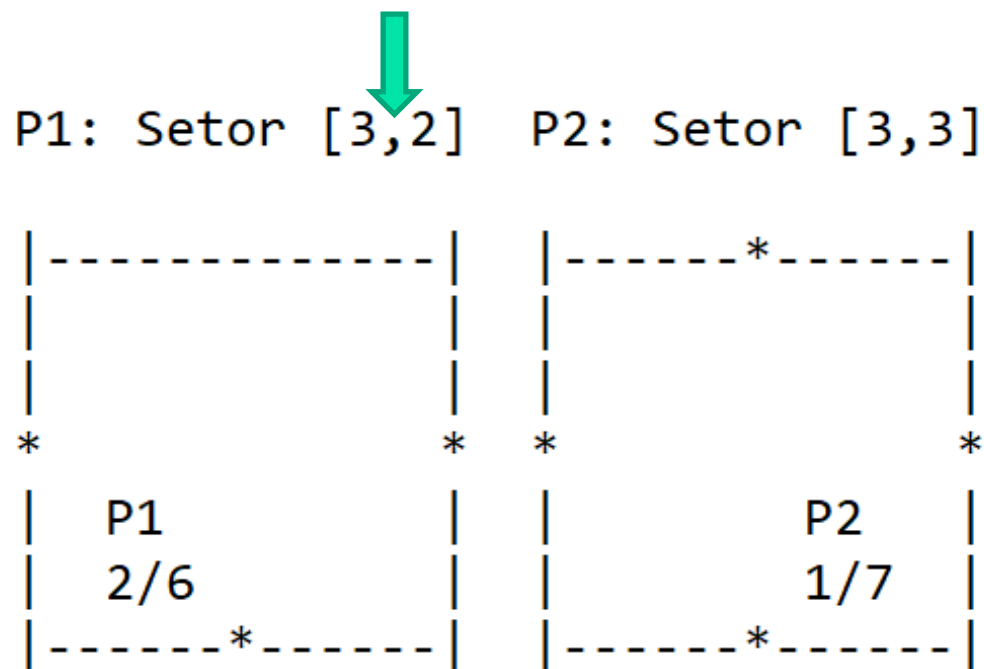
D- Down

L- Left 

R- Right

Antivírus por um dia

	1	2	3	4	5
1					
2					
3		*P1	*P2	*	
4					
5		X			



Where to go PLAYER 2 (P2)?

U- Up

D- Down

L- Left

R- Right

Antivírus por um dia

	1	2	3	4	5
1	---	---	---	---	---
2	---	---	---	---	---
3	---	---	*-	---	---
4	---	*P1	*P2	*	---
5	---	*-	*-	---	---
6	---	---	---	---	---
7	---	---	---	---	---
8	---	X	---	---	---
9	---	---	---	---	---

P1: Setor [3,2]

P2: Setor [3,3]

The diagram consists of two square regions, P1 and P2, each enclosed by a dashed border. Asterisks (*) are placed at the four corners of each square. Region P1 contains the text "P1" and "2/6". Region P2 contains the text "P2" and "1/7", and a green arrow points down to it.

Where to go PLAYER 2 (P2)?

U- Up ←

D- Down

L- Left

R- Right

Antivírus por um dia

	1	2	3	4	5
1					
2					
3					
4					
5					



P1: Setor [3,2]

P2: Setor [2,3]



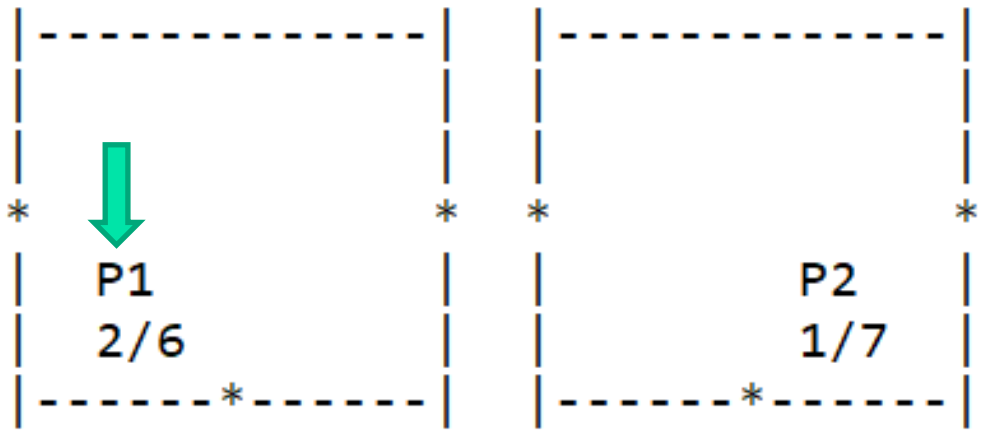
Where to go PLAYER 1 (P1)?

