

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ
**«БЕЛГОРОДСКИЙ ГОСУДАРСТВЕННЫЙ НАЦИОНАЛЬНЫЙ
ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ»**
(НИУ «БелГУ»)

ИНСТИТУТ ИНЖЕНЕРНЫХ И ЦИФРОВЫХ ТЕХНОЛОГИЙ

**КАФЕДРА ПРИКЛАДНОЙ МАТЕМАТИКИ И КОМПЬЮТЕРНОГО
МОДЕЛИРОВАНИЯ**

**Создание одностраничных Web-проектов с разметкой текста с
помощью HTML**

Лабораторная работа № 1
по дисциплине
«Web-программирование»
студента
3 курса группы 12002204
Короплясова Кирилла Романовича

Проверил:
Старший преподаватель,
Гончаров Д. М.

БЕЛГОРОД 2024

Цель работы: создать с помощью текстового редактора Web-страницы с текстом в соответствии с заданиями и применить разметку средствами языка HTML.

Ход работы:

Задание №1.

Во ходе изучения порядка выполнения работы (см. ниже) необходимо найти решения следующим подзадачам задания:

1. Создать новый проект сайта с названием *Letter* в соответствие со стандартной файловой структурой сайта.
2. Скопировать из секции ниже текст письма, который необходимо отформатировать, и вставить его в тело документа в файле *index.html* созданного проекта сайта:

Dr. Eleanor Gaye
Awesome Science faculty
University of Awesome
Bobtown, CA 99999,
USA
Tel: 123-456-7890
Email: no_reply@example.com
20 January 2016

Miss Eileen Dover
4321 Cliff Top Edge
Dover, CT9 XXX
UK

Re: Eileen Dover university application
Dear Eileen,

Thank you for your recent application to join us at the University of Awesome's science faculty to study as part of your PhD next year. I will answer your questions one by one, in the following sections.

Starting dates

We are happy to accommodate you starting your study with us at any time, however it would suit us better if you could start at the beginning of a semester; the start dates for each one are as follows:

First semester: 9 September 2016

Second semester: 15 January 2017

Third semester: 2 May 2017

Please let me know if this is ok, and if so which start date you would prefer.

You can find more information about important university dates on our website.

Subjects of study

At the Awesome Science Faculty, we have a pretty open-minded research facility — as long as the subjects fall somewhere in the realm of science and technology. You seem like an intelligent, dedicated researcher, and just the kind of person we'd like to have on our team. Saying that, of the ideas you submitted we were most intrigued by are as follows, in order of priority:

Turning H₂O into wine, and the health benefits of Resveratrol (C₁₄H₁₂O₃.)

Measuring the effect on performance of funk bassplayers at temperatures exceeding 30°C (86°F), when the audience size exponentially increases (effect of 3×10^3 increasing to 3×10^4 .)

HTML and CSS constructs for representing musical scores.

So please can you provide more information on each of these subjects, including how long you'd expect the research to take, required staff and other resources, and anything else you think we'd need to know? Thanks.

Exotic dance moves

Yes, you are right! As part of my post-doctorate work, I did study exotic tribal dances. To answer your question, my favourite dances are as follows, with definitions:

Polynesian chicken dance

A little known but very influential dance dating back as far as 300BC, a whole village would dance around in a circle like chickens, to encourage their livestock to be "fruitful".

Icelandic brownian shuffle

Before the Icelanders developed fire as a means of getting warm, they used to practice this dance, which involved huddling close together in a circle on the floor, and shuffling their bodies around in imperceptibly tiny, very rapid movements. One of my fellow students used to say that he thought this dance inspired modern styles such as Twerking.

Arctic robot dance

An interesting example of historic misinformation, English explorers in the 1960s believed to have discovered a new dance style characterized by "robotic", stilted movements, being practiced by inhabitants of Northern Alaska and Canada. Later on however it was discovered that they were just moving like this because they were really cold.

For more of my research, see my exotic dance research page.

