

```

: number
function filter<T>(elems:T[], predicateFn:(elem:T) => boolean) {
    var results:T[] = [];
    forEach(elems, function(elem:T) {
        if(predicateFn(elem)) {
            results.push(elem);
        }
    })
    return results;
}

let numbers:number[] = [5,7,10,4,77,24];

let evens = filter(numbers, function(no) {
    return no % 2 === 0;
});

```

```

:ProductType[]
function filter<T>(elems:T[], predicateFn:(elem:T) => boolean) {
    var results:T[] = [];
    forEach(elems, function(elem:T) {
        if(predicateFn(elem)) {
            results.push(elem);
        }
    })
    return results;
}

let products:ProductType[] = [
    {id: 1, name: "iPhone 16", price: 89999.00, category: "mobile"},
    {id: 2, name: "Sony Bravia", price: 271000.00, category: "tv"},
    {id: 3, name: "Samsung Fold", price: 145000.00, category: "mobile"},
    {id: 3, name: "Logitech Mouse", price: 540.00, category: "computer"},
    {id: 4, name: "Onida ", price: 3000.00, category: "tv"}
];

let mobiles = filter(products, function(p) {
    return p.category === 'mobile';
});

forEach(mobiles, console.log);

```

Mapped Type

```

type Immutable<T> = {
    readonly [P in keyof T]: T[P];
}

type ImmutableEmployee = Immutable<Employee>

type Employee = {
    name: string,
    email: string,
    phone: string
}

```

```

let emp:ImmutableEmployee = {
    "name": "Raj",
    "email": "raj@gmail.com",
    "phone": "3535"
};

```

T[P] will be name
 T[P] will be email
 T[P] will be phone

readonly name: string
 readonly email: string
 readonly phone: string

```

type Optional<T> = {
  [P in keyof T]?: T[P];
}

```

title
title?

```

type Mobile = {
  "title": string,
  "price": number,
  "manufacturer": string
}

```

```

type OptOpp = Optional<Mobile>;

```

```

type ResultTypeOf<T> = T extends (...args:any[]) => infer R ? R : never

```

```

function someTask(name:string, age: number) {
  // return Object literal
  return {
    name,
    age: age
  }
}

```

return value of any function
take it/ infer as R

```

type SomeTaskResultType = ResultTypeOf<typeof someTask>

```

```

let result: SomeTaskResultType = someTask("Roger", 45);

```

```

type PromiseType = ResultTypeOf<typeof fetch>
let users: PromiseType = fetch("");

```