- U- Up
- D- Down
- L- Left
- R- Right

Antivírus por um dia

	1	2	3	4	5
1	---	---	---	---	---
2			*P2*		
3		*P1*	*--		
4		--*	--*		
5		X			

P1: Setor [3,2] P2: Setor [2,3]



Where to go PLAYER 1 (P1)?

- U- Up
- D- Down ←
- L- Left
- R- Right

Antivírus por um dia

	1	2	3	4	5
1	---	---	---	---	---
2	---	---	---	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	---	---	---	---	---

P1: Setor [4,2]

P2: Setor [2,3]

---	*	---
*	P1	*
---	2/6	---

---	*	---
*	P2	*
---	1/7	---

Where to go PLAYER 2 (P2)?

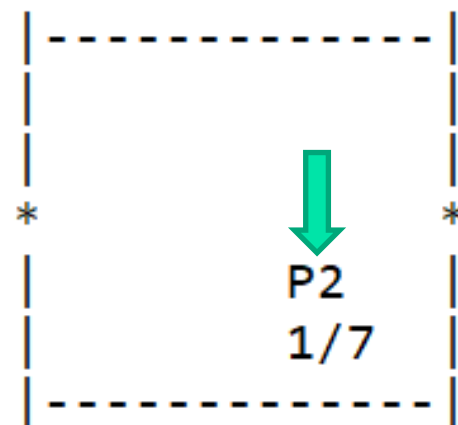
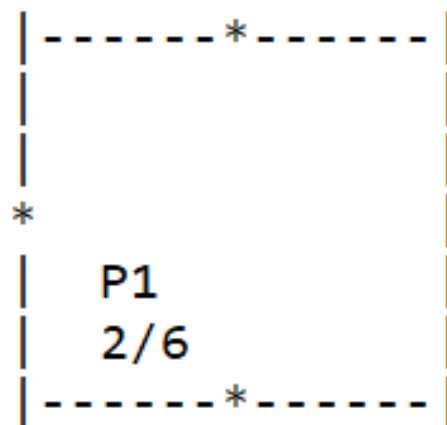
- U- Up
- D- Down
- L- Left
- R- Right

Antivírus por um dia

	1	2	3	4	5
1	---	---	---	---	---
2	---	---	---	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	---	---	---	---	---

P1: Setor [4,2]


P2: Setor [2,3]



Where to go PLAYER 2 (P2)?

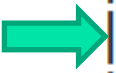
U- Up

D- Down

L- Left 

R- Right

Antivírus por um dia

	1	2	3	4	5
1	---	---	---	---	---
2		P2 *	*		
3		*	*	*	
4		*P1			
5		X			

P1: Setor [4,2]

-----*
*
P1
2/6
-----*

P2: Setor [2,2]

-----*
*
P2
1/7
-----*

Where to go PLAYER 1 (P1)?

