

Map.prototype extensions

map, filter, and more

Design choices

- Directly on **Map.prototype** (see the [spec](#))

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CollectionPrototype%

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- Binding `::` operator and `itertools`? (not a proposal yet)

User-level API

1. Simple value map:

```
new Map([['x', 10], ['y', 20]])  
  .map((v, k, m) => v * 2);
```

=> new map: x: **20**, y: **40**
(keys are preserved)

User-level API

2. Entries map:

```
new Map([[ 'x', 10 ], [ 'y', 20 ]])
```

```
.mapEntries((v, k, m) => {  
  if (k == 'x') return [ 'z', v ];  
  return [ k, v * 2 ];  
});
```

=> new map: z: **10**, y: **40**
(fully transformed map)

User-level API

1. Filter map:

```
new Map([['x', 10], ['y', 20]])  
  .filter((v, k, m) => v > 10);
```

=> new map: y: **20**

User-level API

Note:

The *map.map(...)* and *map.filter(...)* API is the same from user perspective in both case:

- **Map.prototype** storage
- **%CollectionPrototype%**

(storage is an implementation detail)

Protocol design choices

- Internal methods call to generate a new map (see the [spec](#)). Works on maps and objects that implement internal map slots.
- Call explicit user-level methods like **set**, and **get** (see this [comment](#)). Can be generic for any “map-like” object.

Explicit methods:

```
Object.defineProperty(%CollectionPrototype%, 'map', {  
  value: function (fun) {  
    let result = new this.constructor();  
    for (let [key, val] of this) { // implies iterable  
      result.set(key, val); // calls user-level “set”  
    }  
    return result;  
  },  
  configurable: true,  
  enumerable: false,  
  writable: true  
});
```



```
import { map } from "itertools";
```

```
var newMap = oldMap::map(([k, v]) => [k + 1, v + 1]);
```

(see this [comment](#))

- Not a proposal yet
- Can it even be considered potentially?

Overall

- To correlate with **map.forEach** better to be **map.map** and **map.filter**, not **map::map**
- Direct **Map.prototype** or **%CollectionPrototype%** - to be discussed (doesn't affect user-level).