CS 427

Homework 2

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# Problem 1

## Part A

Data: Mechanical parts in an automobile

Goal: Problem Part

This would benefit form a data driven search because it is unknown which mechanical parts are causing problems and therefore there is no clear goal state without searching.

## Part B

Data: Common ancestor

Goal: Me

This would benefit from a goal driven search, because the branching factor could potentially be smaller going backwards since each state will only have two parents.

## Part C

Data: Me

Goal: Distant Cousin

This would benefit from a bidirectional search in order to find the common ancestor.

## Part D

Data: A claim in plane geometry

Goal: A theorem proving the claim

This would benefit from a bidirectional search. Determining if goal or data driven search is better for the proof largely depends on the claim and the type of proof being used, therefore bidirectional search will be able to take into account both types of searches depending on the problem.

## Part E

Data: Sonar reading

Goal: Identified Object

This would benefit from data driven search because the start is clearly defined from the sonar reading, which could then be matched to a potential very larger number of objects.

## Part F

Data: plant

Goal: classification of the plant

This would benefit from data driven search because the start state is clearly defined by the plant, which could then be matched to a larger number of species, genus, etc…