# Exam Preparation I

**02. Products**

You can check your solutions in [Judge](https://judge.softuni.org/Contests/Practice/Index/4698#1).

**Your Task**

Your task is to write a single **function** **solve()** that performs various data manipulation operations on a given array of product objects in a tech shop. You will **add**, **remove**, **update**, and **filter** products within this array. The function **solve()** should take an **array** of **products** as its **parameter**. **Inside** this **function**, you will define several **methods** to handle specific operations, and **each method** should **return** its **respective message**.

You are provided with an **array** called **products** that contains objects. Each object represents a product and has the following **properties**:

|  |
| --- |
| const products = [  { id: 1, name: "Laptop", category: "Electronics", price: 1200, stock: 30 },  { id: 2, name: "Smartphone", category: "Electronics", price: 800, stock: 50 },  { id: 3, name: "Headphones", category: "Accessories", price: 150, stock: 100 }  ]; |

Write the following **methods** **inside** the **solve()** function:

**Filter products by category**

* Write a function **getProductsByCategory(category)** that takes a **category** parameter and returns an array of products belonging to the given category.
* The method should return new array with **filtered products**.

#### Add a new product

* Write a function **addProduct(id, name, category, price, stock)** that takes five parameters (**id**, **name**, **category**, **price**, **stock**) and adds a new product to the products array.
* The method should return **products array with new product included**.

#### Find product by ID

* Write a function **getProductById(id)** that takes an **id parameter** and returns the **product object** with the **given id**.
* The method should return **product object** or `Product with ID ${id} not found`

#### Remove product by ID

* Write a function **removeProductById(id)** that takes an **id parameter** and **removes** the **product** with the **given id** from the product array.
* The method should return **products array without the removed product**.
* If the product with this ID does not exist, return: `Product with ID ${id} not found`

#### Update product price

* Write a function **updateProductPrice(id, newPrice)** that takes an **id** parameter and a **newPrice** parameter and updates the price of the product with the given id.
* The method should return **products array with updated product price**.
* If the product with this ID does not exist, return: `Product with ID ${id} not found`

#### Update product stock

* Write a function **updateProductStock(id, newStock)** that takes an **id** parameter and a **newStock** parameter and updates the stock of the product with the given id.
* The method should return **products array with updated product stock**.
* If the product with this ID does not exist, return: `Product with ID ${id} not found`

At the end of the **solve()** function, **do not forget to include the final** **return** **statement** that returns an object with references to all the methods you have defined. This will allow the methods to be called from outside the **solve()** function.

A computer code with text

Description automatically generated with medium confidence

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| const store = solve(products);  store.**getProductsByCategory**("Electronics"); | [{id: 1, name: 'Laptop', category: 'Electronics', price: 1200, stock: 30}, {id: 2, name: 'Smartphone', category: 'Electronics', price: 800, stock: 50}] |
| store.**addProduct**(3, "Tablet", "Electronics", 300, 7); | [{id: 1, name: 'Laptop', category: 'Electronics', price: 1200, stock: 30}, {id: 2, name: 'Smartphone', category: 'Electronics', price: 800, stock: 50}, {id: 3, name: 'Headphones', category: 'Accessories', price: 150, stock: 100}, {id: 3, name: 'Tablet', category: 'Electronics', price: 300, stock: 7}] |
| store.**getProductById**(1); | {id: 1, name: 'Laptop', category: 'Electronics', price: 1200, stock: 30} |
| store.**removeProductById**(2); | [{id: 1, name: 'Laptop', category: 'Electronics', price: 1200, stock: 30}, {id: 3, name: 'Headphones', category: 'Accessories', price: 150, stock: 100}] |
| store.**updateProductPrice**(3, 350); | [{id: 1, name: 'Laptop', category: 'Electronics', price: 1200, stock: 30}, {id: 2, name: 'Smartphone', category: 'Electronics', price: 800, stock: 50}, {id: 3, name: 'Headphones', category: 'Accessories', price: 350, stock: 100}] |
| store.**updateProductStock**(10, 8); | Product with ID 10 not found |

**Submission**

In Judge submit only **solve()** function.