1. a. The longest word ladder that I could find for a 3 letter word was from Ace to Lag. The word ladder had a height of 6:

lag

lat

lit

ait

act

ace

b. The longest word ladder that I could find for a 4 letter word was between Comb

and Quit. The word ladder had a height of 8.

comb

coma

cola

colt

dolt

doit

duit

Quit

c. The longest word ladder that I could find for a 5 letter word was between Quite

and Carom. The word ladder had a height of 20!

quite

quits

duits

ducts

duces

dices

dives

divas

divan

diwan

dewan

dewar

debar

kebar

kabar

kabab

kabob

cabob

carob

carom

1. The method I used to find the longest short ladder was by testing words that don’t have many vowels or have weird spellings. This makes the program have to take many extra steps just to find the in-between words.
2. The reason short words tend to have shorter ladders is because there just simply isn’t enough letters to change to create new words. With only 3 or 4 letters, there is only so many words you can make, much less words that connect two words.
3. If a word is shorter it will be much easier to connect to another word. I found that at 6 letters words begin to be hard to connect. I believe that this is because the longer a word gets, the more unique words you can create, which makes it harder to find words that are just slightly different, unlike with shorter words that tend to have many similarities.