1. What wikiHow article did you pick and why?
   How to Survive in the Woods https://www.wikihow.com/Survive-in-the-Woods

2. What portions of the article did you select to translate to PDDL?
   I selected the first part of the article to generate “collect water”, “purify water” problems. And I use part 2 to generate the “build a shelter” problem, part 4 for “start a fire” problem.

3. Give some examples of the actions, types, and predicates you used in your domain.
   The details are in my domain file. There are some required actions to have in order to achieve the goal. For example, for “build a shelter” problem, we need to get long branches but also other branches helping prop up the main one. Adding on twigs and leaves, you can build a shelter successfully near the tree. Predicates are just like some helper functions, which assist the action function to succeed. For example, I defined “has_branches” to check whether there are branches for us to collect for the foundation of shelter. Types are also needed to help us check what items are in this location or the player has. For instance, after the get_long_branch action is done, we need to put this long branch to player’s inventory.

4. Explain what goal you selected for your problem, and give the initial state and solution that you created.
   For “collect water” problem, the initial state is that waterfall has water. We need to go from the current location to waterfall to get water. For “purify water”, the initial state is the same except we added the container and cloth. We need to get water first and then strain water then use container to boil water or directly purify it in sunlight. For “build a shelter”, the initial state is that we have branches, twigs and leaves in the “path” location, which has a lot of greens. We need to get long branch, propped branches and twigs leaves in order to build a shelter near two trees. For “start_fire”, we need to collect dry materials, twigs and leaves first in order to build teepee. Adding on the logs we collected, we could successfully start a fire. For its initial state, we still need to set required items in the “path” location.

5. What limitations of PDDL did you encounter that makes it difficult to precisely convert a wikiHow description into PDDL?
   Some requirements in wikiHow are very detailed. For example, we need to find a 10 feet long branch. However, it is very hard to detect one in reality. Besides, some procedures are hard to be interpreted as an action in PDDL, like “form a V shape”, “Make sure the branch is firmly held in place by shaking it a little”.

6. Could your PDDL be used as an interesting challenge for a text-adventure-style game? If so, how? If not, what would be needed to create an interesting challenge?
   I don’t think so. The problem is too specific to this environment and there are no auto generation scripts behind that. We need to use more generalized machine learning models to create this challenge, like GPT-3.

7. Discuss how you might use GPT-3 to automatically or semi-automatically convert a wikiHow article to PDDL?

I think we can use it to learn the action we need to achieve the goal by training different texts->actions. And for each action, we need to set up corresponding types and predicates so that the key elements of PDDL can be generated.