Yours sincerely,

Dr Eleanor Gaye

University of Awesome motto: "Be awesome to each other." -- The memoirs of Bill S Preston, Esq

3. Создать в папке styles пустой файл с именем *main* и расширением *.css*.

4. Скопировать из секции ниже и вставить текст CSS-стиля в файл *main.css*:

```
body {  
  max-width: 800px;  
  margin: 0 auto;  
}  
.sender-column {  
  text-align: right;  
}  
h1 {  
  font-size: 1.5em;  
}  
h2 {  
  font-size: 1.3em;  
}  
p,ul,ol,dl,address {  
  font-size: 1.1em;  
}  
p, li, dd, dt, address {  
  line-height: 1.5;  
}
```

5. Подключить созданный CSS-файл со стилем к HTML-документу с текстом письма (*index.html*).

6. Отформатировать письмо, которое должно быть размещено во внутренней сети университета, в соответствие с имеющимися требованиями.

Требования к блочным элементам / структуре:

- Необходимо корректно структурировать весь документ, включив в него элементы doctype, и <html>, <head> и <body>.
- Письмо в целом должно быть размечено, используя параграфы и заголовки, за исключением следующих пунктов – один заголовок верхнего уровня (начинается на "Re:") и три заголовка второго уровня.
- Даты начала семестра, изучения предметов и экзотических танцев должны быть помечены, используя соответствующие типы списков.
- Два адреса должны быть помещены внутри элементов <address>. Каждая строка адреса должна находиться на новой строке, но не быть новым параграфом.

Требования к строчным элементам:

- Имена отправителя и получателя (как и "Tel" и "Email") должны быть выделены жирным.
- Четырем датам в документе необходимо выбрать правильные элементы содержащие машинно-читаемые даты.
- Первый адрес и первая дата в письме должны иметь атрибут class со значением "sender-column"; CSS стиль, который вы добавите позже, позволит выравнивать по правому боку, как оно и должно быть в классической разметке письма.
- Пять акронимов/аббревиатур в главном тексте письма должны быть размечены, чтобы предоставить подсказки для каждого акронима/аббревиатуры.
- Шесть под/надстрочных элементов должны быть оформлены корректно в химической формуле, как и числа 103 и 104 (степень числа должна быть над числом).
- Для разметки символов градуса и умножения воспользуйтесь справочниками в интернет.

- Постарайтесь выделить как минимум два нужных по смыслу слова в тексте жирным.
- Есть два места, где следует разместить гиперссылки; добавьте нужные ссылки с заголовками. В качестве адреса для ссылок используйте `http://example.com`.
- Девиз университета и цитата должны быть размечены соответствующими элементами.
- Требования к заголовку документа:
- Кодировка документа должна быть указана как utf-8 с использованием соответствующего мета-тега.
- Автор письма должен быть указан в соответствующем мета-теге.
- Предоставленный CSS должен быть включён в соответствующий тег.

Ход работы

Задание 1.

Листинг:

Файл `Index.html`.

```
<!DOCTYPE html>
<html lang="en-US">
<head>
  <meta charset="utf-8">
  <meta name="author" content="Dr Eleanor Gaye">
  <link rel="stylesheet" href="main.css">
</head>
<title>Letter</title>
<body>
<p style="text-align: right;">
<strong>Dr. Eleanor Gaye</strong><br>
Awesome Science Faculty<br>
University of awesome<br>
</p>
```

<address class = "sender-column">

Bobtown, CA 99999,

USA

</address>

<p style="text-align: right;">

Tel: 123-456-7890

Email: no_reply@example.com

</p>

<div class="sender-column">

<time datetime="2016-01-20">20 January 2016</time>

</div>

Miss Eileen Dover

<address

>4321 Cliff Top Edge

Dover, CT9 XXX

UK

</address>

<h1>Re: Eileen Dover university application</h1>

<p>Dear Eileen,</p>

<p>Thank you for your recent application to join us at the University of Awesome's science faculty to study as part of your <abbr title = "Doctor of Philosophy">PhD</abbr> next year. I will answer your questions one by one, in the following sections. </p>

