Javascript
COMP 3019J

1. Write a JavaScript function called "`is_timestring(str)` to check whether a given value is time string or not. Test your function using:
```
console.log(is_timeString("11:35:30"));
Expected response: true
console.log(is_timeString("90:90:90"));
Expected response: false
```

2. Write a function called "is_hex(str)" to test if a string is a hexadecimal or not. Test your function using:
   a. ```
   console.log(is_hex("ffffff"));
      Expected response: true
   ```
   b. ```
   console.log(is_hex("fgffff"));
      Expected response: false
   ```

3. Write a function called "is_uppercase(str)" to check if the first character of a string is uppercase or not. Test your function using:
   a. ```
   console.log(is_uppercase("html"));
      Expected response: false
   ```
   b. ```
   console.log(is_uppercase("Html"));
      Expected response: true
   ```
   c. ```
   console.log(is_uppercase("PHP"));
      Expected response: true
   ```

4. Write a function called "`is_email(str)`" to check if the string is an email address. An email address can contain the following features:
   a. Uppercase (`A-Z`) and lowercase (`a-z`) English letters
   b. Digits (`0-9`)
   c. Characters: ! # $ % & ' * + - / = ? ^ _ ` { | } ~
   d. Character: . ( period, dot or fullstop) provided that it is not the first or last character and it will not come one after the other

      Test your function using at least the following:
      ```
      console.log(vivek.nallur@ucd.ie)
      console.log(Vivek.Nallur@ucd.ie)
      console.log(Vivek.Nallur+webapp@ucd.ie)
      console.log(vivek-nallur@ucd.ie)
      console.log(vivek-nallur@ucd.ie)
      Expected response to all above: true

      console.log(vivek..nallur@ucd.ie)
      Expected response: false
      ```

5. Write a function called "`separate_thousands(str)`" which will print any valid number with thousands separated with a comma. Test your function with:

    a. `console.log(separate_thousands(1000));`
       `Expected Response: 1,000`

    b. `console.log(separate_thousands(12345.67));`
       `Expected Response: 12,345.67`

    c. `console.log(separate_thousands(100000));`
       `Expected Response: 100,000`

    d. `console.log(separate_thousands(1000000));`
       `Expected Response: 1,000,000`

6. Write a function called "`sort_string (str)`" to rearrange the letters in a string so they are sorted A to Z. Test your function with:

    `console.log(sort_string("United States"));`
    `Expected Response: "SUadeeinsttt"`

7. Write a function called "`count_words(str)`" which will count number of words in string. Test your function with:

    `console.log(count_words("The quick brown fox jumps over the lazy dog"));`
    `Expected Response: 9`

*Note* :

- Remove white-space from start and end position.
- Convert 2 or more spaces to 1.
- Exclude newline with a start spacing.