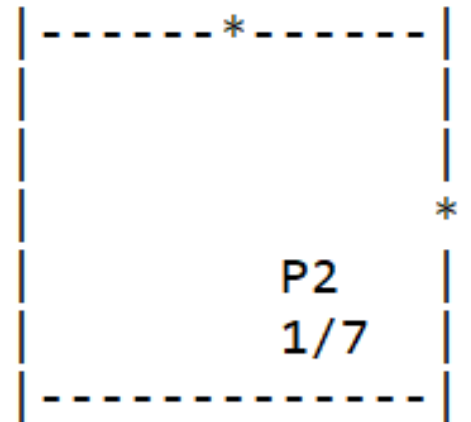
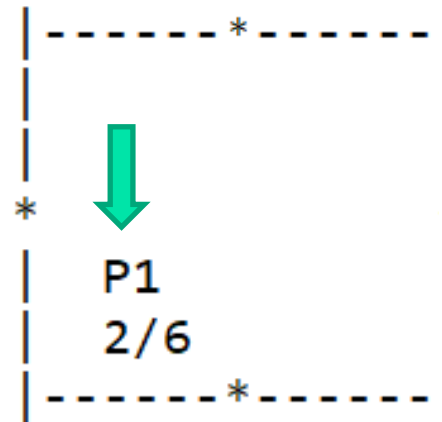
- U- Up
- D- Down
- L- Left
- R- Right

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
2	--- -*- --- --- ---	P2	*	*	
3	--- --- -*- --- ---	*	*	*	
4	--- -*- -*- --- ---	*P1			
5	--- -*- --- --- ---	X			


P1: Setor [4,2]

P2: Setor [2,2]



Where to go PLAYER 1 (P1)?

U- Up

D- Down 

L- Left

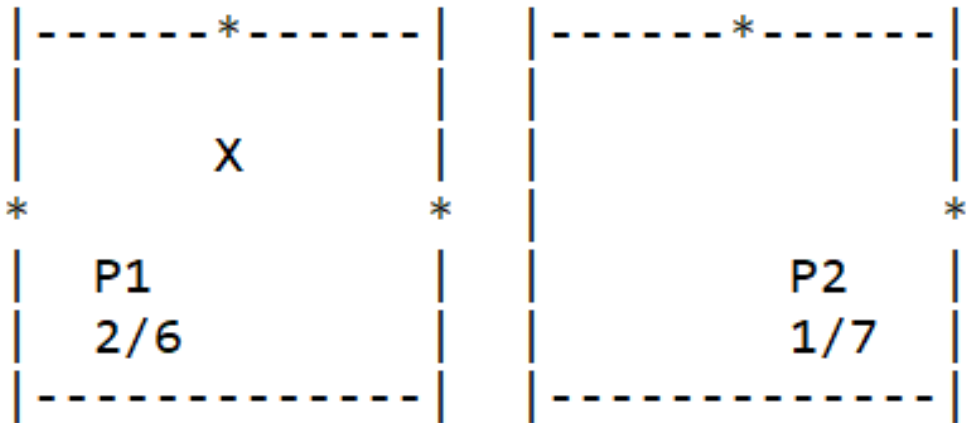
R- Right

Antivírus por um dia

	1	2	3	4	5
1					
2		P2	*	*	
3		*	*	*	
4		*			
5		*P1X*			

P1: Setor [2,1]

P2: Setor [1,2]



#####

You have won the game!!!

#####



Como funciona o sistema de
turnos...

Antivírus por um dia

	1	2	3	4	5
1	---	*P2*	---	---	---
2	---	-*-	---	---	---
3	P1	*	*	*	
4	---	---	---	---	---
5	---	---	---	---	---

P1: Setor [3,1] P2: Setor [1,2]

-----*	-----
1/1 2/2	1/1 2/2 3/3
	*
P1	P2
2/6	1/7
-----*	-----*

Os jogadores P1 e P2 podem executar duas ações, atacar e/ou procurar; já os inimigos (vírus) só podem atacar.

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
2	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
3	P1 * * * ---	* * * --- ---	* * * --- ---	* * * --- ---	* * * --- ---
4	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
5	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---

P1: Setor [3,1] P2: Setor [1,2]

--- --- --- --- ---	--- --- --- --- ---
1/1 2/2 --- --- ---	1/1 2/2 3/3 ---
P1 --- --- --- ---	--- --- --- --- ---
2/6 --- --- --- ---	--- --- --- --- ---
--- --- --- --- ---	--- --- --- --- ---

Ação 1: o jogador P1 vai atacar o inimigo 2/2

Antivírus por um dia

	1	2	3	4	5
1	---	---*P2*	---	---	---
2	---	---*-	---	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	---	---	---	---	---

P1: Setor [3,1]

P2: Setor [1,2]

