

PRO192 – EXERCISE 2

Q1 (1 points)

Create a project named Q1. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer number from the keyboard. Write a method to list the prime numbers from 2 to n.

```
Enter a positive integer number n: 20
Prime numbers from 2 to 20 are:
2 3 5 7 11 13 17 19
```

```
Enter a positive integer number n: 23
Prime numbers from 2 to 23 are:
2 3 5 7 11 13 17 19 23
```

Q2 (1 points)

Create a project named Q2. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a method to list the first n prime numbers.

```
Enter a positive integer number n: 6
The first 6 prime numbers are:
2 3 5 7 11 13
```

```
Enter a positive integer number n: 4
The first 4 prime numbers are:
2 3 5 7
```

Q3 (1 points)

Create a project named Q3. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n integer elements from the keyboard. Input number k from the key board then count the occurrences of k in an array.

```
Enter a positive integer number n: 7
Enter 7 integer elements:
4 6 9 7 4 8 1
Enter the integer number k to count its occurrences: 4
The number 4 occurs 2 times in the array.
```

```
Enter a positive integer number n: 10
Enter 10 integer elements:
5 1 0 8 5 6 7 5 2 9
Enter the integer number k to count its occurrences: 5
The number 5 occurs 3 times in the array.
```

Q4 (1.5 points)

Create a project named Q4. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n integer elements from the keyboard. Find the second largest elements in an array.

```
Enter a positive integer number n: 10
Enter 10 integer elements:
2 6 4 8 5 1 9 8 2 7
The second largest element is: 8
```

```
Enter a positive integer number n: 5
Enter 5 integer elements:
4 4 4 4 4
There is no second largest element.
```

Q5 (1.5 points)

Create a project named Q5. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n integer elements from the keyboard. Find the second smallest elements in an array.

```
Enter a positive integer number n: 10
Enter 10 integer elements:
5 1 6 2 3 1 2 8 9 7
The second smallest element is: 2
```

```
Enter a positive integer number n: 5
Enter 5 integer elements:
4 4 4 4 4
There is no second smallest element.
```

Q6 (1 points)

Create a project named Q6. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n string elements from the keyboard. Find and display the longest element in an array.

```
Enter a positive integer number n: 6
Enter 6 string elements:
Cong
Hoa
Xa
Hoi
Chu
Nghia
The longest element is: Nghia
```

```
Enter a positive integer number n: 5
Enter 5 string elements:
Vu Van Huy
Tran Quan
Nam
Cao Ngoc Minh Anh
La Bat Vi
The longest element is: Cao Ngoc Minh Anh
```

Q7 (1 points)

Create a project named Q7. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n string elements from the keyboard. Find and display the shortest element in an array.

```
Enter a positive integer number n: 5
Enter 5 string elements:
Cong
Hoa
Xa
Hoi
Nghia
The shortest element is: Xa
```

```
Enter a positive integer number n: 5
Enter 5 string elements:
Nguyen Cong Hoan
Tran Dan
Cong Tang Ton Nu Thi Ninh
La Bat Vi
Ton Ngo Khong
The shortest element is: Tran Dan
```

Q8 (2 points)

Create a project named Q8. Create a class named **Main.java** containing the **main()** method and implement the following requirements. Enter n as a positive integer from the keyboard. Write a program to input n string elements from the keyboard. Input a positive number k from the keyboard. Find then display the strings with lengths greater than or equal to k.

```
* Enter a positive integer number n: 6
Enter 6 string elements:
Binh Nguyen
Nguyen Van Hien
Alibaba
Su phu
Chu Bat Gioi
Sa Tang
* Enter a positive integer number k: 10
* Strings with lengths greater than or equal to 10:
Binh Nguyen
Nguyen Van Hien
Chu Bat Gioi
```

```
* Enter a positive integer number n: 3
Enter 3 string elements:
Con ga gia
Vit con
Con meo to
* Enter a positive integer number k: 20
* Strings with lengths greater than or equal to 20:
```



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