<h2>Starting dates</h2>

<p>We are happy to accommodate you starting your study with us at any time, however it would suit us better if you could start at the

beginning of a semester; the start dates for each one are as follows:</p>

Осенний семестр: <time datetime="2016-09-01">1 September 2016</time>

Весенний семестр: <time datetime="2017-01-15">15 January 2017</time>

Летняя сессия: <time datetime="2017-06-01">1 June 2017</time>

<p>Please let me know if this is ok, and if so which start date you would prefer.</p>

<p>You can find more information about important university dates on our website.</p>

<h2>Subjects of study</h2>

<p>At the Awesome Science Faculty, we have a pretty open-minded research facility — as long as the subjects fall somewhere in the realm of

science and technology. You seem like an intelligent, dedicated researcher, and just the kind of person we'd like to have on our team.

Saying that, of the ideas you submitted we were most intrigued by are as follows, in order of priority:</p>

Turning H₂O into wine, and the health benefits of Resveratrol (C₁₄H₁₂O₃).

Measuring the effect on performance of funk bassplayers at temperatures exceeding 30°C (86°F), when the audience size exponentially

increases (effect of 3 × 10³ increasing to 3 × 10⁴).

<abbr title = "HyperText Markup Language">HTML</abbr> and <abbr title = "Cascading Style Sheets">CSS</abbr> constructs for representing musical scores.

<p>So please can you provide more information on each of these subjects, including how long you'd expect the research to take, required staff

and other resources, and anything else you think we'd need to know? Thanks.</p>

<h2>Exotic dance moves</h2>

<p>Yes, you are right! As part of my post-doctorate work, I did study exotic tribal dances. To answer your question, my favourite dances are

as follows, with definitions:</p>

<ul style="list-style-type: none; padding-left: 0;">

Polynesian chicken dance

A little known but very influential dance dating back as far as 300<abbr title = "Before Christ">BC</abbr>, a whole village would dance around in a circle like chickens, to

encourage their livestock to be "fruitful".

Icelandic brownian shuffle

Before the Icelanders developed fire as a means of getting warm, they used to practice this dance, which involved huddling close together

in a circle on the floor, and shuffling their bodies around in imperceptibly tiny, very rapid movements. One of my fellow students used to

say that he thought this dance inspired modern styles such as Twerking.

Arctic robot dance

An interesting example of historic misinformation, English explorers in the 1960s believed to have discovered a new dance style

characterized by "robotic", stilted movements, being practiced by inhabitants of Northern Alaska and Canada. Later on however it was

discovered that they were just moving like this because they were really cold.

<p>For more of my research, see my exotic dance research page.</p>

<p>Yours sincerely,</p>

<p>Dr Eleanor Gaye</p>

<p>University of Awesome motto: <q>Be awesome to each other.</q> -- <cite>The memoirs of Bill S Preston,</cite> <abbr title = "Esquire">Esq</abbr><p>

</body>

</html>

Файл Main.css.

```
body {
  max-width: 800px; margin: 0 auto;
}
.sender-column {
  text-align: right;
  font-style: normal;
}
h1 {
  font-size: 1.5em;
}
h2 {
  font-size: 1.3em;
}
p,ul,ol,dl,address {
  font-size: 1.1em;
```



```
}  
p, li, dd, dt, address {  
    line-height: 1.5;  
}
```

Скрин работы:

Dr. Eleanor Gaye
Awesome Science Faculty
University of awesome
Bobtown, CA 99999,
USA

Tel: 123-456-7890
Email: no_reply@example.com

20 January 2016

Miss Eileen Dover
4321 Cliff Top Edge
Dover, CT9 XXX
UK

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Starting dates

We are happy to accommodate you starting your study with us at any time, however it would suit us better if you could start at the beginning of a semester; the start dates for each one are as follows:

- Осенний семестр: 1 September 2016
- Весенний семестр: 15 January 2017
- Летняя сессия: 1 June 2017

Please let me know if this is ok, and if so which start date you would prefer.

