

Spike: 10**Title: Tactical Analysis****Author:** Hoang Bao Phuc Chau, 103523966**Goals / deliverables:****Create at least two different “bot” agents for the PlanetWars simulation.**

- One bot could be a simple bot you created earlier (as long as it does make valid moves).
- One of your bots must utilise tactical analysis to inform its decisions.

Clearly explain the tactical analysis being used in your spike report, and include the relevant snippet of bot code in the spike report.

Numerically compare each bots' performance and present the **results** of the performances over multiple maps and

multiple runs (to avoid simple random artefacts in the results). Include the results in your spike report. At a minimum a table should be used, but charts to show the results are encouraged.

Tactical Bot

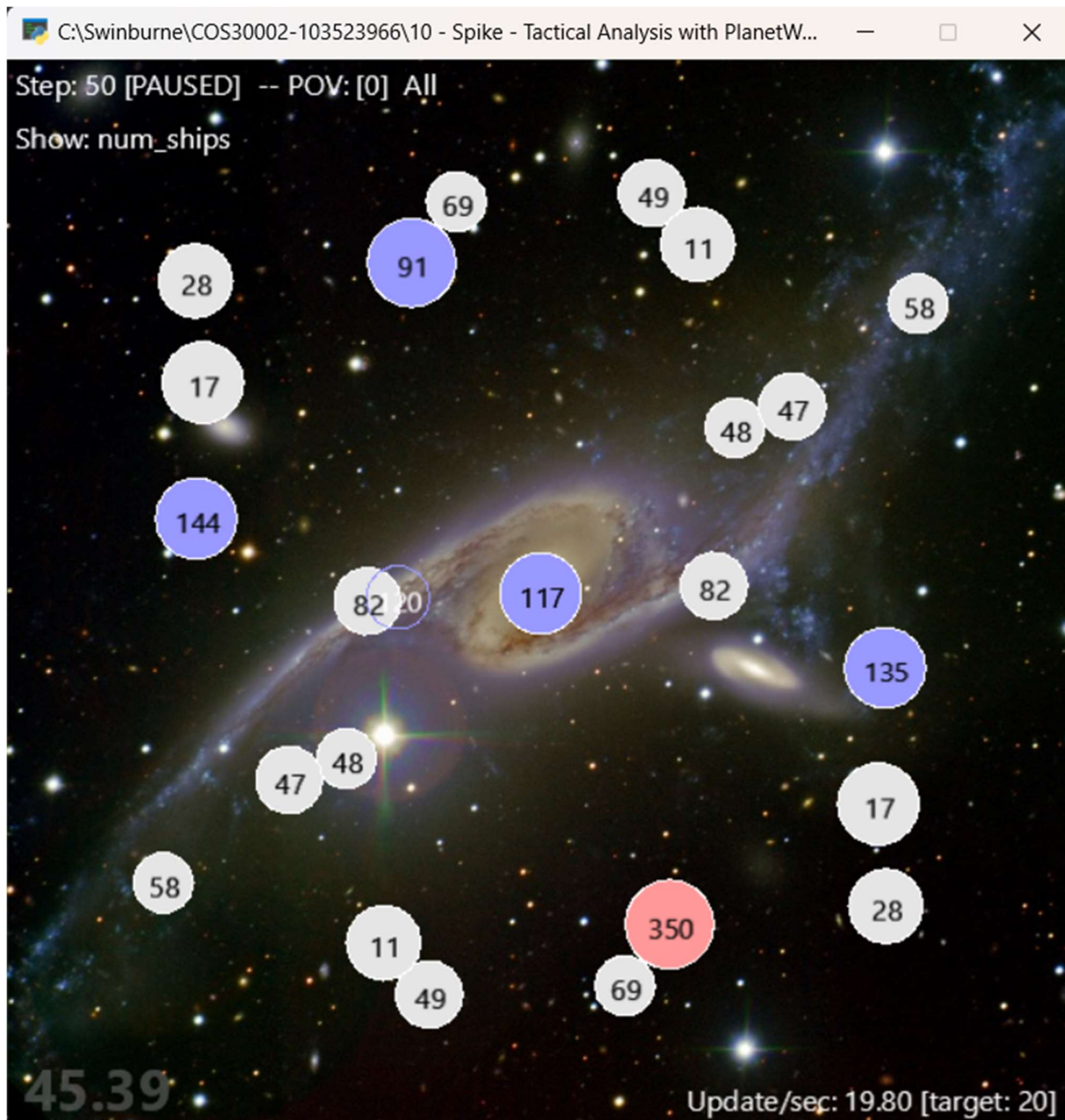
Tasks undertaken:

- From Task 9, copy all the code
- In side bot, create a file named “TacticalMove.py”
- Create a class named TacticalMove
- Initialise 2 variables and 1 array: I, mode and planet_value_compare[]
- Wrtie update function to update the situation of the bot such as planet value, event detection, etc.
- Write a function to get planet value
- Write a function to detect events, if the ship of one of my planet is defected and lower than 20, change to defensive mode, else change to aggressive mode
- Write a function to attack, simply copy BestWorst bot
- Wrtie a function to defend, copy BestWorst bot and make several changes such as deleting the part where we check if we should attack, and keep the part where we check the biggest planet.
- Also, instead of checking what enemy's planet have the lowest number of ships, we check where our planet has the lowest number of ships.
- Inside main.py, add 'TactialMove' inside settings= {'player' = [] }

What we found out:

The program runs as expected

	Tacti vs BestWorst / Steps	Tacti vs Rando / Steps	Tacti vs Blanko / Steps
Map 10	Tacti / 271	Tacti / 357	Tacti / 340
Map 20	Tacti / 501	Tacti / 654	Tacti / 312
Map 30	Tacti / 111	Tacti / 307	Tacti / 340

**Open issues/risks** [Optional – **remove** heading/section if not used!]:

List out the issues and risks that you have been unable to resolve at the end of the spike. You may have uncovered a whole range of new risks as well.

- eg. Risk xyz (new)

Recommendations [Optional – **remove** heading/section if not used!]:

Often based on any open issues/risks identified. You may state that another spike is required to resolve new issues identified (or) indicate that this spike has increased your confidence in XYZ and should move on.