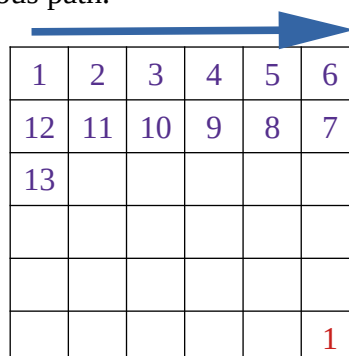
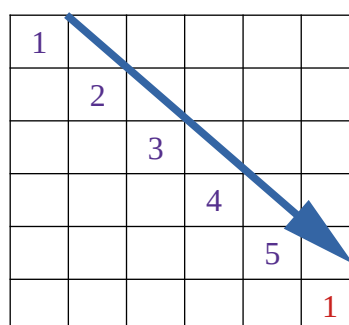


The sequencium problem is not so much a territorial problem, but one of longest path length. Our initial solution was to choose a square that was the nearest neighbour of the current highest scoring square, to make the longest continuous path.



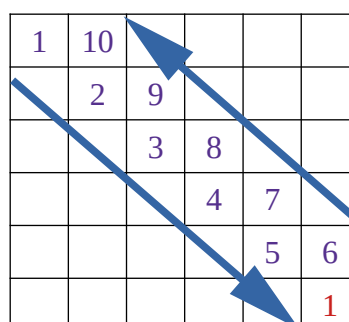
1	2	3	4	5	6
12	11	10	9	8	7
13					
					1

After that solution was written and we saw how it performed, we then looked at how we could disrupt our opposition by taking squares that were more valuable. We identified the middle diagonal joining the two starting points, as being valuable territory, as it effectively cut the board in two and allowed us to access both sides of the board once one side was filled.



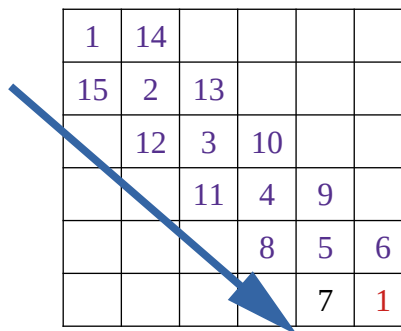
1					
	2				
		3			
			4		
				5	
					1

We then added that idea to our solution, and we noticed that although those squares forming that line provided us with an advantage, our opponent could move from one triangular sector of the board to the other triangular sector on the other side. Although a single line gave us an advantage, we realised that it did not prevent the other player access to other side of the board. A double middle diagonal would do that and we added that idea to the solution.



1	10				
	2	9			
		3	8		
			4	7	
				5	6
					1

By taking squares on both sides of the central diagonal we could take territory from the opponent, while still allowing us to capture a relatively large path length and hence a large score.



1	14				
15	2	13			
	12	3	10		
		11	4	9	
			8	5	6
				7	1

We also thought about crossing the second central diagonal into the territory that the opposition had their highest scoring square/s or had mostly occupied might be another winning strategy to deny the opposition the chance to seize those squares to increase their path length. If they were seized from us we could continue capturing squares on a third central diagonal. We could thus capture as many squares from the sector our opponent had mostly captured, before continuing capturing area on the empty sector.

We worked through the improved solutions systematically, testing them against the random solution and our other solutions to ensure that the strategies explored were effective.

Project Log E10-Sequencium

31-JAN-2022 Had discussion with team members of possible strategies for winning.

Move as as far into the middle as can go, try to block other player from gaining territory, try to block player off.

31-JAN-2022 Uploaded initial files from Blackboard

31-JAN-2022 Created PAWNs326.java class.

2-FEB-2022 Fixed Versioning on Github

2-FEB-2022 Rearranged files so they were in a good order for compiling

2-FEB-2022 Compiled and ran default framework

```
javac -d . sequencium/*.java
```

```
javac -d . Main.java
```

```
java Main
```

6-FEB-2022 Created Longest path version pawns326a - performs around 18 with RandomPlayer class

6-FEB-2022 Take diagonal then Longest Path version pawns326b

7-FEB-2022 “Fixed” the game so we could do comparisons by turning board in Game module

8-FEB-2022 Had discussion with Michael about turned board issue, was informed that we would have to manage the co-ordinates system from within in our created module

8-FEB-2022 Revisited strategy double middle line to prevent opponent from crossing

8-FEB-2022 Changed board rotation from the Game module to the Player module, to allow our module to play on both board starting positions

8-FEB-2022 Attempted to strengthen centre double line strategy

9-FEB-2022 Implemented version of strong central double line strategy pawns326c

9-FEB-2022 Wrote documentation

9-FEB-2022 Implemented version of strong central line taking from both sectors strategy pawns326d

9-FEB-2022 Submitted Module for evaluation

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