You can find more information about [important university dates](#) on our website.

Subjects of study

At the Awesome Science Faculty, we have a pretty open-minded research facility — as long as the subjects fall somewhere in the realm of science and technology. You seem like an intelligent, dedicated researcher, and just the kind of person we'd like to have on our team. Saying that, of the ideas you submitted we were most intrigued by are as follows, in order of priority:

1. Turning H₂O into wine, and the health benefits of Resveratrol (C₁₄H₁₂O₃.)
2. Measuring the effect on performance of funk bassplayers at temperatures exceeding 30°C (86°F), when the audience size exponentially increases (effect of 3×10^3 increasing to 3×10^4 .)
3. HTML and CSS constructs for representing musical scores.

So please can you provide more information on each of these subjects, including how long you'd expect the research to take, required staff and other resources, and anything else you think we'd need to know? Thanks.

Exotic dance moves

Yes, you are right! As part of my post-doctorate work, I *did* study exotic tribal dances. To answer your question, my favourite dances are as follows, with definitions:

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A little known but *very* influential dance dating back as far as 300BC, a whole village would dance around in a circle like chickens, to encourage their livestock to be "fruitful".

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Arctic robot dance

An interesting example of historic misinformation, English explorers in the 1960s believed to have discovered a new dance style characterized by "robotic", stilted movements, being practiced by inhabitants of Northern Alaska and Canada. Later on however it was discovered that they were just moving like this because they were really cold.

For more of my research, see my [exotic dance research page](#).

Yours sincerely,

Dr Eleanor Gaye

University of Awesome motto: "Be awesome to each other." -- *The memoirs of Bill S Preston, Esq*

Задание 2.

Вы работаете в школе. В настоящее время ваши ученики изучают планеты солнечной системы, и вы хотите обеспечить их наглядным пособием для поиска фактов и данных о планетах. Таблица HTML была бы идеальным вариантом – вам необходимо взять необработанные данные, которые у вас есть, и превратить их в таблицу, следуя нижеприведенным инструкциям.

Готовая таблица должна выглядеть так:

Data about the planets of our solar system (Planetary facts taken from NASA's Planetary Fact Sheet - Metric)											
		Name	Mass (10 ²⁴ kg)	Diameter (km)	Density (kg/m ³)	Gravity (m/s ²)	Length of day (hours)	Distance from Sun (10 ⁶ km)	Mean temperature (°C)	Number of moons	Notes
Terrestrial planets		Mercury	0.330	4,879	5427	3.7	4222.6	57.9	167	0	Closest to the Sun
		Venus	4.87	12,104	5243	8.9	2802.0	108.2	464	0	
		Earth	5.97	12,756	5514	9.8	24.0	149.6	15	1	Our world
		Mars	0.642	6,792	3933	3.7	24.7	227.9	-65	2	The red planet
Jovian planets	Gas giants	Jupiter	1898	142,984	1326	23.1	9.9	778.6	-110	67	The largest planet
		Saturn	568	120,536	687	9.0	10.7	1433.5	-140	62	
	Ice giants	Uranus	86.8	51,118	1271	8.7	17.2	2872.5	-195	27	
		Neptune	102	49,528	1638	11.0	16.1	4495.1	-200	14	
Dwarf planets		Pluto	0.0146	2,370	2095	0.7	153.3	5906.4	-225	5	Declassified as a planet in 2006, but this remains controversial .

се данные, которые необходимы для выполнения задания, находятся в секции ниже.

