

Python

Homework

Tasks

1. Write a script that asks the user for two numbers and prints the results of all 5 arithmetical operations (+, -, *, /, %).
2. Write a script that calculates the area of a square. Ask the user for two numbers (height and width) and calculate the area of the square.
3. Write a script that calculates the area of a triangle. Ask the user for two numbers (height and width) and calculate the area of the triangle.
4. Write a script that asks the user for dimensions of two squares and checks which of the squares is bigger.
5. Write a script that asks the user for 5 numbers and calculates the average of the 5 numbers.
6. Write a registration script according to the following rules.
 - a. Ask the user for his first name. Make sure that the name contains ONLY letters, and that the length of the name is at least two characters.
 - b. Ask the user for his last name. Make sure that the name contains ONLY letters, and that the length of the name is at least two characters.
 - c. Ask the user for his email. Make sure that the email address contains a '@' and a '.' (comma).
 - d. Ask the user for a phone number. Make sure that it is a valid Israeli mobile phone number. (Starts with '05', contains 10 digits, contains ONLY digits)
 - e. Ask the user for a password twice. Make sure that the password is at least 6 characters long. Also make sure that both the passwords that the user typed are the same.
 - f. All the previous fields are mandatory, thus if the user does not type some information the script should print an error message and exit.
 - g. At the end of the script print all the information that the user provided. Instead of printing the password print a sequence of * symbols that has the same length as the password typed by the user.
7. Write a script that asks for a phone number (NOT MOBILE) and tells which region that number belongs to.
For example, if the phone number is 08-XXXXXXX the script will tell that the number belong to the **Southern District**.
 - a. Make sure that the script can handle phone numbers with and without a '-' (dash).
8. Write a script that asks the user to enter three words and tells which of the words is the longest.

9. Write a script that print all the numbers from 1 to 10.
 - a. Modify the script so that it will ask the user for a number **N** and print all the numbers from 1 to **N**.
 - b. Modify the script so that it will print only the **EVEN** number from 1 to **N**.
10. Write a script that asks the user for 5 numbers and tell which number is the highest.

** For this task you are not allowed to use the built in functions **max()** and **min()**.*

 - a. Modify the script so that it will also tell which of the numbers is the lowest.
 - b. Modify the script again so that it will keep asking the user for numbers until the user enters the number 0. Only then check which number is the highest and lowest.
11. Write a script that asks the user for a number and then prints all the divisors for that number. For example, if the user types the number 15 the result will look like the following.

```
1
3
5
15
```

12. Write a script that asks the user for a number and tells if it is a prime number or not. For example, if the user types the number 97 the script will tell that it is a prime number.
13. Write a script that asks the user for dimensions of a square and then prints the square using the '*' symbol. For example, if the user enters the number 5 the script will print the following.

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

14. Modify the previous script so that it will ask for two numbers X and Y. Then the script will print a square according to the given dimensions. For example, if the user types 4 and 3 the result will look like the following.

```
* * * *
* * * *
* * * *
```

15. Modify the previous script so that it will print a hollow square. For example, if the user types 5 and 4 the result will look like the following.

```
* * * * *  
*       *  
*       *  
* * * * *
```