WWW Applications

Lab. 2

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The purpose of this list is to familiarize with Cascading Style Sheets (CSS), how to use colors on web pages, and with responsive web design (RWD) principles.

The lab materials contain the file „time_zones.html", the code of which is presented in **Appendix 1**. It presents three methods of adding CSS styles in an HTML file:

1. as an external file referenced in the <head> tag:

```
<!doctype html>
<html lang="pl">
<head>
    ...
    <link rel="stylesheet" href="URI path to CSS file"
integrity="hash pliku CSS" crossorigin="anonymous">
    <title>Three Time Zones</title>
    ...
</head>
```

2. In the form of CSS code placed inside the <style> tag in the <head> tag:

```
<!doctype html>
<html lang="pl">
<head>
    ...

    <style>
        // CSS styles
    </style>
</head>
```

3. In the form of CSS code placed inside the style attribute of the selected HTML tag (inline CSS style):

```
<p style="text-align: center;"> ... </p> .
```

Note the different effects of the „time_zones.html" file in the browser at different screen resolutions, that results in a change of the background color. These behaviors are presented in **Appendix 2**. Recall what is responsible for this effect.

Supporting materials regarding CSS stylesheets can be found on the website https://www.w3schools.com/css/ .

Get familiar with:

1. CSS syntax and concepts as selector, declaration, property, property value – https://www.w3schools.com/css/css_syntax.asp , https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/CSS_basics , https://www.w3schools.com/css/css_selectors.asp.
2. Concepts of CSS cascade, inheritance and resetting (normalization) of a browser style sheet:
   https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Cascade_and_inheritance ,
   https://developer.mozilla.org/en-US/docs/Web/CSS/Cascade ,
   https://medium.com/@elad/normalize-css-or-css-reset-9d75175c5d1e,
   http://nicolasgallagher.com/about-normalize-css/,
   https://stackoverflow.com/questions/6887336/what-is-the-difference-between-normalize-css-and-reset-css.

   Remark: Browser style sheet normalization is not to be confused with Unicode character normalization in a style sheet https://www.w3.org/International/questions/qa-html-css-normalization.pl .
3. Responsive web design (including concepts as `viewport` and `media queries`):
   https://www.w3schools.com/css/css_rwd_intro.asp ,
   https://www.w3schools.com/css/css_rwd_viewport.asp ,
   https://www.w3schools.com/css/css_rwd_mediaqueries.asp.
4. A list of predefined HTML colors:
   https://www.w3schools.com/colors/colors_names.asp .
5. The use of colors on websites:
   https://www.w3schools.com/css/css_colors.asp ,
   https://www.w3schools.com/css/css3_colors.asp .
6. Units used in CSS stylesheets: https://www.w3schools.com/css/css_units.asp .
7. Concepts as combinators, pseudo classes and pseudo elements:
   https://www.w3schools.com/css/css_combinators.asp ,
   https://www.w3schools.com/css/css_pseudo_classes.asp ,
   https://www.w3schools.com/css/css_pseudo_elements.asp .

Task 1

Move the style sheet code from inside the `<style>` tag to an external CSS file called „`ext_CSS.css`”, which will be placed in the „`style`” subdirectory of the directory where the „`time_zones.html`” is .

Task 2

Add your own CSS styles and modify the ones that have already been created.

Task 3

Add your own combinators, pseudo-classes, and pseudo-elements to the stylesheet.

Task 4

Implement a solution that will place time zones in one column and three lines when the resolution of the display device is less than or equal to 767 px, and in three columns and one line when the resolution of the display device is greater than or equal to 768 px. This is illustrated in **Appendix 3.**

Task 5

Get familiar how to embed to your document *Google Fonts* (https://fonts.google.com/) using *Google Fonts API* (https://developers.google.com/fonts/docs/getting_started). Use two different *Google fonts* to display the text in the file „time_zones.html".

Task 6

Normalize the browser stylesheet and *minify* the created CSS.

