

HM Demo

HashMap <String, Integer> hm = new HashMap<>();

key value
data type data type

- (i) (key, value) pair
- (ii) unique on 'key' basis
- (iii) unordered

India → 100
Eng → ~~200~~ 400
Nz → 90

```
hm.put("India", 100);  
hm.put("Eng", 200);  
hm.put("Nz", 90);  
hm.put("Eng", 400);
```

India \rightarrow 100

Eng \rightarrow 200

N2 \rightarrow ~~90~~ 60

SL \rightarrow 450

String vs Integer

hm

① hm.put(k, v)
O(1)

k ✓ updation
k ✗ addition

hm.put("N2", 60);

hm.put("SL", 450);

② hm.containsKey(k)
O(1)

k ✓ true
k ✗ false

③ hm.get(k)
O(1)

k ✓ value
k ✗ null

④ hm.remove(k)
O(1)

k ✓ remove
k ✗ nothing

⑤ hm.keySet() \rightarrow ["N2", "India", "SL",
"Eng"]

highest
freq. character

str: a b a z h n q n p a m n t n o r h

a \rightarrow 3

t \rightarrow 1

b \rightarrow 1

o \rightarrow 1

z \rightarrow 1

r \rightarrow 1

h \rightarrow 2

n \rightarrow 4

q \rightarrow 1

p \rightarrow 1

m \rightarrow 1

str : a b a c b d a c d b

ch

a	b	c	d	e	f	g	h	i	j	k	-	-	-	-	-	-	z
3	3	2	2														
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	...	25

freq[idx]++;

idx = ch - 'a'

str : o a b a c b m d a c d b m a

↑

```
public static char highestFreqChar(String str) {  
    HashMap<Character,Integer>fmap = new HashMap<>();  
  
    //populate this freq map  
    for(int i=0; i < str.length();i++) {  
        char ch = str.charAt(i);  
  
        if(fmap.containsKey(ch) == true) {  
            int nf = fmap.get(ch) + 1;  
            fmap.put(ch,nf);  
        }  
        else {  
            fmap.put(ch,1);  
        }  
    }  
  
    char hfc = '\0';  
    int mf = 0;  
  
    for(Character key : fmap.keySet()) {  
        int val = fmap.get(key);  
  
        if(val > mf) {  
            hfc = key;  
            mf = val;  
        }  
    }  
  
    return hfc;  
}
```

✓ 'o' - 2

✓ a - ~~1~~ ~~2~~ ~~3~~ 4

✓ b - ~~1~~ ~~2~~ 3

✓ c - ~~1~~ 2

✓ m - ~~1~~ 2

✓ d - ~~1~~ 2

h/c = ~~o~~ ~~2~~ a

m/c = ~~o~~ ~~2~~ 4

```

public static char highestFreqChar(String str) {
    HashMap<Character,Integer> fmap = new HashMap<>();

    //populate this freq map
    for(int i=0; i < str.length();i++) {
        char ch = str.charAt(i);

        if(fmap.containsKey(ch) == true) {
            int nf = fmap.get(ch) + 1;
            fmap.put(ch,nf);
        }
        else {
            fmap.put(ch,1);
        }
    }

    char hfc = '\0';
    int mf = 0;

    for(Character key : fmap.keySet()) {
        int val = fmap.get(key);

        if(val > mf) {
            hfc = key;
            mf = val;
        }
    }

    return hfc;
}

```

str: t a b a c d q b d

↑

t - 1

a - 2

b - 2

c - 1

d - 2

q - 1

hfc = ~~t~~ ^a
 mf = ~~2~~ ²