```
 1 "use strict";
 2
 3 function clock() {
 4  let date = new Date(),
 5      hours = (date.getHours() < 10) ? "0" + date.getHours() : date.getHours(),
 6      minutes = (date.getMinutes() < 10) ? "0" + date.getMinutes() : date.getMinutes(),
 7      seconds = (date.getSeconds() < 10) ? "0" + date.getSeconds() : date.getSeconds();
 8  document.getElementById("clock").innerHTML = `${hours}:${minutes}:${seconds}`;
 9 }
10 setInterval(clock, 10000);
11 clock();
```

```
 1 "use strict";
 2
 3 document.addEventListener("DOMContentLoaded", () => {
 4     keyMapper(1000, "joke", function () {
 5         document.querySelectorAll("*").forEach((node) => node.classList.add("rotated"));
 6         const parent = document.getElementById("content");
 7         while (parent.firstChild) parent.firstChild.remove();
 8         const img = document.createElement("img");
 9         img.src = "resources/images/joker.jpg";
10         parent.appendChild(img);
11     });
12 });
13
14 function keyMapper(keystrokeDelay, keySequence, callback) {
15     let buffer = [];
16     let lastKeyTime = Date.now();
17     document.addEventListener("keydown", event => {
18         let charList = "abcdefghijklmnopqrstuvwxyz0123456789";
19         const key = event.key.toLowerCase();
20         if (charList.indexOf(key) === -1) return;
21         let currentTime = Date.now();
22         if (currentTime - lastKeyTime > 1000) buffer = [];
23         buffer.push(key);
24         lastKeyTime = currentTime;
25         if (buffer.join("") === keySequence) callback();
26     })
27 }
```

```
 1 "use strict";
 2
 3 const svg = document.getElementById("graph");
 4 const rect = document.getElementById("rect");
 5 const triangle = document.getElementById("triangle");
 6 const circle = document.getElementById("circle");
 7
 8 document.addEventListener("DOMContentLoaded", () => {
 9     svg.addEventListener("click", (event) => {
10         if (validateR()) {
11             let position = getMousePosition(svg, event);
12             x = position.x;
13             y = position.y;
14             target.style.visibility = "visible";
15             target.setAttribute("cx", `${x}`);
16             target.setAttribute("cy", `${y}`);
17             let k = 270 / r; //отношение радиуса и плоскости
18             x = (x / k).toFixed(1);
19             y = (y / k).toFixed(1);
20             if ((x <= 0 && y >= 0 && x >= -r && y <= r/2) || (x >= 0 && y >= 0 && y <= (x
   - r/2) * (-2)) ||
21                 (x >= 0 && y <= 0 && x * x + y * y <= Math.pow(r, 2))) target.
   setAttribute("fill", "green");
22             else target.setAttribute("fill", "red");
23             sendRequest([{name:"X-value", value:x}, {name:"Y-value", value:y}, {name:"R-
   value", value:r}]);
24             document.getElementById("outputContainer").remove();
25         }
26     });
27 });
28
29 function getMousePosition(svg, event) {
30     let rect = svg.getBoundingClientRect();
31     return {
32         x: event.clientX - rect.left,
33         y: event.clientY - rect.top
34     };
35 }
36
37 function redrawGraph() {
38     rect.setAttribute("width", `${r * 24}`);
39     rect.setAttribute("height", `${r * 12}`);
40     rect.setAttribute("x", `${150 - r * 24}`);
41     rect.setAttribute("y", `${150 - r * 12}`);
42     triangle.setAttribute("points", `150,150 150,${150 - 24 * r} ${150 + 12 * r},150`);
43     let k = (r !== 5) ? ((5 - r) * 12) : 0;
44     circle.setAttribute("d", `M 150 150 L ${150 + r * 24} 150 C ${150 + r * 24} ${210 - k
   } ${210 - k} ${150 + r * 24} 150 ${150 + r * 24} Z`);
45 }
```

```
 1  "use strict";
 2
 3  let x, y, r;
 4
 5  //Обновляет значение x в соответсвии с нажатой кнопкой, добавляет ей эффекты (подсветка и
    увеличение), убирая их для остальных кнопок группы.