Appendix 1 – code of file "time_zones.html"

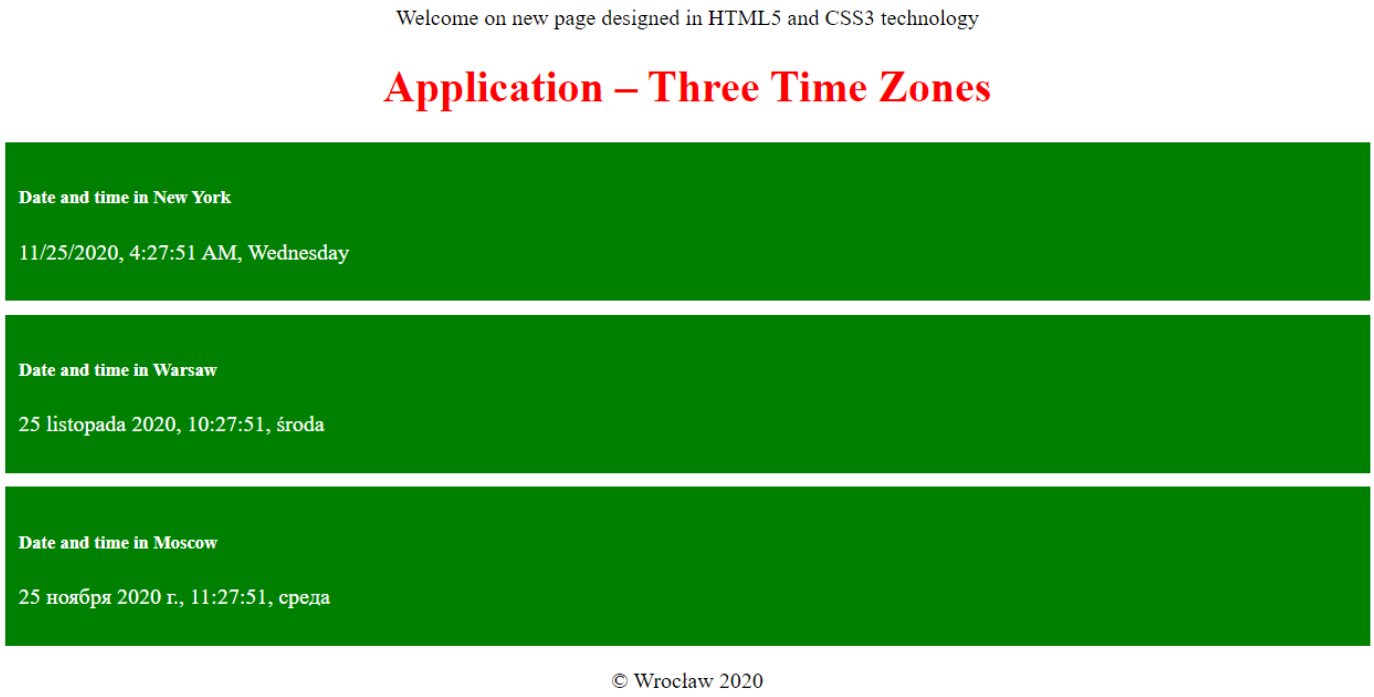
```
<!doctype html>
<html lang="pl">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-
fit=no">


    <link rel="stylesheet" href="URI path to CSS file" integrity="hash pliku CSS"
crossorigin="anonymous">

    <title>Three Time Zones</title>

   <style>
   .container-fluid {
    padding: 0;
   }

   .container-fluid > h1 {
    text-align: center;
   }

   section.strefa_czasowa {
    margin-top: 50px;
    background-color: black;
    color: white;
    margin: 10px;
    padding: 10px;
   }

   #glowny_naglowek {
    color: red;
   }

   @media screen and (min-width: 1024px) and (max-width: 1200px) {
   section.strefa_czasowa {
    background-color: green;
   }

   }

   </style>
  </head>
  <body>
  <nav>
```

```
   <!-- Nawigacja na stronie -->
  </nav>

  <header>
   <!-- Nagłówek strony -->
    <p style="text-align: center;"> Welcome on new page designed in HTML5 and CSS3
technology
   </p>
  </header>

   <main class="container-fluid">

    <h1 id="glowny_naglowek">Application  - Three Time Zones</h1>


        <section class="strefa_czasowa">
            <h5 class="card-title">Date and time in New York</h5>
            <p class="card-text" id="sdicNJ">Display New York date and time here,
seconds are supposed to change every second. </p>
        </section>

         <section class="strefa_czasowa">
            <h5 class="card-title">Date and time in Warsaw</h5>
            <p class="card-text" id="sdicW">Display Warsaw date and time here, seconds
are supposed to change every second.</p>
        </section>


         <section class="strefa_czasowa">
            <h5 class="card-title">Date and time in Moscow</h5>
            <p class="card-text" id="sdicM">Display Moscow date and time here, seconds
are supposed to change every second.</p>

        </section>



   </main> <!-- Koniec main class="container-fluid" -->

   <footer>
   <!-- Stopka strony -->
   <p style="text-align: center;">
    &copy; Wrocław 2020
   </p>
  </footer>



    <script>
     /* Skrypt JavaScript (ECMA Script)  wyświetlający datę i czas
      w Nowym Jorku, Warszawie i Moskwie */
      var generuj_dic = function(){
      var dic = new Date();
      var opcjeW =
      {year: 'numeric', month: 'long', day: 'numeric', hour: 'numeric', minute:
'numeric', second: 'numeric', hour12: false};
      var sdicW=document.querySelector("#sdicW");
      sdicW.textContent=dic.toLocaleString('pl-PL', opcjeW);
      sdicW.textContent+=', '+dic.toLocaleString('pl-PL', {weekday: 'long'});

      /* Wyrażam czas w ms od 1.01.1970 r. */
      var dic_local_ms=dic.getTime();
      console.log("dic: "+dic);
      console.log("dic_local_ms: "+dic_local_ms);

      var nowy_dic=new Date(dic_local_ms);
```

