**Name:** Brett Morris (#20225108)
**NetID:** 19bcm2
**Group:** 14

## Requested Feedback Questions

1. I do not see any logical errors that this proposition would cause. Since your project revolves around player A's optimal next move, I think it only makes sense that $H_{g, r, c}$ will have to be true in all scenarios until the player drops their last gem in hand. It may or may not be helpful to add a constraint that were to say something like 'Only one gem in hand, and there is not another turn, implies $H_{g, r, c}$ is false.', I'm not sure if that would be useful or not though.

2. I think your board constraints are fulfilling enough as I cannot think of any other game rules that could be implemented here. Though I would try to be clearer on them if you can be. For example, on the third constraint, I would include the word 'selected' before pocket, because "A pocket must have seeds in it" can be misleading (pockets may have no seeds in them, but pockets selected for taking seeds must have seeds).
I think your game constraints are great as well but may just be a starting point. As much of the implementation of your project will likely revolve around the four strategies for making a move in the game, it may be useful to add more propositions and/or constraints that relate to those strategies. For example, it could be helpful to have a proposition that describes how far away a pit is from the player's store (this could help determine whether strategy #1 is an option when selecting a pit to pick from).

3. In my opinion, this project does seem to be in a good place in terms of complexity! Just like some of the example projects we have seen, it looks like you have taken a seemingly simple game and made it into something more complex by examining these different strategies. I think by the time you implement these strategies into Python and Jape proofs, you will find that your project is quite complex and shows a good amount of understanding and creativity.

## Other Notes

- The mancala instructions could be a little bit clearer in the project summary, I was a little bit confused where it reads, "if the player's last deposit lands in an empty pit on their side of the board, they *claim* all the pieces in pit directly opposite theirs". I am unsure whether the word claim means 'claim pieces and deposit them into your store' or 'claim pieces and take another turn'.

- Some of the propositions or constraints written in your draft using multiple operators could use brackets for clearer meanings (ex. $H_{g, a, c} \wedge S_r \rightarrow P_{g, A, c}$ may look clearer if written as $(H_{g, a, c} \wedge S_r) \rightarrow P_{g, A, c}$).

- A proposition under your second constraint in your 'game constraints' is slightly confusing. $H_{0, A, 0}$ seems self-contradicting, because H should only be true if gems >= 1, yet here H is true when gems = 0 it seems.

- A small inconsistency in your report is the use of different words for the same thing in your project. The pieces used in the mancala board were referred to as gems, seeds, and pieces in the report, which can lead to confusion (this is unrelated to the logic in your project but seemed worth pointing out).

- I understand the Jape proofs are in early stages but try to make sure the given premises allow the conclusion to be reached. Some of the propositions present in the Jape proofs do not have the subscripts needed to match the propositions in your report, which would cause the conclusions to be unattainable.

- I think your ideas in general are great, and I think this project is going to turn out very well. The most difficult part may be to set up the game world and constraints well enough for Python, or even getting the Jape proofs set up, but I think you are on your way to an awesome final model and report 😊 Wish you guys the best!