RabinKarp

```java
public class RabinKarp {

  public final static int d = 256;
  public final static int q = 101;

  public static void search(String pattern, String text) {
    int M = pattern.length();
    int N = text.length();
    int i, j;
    int p = 0;
    int t = 0;
    int h = 1;

    for (i = 0; i < M - 1; i++)
      h = (h * d) % q;

    for (i = 0; i < M; i++) {
      p = (d * p + pattern.charAt(i)) % q;
      t = (d * t + text.charAt(i)) % q;
    }

    for (i = 0; i <= N - M; i++) {
      if (p == t) {
        for (j = 0; j < M; j++) {
          if (text.charAt(i + j) != pattern.charAt(j))
            break;
        }
        if (j == M)
          System.out.println("Pattern found at index " + i);
      }
```

```java
        if (i < N - M) {

            t = (d * (t - text.charAt(i) * h) + text.charAt(i + M)) % q;


            if (t < 0)

                t = (t + q);

        }

    }

}


public static void main(String[] args) {

    String text = "GEEKS FOR GEEKS";

    String pattern = "GEEK";

    search(pattern, text);

}

}
```



```java
  7  ***************************************
  8
  9  public class Main
 10  {
 11          public final static int d = 256;
 12      public final static int q = 101;
 13
 14      public static void search(String pattern, String text) {
 15          int M = pattern.length();
 16          int N = text.length();
 17          int i, j;
 18          int p = 0;
 19          int t = 0;
 20          int h = 1;
 21
 22          for (i = 0; i < M - 1; i++)
 23              h = (h * d) % q;
 24
 25          for (i = 0; i < M; i++) {
 26              p = (d * p + pattern.charAt(i)) % q;
 27              t = (d * t + text.charAt(i)) % q;
 28          }
 29
 30          for (i = 0; i <= N - M; i++) {
 31              if (p == t) {
 32                  for (j = 0; j < M; j++) {
 33                      if (text.charAt(i + j) != pattern.charAt(j))
 34                          break;
```

input

```
Pattern found at index 0
Pattern found at index 10


...Program finished with exit code 0
```