1/1	2/0
P1	
2/6	

1/1	2/2	3/3
	P2	
	1/7	

O inimigo 2/2 morreu

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
2	--- -*- --- --- ---				
3	P1 * * * ---				
4	-*- -*- -*- --- ---				
5	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

↓		--- * ---	--- --- ---
1/1	2/0	1/1 2/2 3/3	
↓		--- *	*
P1		--- ---	P2 ---
2/6		--- ---	1/7 ---
---		--- * ---	--- * ---

Ação 2: o jogador P1 vai atacar o inimigo 1/1

Antivírus por um dia

	1	2	3	4	5
1	*P2*				
2		*	*		
3	P1*	*	*		
4					
5					

P1: Setor [3,1]

P2: Setor [1,2]

1/0	2/0	*
P1		*
2/6		

1/1	2/2	3/3
	P2	
	1/7	

O inimigo 1/1 morreu

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	*P2 *	--- --- --- ---	---	
2	--- - * - --- --- ---	* *	--- --- ---	---	
3	P1 * --- - * - --- ---	* * *	--- --- ---	---	
4	- * - - * - - * - --- ---		--- --- ---	---	
5	--- --- --- --- ---	--- --- --- ---	--- --- ---	---	

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----*	-----	
	1/0	2/0			1/1	2/2	3/3
				*	*		*
	P1					P2	
	2/6					1/7	
	-----*	-----			-----*	-----	

Ação 1: o jogador P2 vai atacar o inimigo 3/3

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
		*P2 *			
	--- -*- --- --- ---				
2			* *		
	-*- --- -*- --- ---				
3	P1 *	* *	* *		
	-*- -*- -*- --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	---*---	---*---
	1/0 2/0	1/1 2/2 3/2
	P1	P2
	2/6	1/7
	---*---	---*---



O inimigo 3 tomou 1 de dano.

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
		*P2 *			
	--- -*- --- --- ---				
2			* *		
	-*- --- -*- --- ---				
3	P1 *	* *	* *		
	-*- -*- -*- --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----*	-----	
	1/0	2/0			1/1	2/2	3/2
				*			*
	P1					P2	
	2/6					1/7	
	-----*	-----				-----*	-----



Ação 2: o jogador P2 vai atacar o inimigo 2/2

Antivírus por um dia

	1	2	3	4	5
1	*P2*				
2		*	*		
3	P1*	*	*		
4					
5					

P1: Setor [3,1] P2: Setor [1,2]

1/0	2/0	
P1		P2
2/6		1/7

O inimigo 2 tomou 1 de dano

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
2	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
3	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
4	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
5	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---

P1: Setor [3,1] P2: Setor [1,2]

1	--- --- --- --- ---	--- --- --- --- ---
2	--- --- --- --- ---	--- --- --- --- ---
3	--- --- --- --- ---	--- --- --- --- ---
4	--- --- --- --- ---	--- --- --- --- ---
5	--- --- --- --- ---	--- --- --- --- ---

O inimigo 1/1 ataca o jogador P2.
(P2 pode ou não sofrer dano)

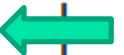
Antivírus por um dia

	1	2	3	4	5
	---	---	---	---	---
1		*P2*			
	---	-*	---	---	---
2			*	*	
	-*	---	-*	---	---
3	P1	*	*	*	
	-*	-*	-*	---	---
4					
	---	---	---	---	---
5					
	---	---	---	---	---

P1: Setor [3,1] P2: Setor [1,2]

-----*	-----
1/0	2/0
	*
P1	
2/6	
-----*	-----

-----	-----
1/1	2/1 3/2
*	*
	P2
	1/6
-----*	-----



O jogador P2 sofreu 1 de dano.

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
		*P2 *			
	--- -*- --- --- ---				
2			* *		
	-*- --- -*- --- ---				
3	P1 *	* *	* *		
	-*- -*- -*- --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----*	-----	
	1/0	2/0			1/1	2/1	3/2
				*	*		*
	P1					P2	
	2/6					1/6	
	-----*	-----			-----*	-----	



O inimigo 2/1 ataca o jogador P2
 (P2 pode ou não sofrer dano)

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	*P2 *			
	--- - * - --- --- ---				
2		* *			
	- * - --- - * - --- ---				
3	P1 * *	*			
	- * - - * - - * - --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----	-----	
	1/0	2/0			1/1	2/1	3/2
				*	*		*
	P1					P2	
	2/6					1/6	
	-----*	-----			-----*	-----	



O jogador P2 não sofreu nenhum dano.