Rows

Terrestrial planets

Mercury 0.330 4,879 5427 3.7 4222.6 57.9 167 0 Closest to the Sun

Venus 4.87 12,104 5243 8.9 2802.0 108.2 464 0

Earth 5.97 12,756 5514 9.8 24.0 149.6 15 1 Our world

Mars 0.642 6,792 3933 3.7 24.7 227.9 -65 2 The red planet

Jovian planets

Gas giants

Jupiter 1898 142,984 1326 23.1 9.9 778.6 -110 67 The largest planet

Saturn 568 120,536 687 9.0 10.7 1433.5 -140 62

Ice giants

Uranus 86.8 51,118 1271 8.7 17.2 2872.5 -195 27

Neptune 102 49,528 1638 11.0 16.1 4495.1 -200 14

Dwarf planets*

Pluto 0.0146 2,370 2095 0.7 153.3 5906.4 -225 5 Declassified as a planet in 2006, but this [remains controversial](http://www.usatoday.com/story/tech/2014/10/02/pluto-planet-solar-system/16578959/).

Columns

Name

Mass (10²⁴kg)

Diameter (km)

Density (kg/m³)

Gravity (m/s²)

Length of day (hours)

Distance from Sun (10⁶km)

Mean temperature (°C)

Number of moons

Notes

Caption

Data about the planets of our solar system (Planetary facts taken from <http://nssdc.gsfc.nasa.gov/planetary/factsheet/>>Nasa's Planetary Fact Sheet - Metric).

Во ходе изучения порядка выполнения работы (см. ниже) необходимо найти решения следующим подзадачам задания:

1. Создать новый проект сайта с названием *Planets* в соответствие со стандартной файловой структурой сайта.
2. В теле документа в файле *index.html* созданного проекта сайта создать таблицу с внешним контейнером, заголовком и телом таблицы. Нижний колонтитул (footer) не нужен для этого примера.
3. Добавить подпись к таблице ("Caption" в текстовой секции выше).
4. Добавить строку в заголовок таблицы, содержащую все заголовки столбцов ("Columns" в текстовой секции выше).
5. Создать все строки содержимого внутри тела таблицы, помня, что все заголовки строк должны быть *семантическими*.
6. Убедиться, что весь контент помещен в нужные ячейки – в исходных данных каждая строка данных о планете отображается рядом со связанной с ней планетой.
7. Добавить атрибуты, чтобы заголовки строк и столбцов были однозначно связаны со строками, столбцами или группами строк, для которых они выступают в качестве заголовков.
8. Добавить черную рамку вокруг столбца, который содержит все заголовки строк с именами планет.

Ход работы

Листинг:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Planets</title>
  <style>
```

```

table {
    width: 100%;
    border-collapse: collapse;
}
th, td {
    border: 1px solid black;
    padding: 8px;
    text-align: center;
}
th {
    background-color: #f2f2f2;
}
</style>

</head>
<body>

<div>
    <table>
        <caption>Data about the planets of our solar system (Planetary facts taken from <a
href="http://nssdc.gsfc.nasa.gov/planetary/factsheet/">Nasa's Planetary Fact Sheet -
Metric</a>).</caption>
        <thead>
            <tr>
                <th scope="col">Name</th>
                <th scope="col">Mass (10<sup>24</sup>kg)</th>
                <th scope="col">Diameter (km)</th>
                <th scope="col">Density (kg/m<sup>3</sup>)</th>
                <th scope="col">Gravity (m/s<sup>2</sup>)</th>
                <th scope="col">Length of day (hours)</th>
                <th scope="col">Distance from Sun (10<sup>6</sup>km)</th>
                <th scope="col">Mean temperature (°C)</th>
                <th scope="col">Number of moons</th>
                <th scope="col">Notes</th>
            </tr>
        </thead>
    </table>
</div>

```

```

</tr>
</thead>
<tbody>
  <!-- Terrestrial planets -->
  <tr>
    <th scope="row">Mercury</th>
    <td>0.330</td>
    <td>4,879</td>
    <td>5427</td>
    <td>3.7</td>
    <td>4222.6</td>
    <td>57.9</td>
    <td>167</td>
    <td>0</td>
    <td>Closest to the Sun</td>
  </tr>
  <tr>
    <th scope="row">Venus</th>
    <td>4.87</td>
    <td>12,104</td>
    <td>5243</td>
    <td>8.9</td>
    <td>2802.0</td>
    <td>108.2</td>
    <td>464</td>
    <td>0</td>
    <td></td>
  </tr>
  <tr>
    <th scope="row">Earth</th>
    <td>5.97</td>
    <td>12,756</td>
    <td>5514</td>
    <td>9.8</td>

```

