

# Update Expressions for AtomicInteger

Integer	AtomicInteger
f++	f.getAndIncrement()
++f	f.incrementAndGet()
f--	f.getAndDecrement()
--f	f.decrementAndGet()
f = f + e	f.addAndGet(e)
f += e	f.addAndGet(e)
f = f - e	f.addAndGet(-e)
f -= e	f.addAndGet(-e)

# Code Patterns matching putIfAbsent()

```
(i)  if (!map.containsKey(key)) {  
      map.put(key, value);  
      }  
  
(ii) boolean keyExists = map.containsKey(key);  
      if (!keyExists) {  
          map.put(key, value);  
      }  
  
(iii) if (map.get(key) == null) {  
        map.put(key, value);  
      }  
  
(iv) Object result = map.get(key);  
      if (result == null) {  
          map.put(key, value);  
      }
```

**map.putIfAbsent(key, value);**

# Code Patterns: remove() and replace()

```
if(hm.containsKey("a_key"))  
    hm.remove("a_key");
```

... all the other  
variations seen previously

```
if(hm.containsKey("a_key"))  
    hm.put("a_key", "a_value");
```

... all the other variations

```
hm.remove("a_key");
```

```
hm.replace("a_key", "a_value");
```