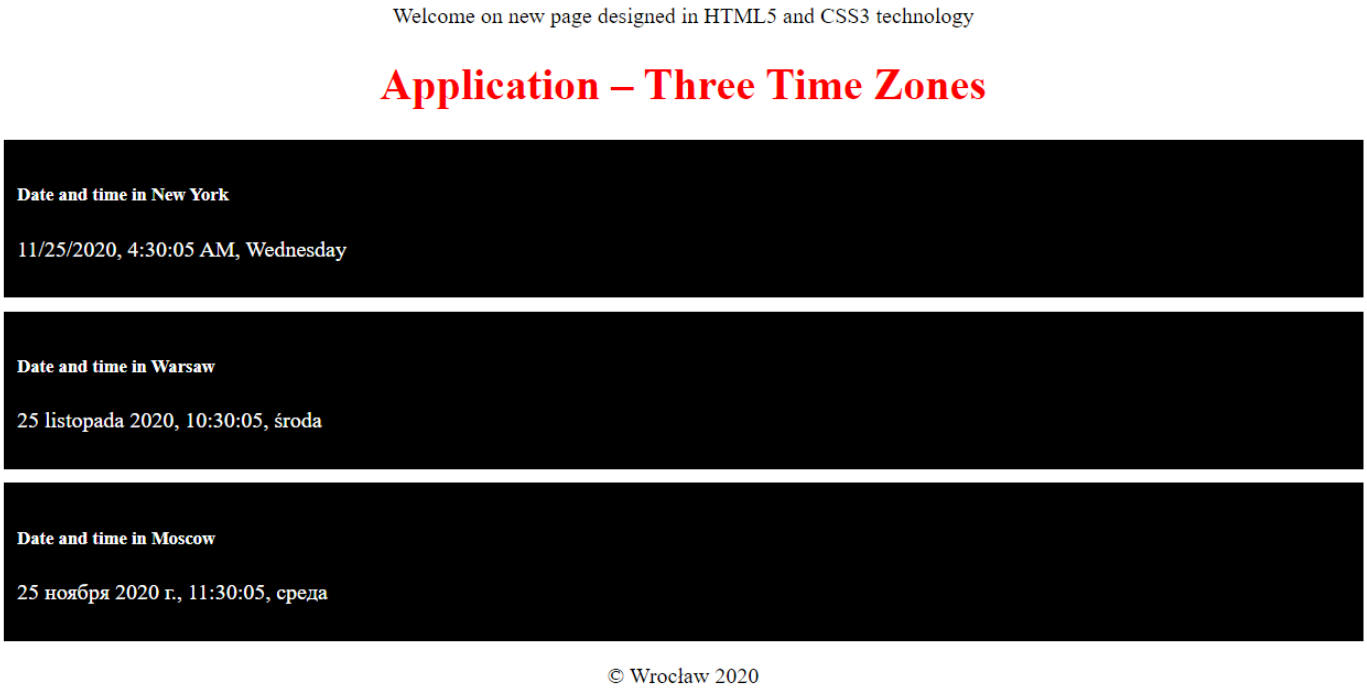
```
        console.log("nowy_dic: "+nowy_dic.toLocaleString());

        //local_offset dla Polski to -120 (minut), tzn. Polska jest  UTC+2h
        var local_offset=dic.getTimezoneOffset();
        console.log("local_offset: "+local_offset);

        /* czas w ms w Moskwie
        Moskwa=Warszawa+1h=Warszawa + 3 600 000 ms
        */
        var dic_M_ms=dic_local_ms+3600000;
        var dic_M=new Date(dic_M_ms);

        /* czas w ms w NJ
        NJ=Warszawa-6h=Warszawa -6* 3 600 000 ms
        */
        var dic_NJ_ms=dic_local_ms-6*3600000;
        var dic_NJ=new Date(dic_NJ_ms);


        var sdicNJ=document.querySelector("#sdicNJ");
        sdicNJ.textContent=dic_NJ.toLocaleString('en-US');
        sdicNJ.textContent+=', '+dic_NJ.toLocaleString('en-US', {weekday: 'long'});

        var sdicM=document.querySelector("#sdicM");
        sdicM.textContent=dic_M.toLocaleString('ru-RU', opcjeW);
        sdicM.textContent+=', '+dic_M.toLocaleString('ru-RU', {weekday: 'long'});
        };

        setInterval(generuj_dic,1000);
        //generuj_dic();

    </script>

  </body>
</html>
```