```

        <td>24.0</td>
        <td>149.6</td>
        <td>15</td>
        <td>1</td>
        <td>Our world</td>
    </tr>
    <tr>
        <th scope="row">Mars</th>
        <td>0.642</td>
        <td>6,792</td>
        <td>3933</td>
        <td>3.7</td>
        <td>24.7</td>
        <td>227.9</td>
        <td>-65</td>
        <td>2</td>
        <td>The red planet</td>
    </tr>
    <!-- Jovian planets -->
    <tr>
        <th scope="row">Jupiter</th>
        <td>1898</td>
        <td>142,984</td>
        <td>1326</td>
        <td>23.1</td>
        <td>9.9</td>
        <td>778.6</td>
        <td>-110</td>
        <td>67</td>
        <td>The largest planet</td>
    </tr>
    <tr>
        <th scope="row">Saturn</th>
        <td>568</td>

```

	<td>120,536</td>	
	<td>687</td>	
	<td>9.0</td>	
	<td>10.7</td>	
	<td>1433.5</td>	
	<td>-140</td>	
	<td>62</td>	
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<!-- Ice giants -->

	<tr>	
	<th scope="row">Uranus</th>	
	<td>86.8</td>	
	<td>51,118</td>	
	<td>1271</td>	
	<td>8.7</td>	
	<td>17.2</td>	
	<td>2872.5</td>	
	<td>-195</td>	
	<td>27</td>	
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	<tr>	
	<th scope="row">Neptune</th>	
	<td>102</td>	
	<td>49,528</td>	
	<td>1638</td>	
	<td>11.0</td>	
	<td>16.1</td>	
	<td>4495.1</td>	
	<td>-200</td>	
	<td>14</td>	
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<!-- Dwarf planets -->

<tr>

  <th scope="row">Pluto</th>

  <td>0.0146</td>

  <td>2,370</td>

  <td>2095</td>

  <td>0.7</td>

  <td>153.3</td>

  <td>5906.4</td>

  <td>-225</td>

  <td>5</td>

  <td>Declassified as a planet in 2006, but this <a
href="http://www.usatoday.com/story/tech/2014/10/02/pluto-planet-solar-
system/16578959/">remains controversial</a>.</td>

</tr>

</tbody>

</table>

</div>

</body>

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Скрин работы:

Data about the planets of our solar system (Planetary facts taken from NASA's Planetary Fact Sheet - Metric)									
Name	Mass (10 ²⁴ kg)	Diameter (km)	Density (kg/m ³)	Gravity (m/s ²)	Length of day (hours)	Distance from Sun (10 ⁶ km)	Mean temperature (°C)	Number of moons	Notes
Mercury	0.330	4,879	5427	3.7	4222.6	57.9	167	0	Closest to the Sun
Venus	4.87	12,104	5243	8.9	2802.0	108.2	464	0	
Earth	5.97	12,756	5514	9.8	24.0	149.6	15	1	Our world
Mars	0.642	6,792	3933	3.7	24.7	227.9	-65	2	The red planet
Jupiter	1898	142,984	1326	23.1	9.9	778.6	-110	67	The largest planet
Saturn	568	120,536	687	9.0	10.7	1433.5	-140	62	
Uranus	86.8	51,118	1271	8.7	17.2	2872.5	-195	27	
Neptune	102	49,528	1638	11.0	16.1	4495.1	-200	14	
Pluto	0.0146	2,370	2095	0.7	153.3	5906.4	-225	5	Declassified as a planet in 2006, but this remains controversial .