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
2	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
3	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
4	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---
5	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---	--- --- --- --- ---

P1: Setor [3,1] P2: Setor [1,2]

1	--- --- --- --- ---	--- --- --- --- ---
2	--- --- --- --- ---	--- --- --- --- ---
3	--- --- --- --- ---	--- --- --- --- ---
4	--- --- --- --- ---	--- --- --- --- ---
5	--- --- --- --- ---	--- --- --- --- ---

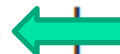
O inimigo 3/2 ataca o jogador P2.
(P2 pode ou não sofrer dano)

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
		*P2	*		
	--- -*- --- --- ---				
2			*	*	
	-*- --- -*- --- ---				
3	P1	*	*	*	
	-*- -*- -*- --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----	-----	
	1/0	2/0			1/1	2/1	3/2
				*	*		*
	P1					P2	
	2/6					1/3	
	-----*	-----			-----*	-----	



O jogador P2 sofreu 3 de dano.

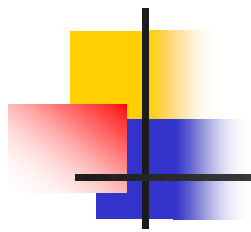
Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---	*P2 *			
2	--- -*- --- --- ---	* *			
3	P1 * --- -*- --- ---	* *			
4	-*- -*- -*- --- ---				
5	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

---*---	---
1/0 2/0	1/1 2/1 3/2
*	* *
P1	P2
2/6	1/3
---*---	---*---

Apenas o jogador P1 pode se movimentar.



Tipos de setores:
normal, oculto e privado

Antivírus por um dia

	1	2	3	4	5
	--- --- --- --- ---				
1	*P2 *				
	--- -* --- --- ---				
2	* *				
	-* --- -* --- ---				
3	P1 * * *				
	-* -* -* --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

--- * ---	--- ---
1/0 2/0	1/1 2/1 3/2
*	*
P1	P2
2/6	1/3
--- * ---	--- * ---

- Setor simples: sem restrição.

Antivírus por um dia

	1	2	3	4	5
1	---	---*P2*	---	---	---
2	---	---*	---	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	---	---	---	---	---

P1: Setor [3,1] P2: Setor [1,2]

-----*	-----*
1/0 2/0	1/1 2/1 3/2
P1	P2
2/6	1/3
-----*	-----*

- Setor oculto: quando o jogador atacar, o inimigo (vírus) pode ou não sofrer o dano.

Antivírus por um dia

	1	2	3	4	5
1	--- --- --- --- ---				
		*P2 *			
	--- -*- --- --- ---				
2			* *		
	-*- --- -*- --- ---				
3	P1 *	* *	* *		
	-*- -*- -*- --- ---				
4					
	--- --- --- --- ---				
5					
	--- --- --- --- ---				

P1: Setor [3,1] P2: Setor [1,2]

	-----*	-----			-----	
	1/0	2/0			1/1 2/1 3/2	
				*	*	
	P1				P2	
	2/6				1/3	
	-----*	-----			-----*	

- Setor privado: os jogadores não podem executar a ação de procurar.



Observações

- Grupos de no máximo 4 estudantes.
- Entrega: trabalho implementado (70%) e um relatório (30%).
 - O código deverá ser disponibilizado no Replit.
 - O relatório deverá ser entregue no Moodle C3SL (importante: adicionar link do trabalho).
- Efetuar entrega até 15/Fev/2022.



Conceitos avaliados no trabalho

- Classes (atributos e métodos)
- Construtores
- Encapsulamento
- Herança
- Interface
- Classe Abstrata
- Polimorfismo
- Coleção



Dicas

- Código para gerar números aleatórios
- Código para adicionar cores ao Terminal



Sobre a prova

- Data: 19/Dez/2022
- Conteúdo: todo o conteúdo visto até agora (classe à coleções)