

Exercise 5.3.21 Rabin-Karp Algorithm wildcards: How would you modify the Rabin-Karp algorithm to search for a given pattern with the additional proviso that the middle character is a “wildcard” (any text character at all can match it).

Solution: Recall Rabin-Karp algorithm uses modular hashing.

- Since the middle character can be any character, we can skip this character and try comparing with the characters left and right of it.
- Essentially, we could compute text-hashes skipping middle character as that is where the wildcard is.
- The algorithm follows same process as before but just skips the middle characters each time when using the text and pattern comparison.