Appendix 2 – The effect of an execution of the file "time_zones.html" in the browser for different screen resolutions

The effect of an execution of the file "`time_zones.html`" in the browser for the screen resolution that is between 1024 and 1200 px:

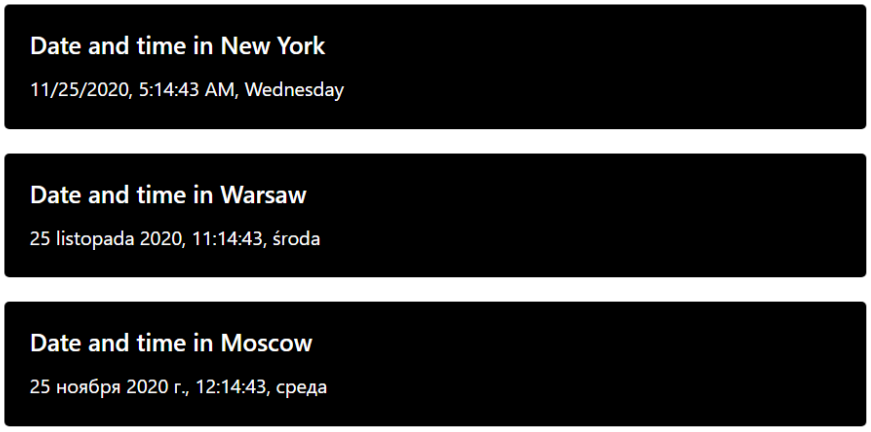


The effect of an execution of the file "`time_zones.html`" in the browser for the screen resolution that is less than 1024 and higher than 1200 px:



Appendix 3 – Desired change of arrangement of elements depending on the resolution of the display device, which is to occur in Task 4.

The desired effect of the file "`time_zones.html`" execution in the browser for a screen resolution less than 768 px:



The desired effect of the file "`time_zones.html`" execution in the browser for a screen resolution greater or equal 768 px: