Exercise 6

Task 1

Create a loop that iterates through the properties of an object and prints each property along with its value. However, you should only print properties that belong directly to the object, not those inherited from its prototype chain. Utilize the `hasOwnProperty()` method to achieve this.

Expected output:

```
name: Bohemian Rhapsody
band: Queen
released: 31 October 1975
duration: 355
```

Task 2

```
const personInfo = {
  name: "Ferry",
  age: 62,
  city: "Caracas",
};

const jobInfo = {
  experience: 7,
  occupation: "Speech-Language Pathologist",
};
```

Create a script that performs the following tasks:

- Merge the properties of two objects, `personInfo` and `jobInfo`, and store them in a new object named `fullInfo`.

- Add a new property to the `fullInfo` object named `isRetired` with a value of `false`.
- Use a `for...in` loop to iterate through `fullInfo`, and log each property and its corresponding value in the format: `[property]: [value]`.

Task 3

Create a script demonstrating object destructuring by extracting properties from the provided `movie` object and logging them. Specifically, construct a logging message that includes the person's name, producer, budget, and duration time.

```
const movie = {
  name: "Going in Style",
  producer: "Donald De Line",
  duration: 96,
  budget: "$25 million",
};
```

Expected output:

```
Name: Going in Style
Producer: Donald De Line
Duration: 96 minutes
Budget: $25 million
```

Task 4

You are given an array of numbers representing temperatures in Celsius. Your task is to use the `map()` method to create a new array, converting each temperature to Fahrenheit.

1. Use the `map()` method to create a new array called `fahrenheitTemperatures` by converting each temperature from Celsius to Fahrenheit.
    - The conversion formula is: `F = (C * 1.8) + 32`, where `F` is Fahrenheit and `C` is Celsius.
2. Log the initial array `celsiusTemperatures` to the console.
3. Log the modified array `fahrenheitTemperatures` to the console.

```
// Initial array
const celsiusTemperatures = [0, 25, 100, -5, 15];
```

Task 6

1. The original array is given as `products`, containing objects representing products with properties `name`, `price`, and `featured`.
2. Use the `find()` method to discover **the first product** in the array with the `featured` property set to `true`.
3. If a featured product is found, log its name and price; otherwise, log a message indicating that no featured product was found.

```
const products = [
  { name: "Laptop", price: 1200, featured: false },
  { name: "Headphones", price: 150, featured: true },
  { name: "Smartphone", price: 800, featured: false },
  { name: "Camera", price: 1000, featured: true },
];
```

Expected output:

```
Featured product: Headphones, Price: $150
```

Task 5

Given an array of student objects, use the `filter()` method to create a new array called `highScorers` that includes only the students with exam scores **greater** than or **equal** to 90.

- The original array is given as `students`, containing objects representing students with properties `name` and `score`.
- Check if the student's score is greater or equal to 90.

```
const students = [
  { name: "Alice", score: 92 },
  { name: "Bob", score: 87 },
  { name: "Charlie", score: 95 },
  { name: "David", score: 78 },
  { name: "Emma", score: 90 },
];
```

Expected output:

```
Alice
Charlie
Emma
```

Task 7

Given an array of books, each represented by an object with properties (`title`, `author`, `publicationYear`), create a solution that performs the following tasks:

1. Sort the array of books:
    - Sort by title in ascending order.
    - Sort by author in descending order.
    - Sort by year in descending order.
2. Extract specific properties into separate arrays:

- Create an array containing only the titles of books (sorted by title in ascending order).
- Create an array containing only the authors of books (sorted by author in descending order).
- Create an array containing only the publication years of books (sorted by year in descending order).

Ensure that the original array of books remains unaltered.

```
const books = [
  {
    title: "Noughts & Crosses",
    author: "Malorie Blackman",
    publicationYear: 2001,
  },
  {
    title: "Priestdaddy",
    author: "Patricia Lockwood",
    publicationYear: 2017,
  },
  {
    title: "The Cost of Living",
    author: "Deborah Levy",
    publicationYear: 2018,
  },
];
```

Expected output:

Sorted by Title (Ascending): Noughts & Crosses, Priestdaddy, The Cost of Living

Sorted by Author (Descending): Patricia Lockwood, Malorie Blackman, Deborah Levy

Sorted by Year (Descending): 2018, 2017, 2001