 6  document.addEventListener("DOMContentLoaded", () => {
 7      let buttons = document.querySelectorAll("input[type=button]");
 8      buttons.forEach(click);
 9
10      function click(element) {
11          element.onclick = function () {
12              r = this.value;
13              buttons.forEach(function (element) {
14                  element.style.boxShadow = null;
15                  element.style.backgroundColor = null;
16                  element.style.color = null;
17              });
18              this.style.boxShadow = "0 0 40px 5px #f41c52";
19              this.style.backgroundColor = "#f41c52";
20              this.style.color = "white";
21              redrawGraph();
22          }
23      }
24  });
25
26  document.getElementById("checkButton").onclick = function () {
27      if (validateX() && validateY() && validateR()) {
28          sendRequest([{name:"X-value", value:x}, {name:"Y-value", value:y}, {name:"R-value
    ", value:r}]);
29          document.getElementById("outputContainer").remove();
30      }
31  };
32
33  function createNotification(message) {
34      let outputContainer = document.getElementById("outputContainer");
35      if (outputContainer.contains(document.querySelector(".notification"))) {
36          let stub = document.querySelector(".notification");
37          stub.textContent = message;
38          stub.classList.replace("outputStub", "errorStub");
39      } else {
40          let notificationTableRow = document.createElement("h4");
41          notificationTableRow.innerHTML = "<span class='notification errorStub'></span>";
42          outputContainer.prepend(notificationTableRow);
43          let span = document.querySelector(".notification");
44          span.textContent = message;
45      }
46  }
47
48  function validateX() {
49      if (isNumeric(x)) return true;
50      else createNotification("X не выбран");
51  }
52
53  //Позволяет получить значение x из нестандартного элемента p:oneSelectRadio
54  function reactToChangeXRadio(param) {
55      x = param;
56  }
57
58  function validateY() {
59      y = document.querySelector("#Y-input").value.replace(",", "."); //замена разделителя
    дробной части числа
60      if (y === undefined) {
61          createNotification("Y не введён");
62          return false;
63      } else if (!isNumeric(y)) {
64          createNotification("Y не число");
65          return false;
66      } else if (!((y > -5) && (y < 3))) {
67          createNotification("Y не входит в область допустимых значений");
68          return false;
69      } else return true;
70  }
```

```
71
72 function validateR() {
73     if (isNumeric(r)) return true;
74     else {
75         createNotification("R не выбран");
76         return false;
77     }
78 }
79
80 function isNumeric(n) {
81     return !isNaN(parseFloat(n)) && isFinite(n);
82 }
```

```css
 1 thead h3 {
 2     margin-top: 2%;
 3     margin-bottom: 1%;
 4 }
 5
 6 tfoot * {margin-top: 1%}
 7
 8 #mainTable {
 9     background-color: ghostwhite;
10     width: 1000px;
11 }
12
13 input, svg, #Y-input {
14     width: 100%;
15     border: 2px solid #f41c52;
16     border-radius: 20px;
17     background-color: white;
18 }
19
20 svg {
21     width: 300px;
22     height: 300px;
23     box-shadow: inset 0 0 7px 1px gray;
24 }
25
26 hr {
27     color: #f41c52;
28     width: 95%;
29 }
30
31 .notification {
32     color: white;
33     padding: 1%;
34 }
35
36 .outputStub {background-color: #000720}
37
38 .errorStub {background-color: #dc143b}
39
40 #resTab {
41     border: 1px solid #000720;
42     border-collapse: collapse;
43     margin: auto;
44     margin-bottom: 3%;
45     width: 90%;
46 }
47
48 #resTab th {
49     color: white;
50     background-color: #000720;
51 }
```

```css
 1  /* Взято и переработано с https://codepen.io/rauldronca/pen/mARYEm*/
 2
 3  #checkButton {
 4      text-align: center;
 5      text-transform: uppercase;
 6      cursor: pointer;
 7      letter-spacing: 2px;
 8      position: relative;
 9      background-color: #eb2a5a;
10      border: none;
11      color: white;
12      padding: 15px;
13      width: 150px;
14      transition-duration: 0.4s;
15      overflow: hidden;
16      box-shadow: 0 5px 15px #193047;
17      border-radius: 4px;
18  }
19
20  #checkButton:hover {
21      background: white;
22      box-shadow: 0 2px 10px 5px #eb2a5a;
23      color: black;
24  }
25
26  #checkButton::after {
27      content: "";
28      background: #eb2a5a;
29      display: block;
30      position: absolute;
31      padding-top: 300%;
32      padding-left: 350%;
33      margin-left: -20px !important;
34      margin-top: -120%;
35      opacity: 0;
36      transition: all 0.8s
37  }
38
39  #checkButton:active::after {
40      padding: 0;
41      margin: 0;
42      opacity: 1;
43      transition: 0s
44  }
45
46  #checkButton:focus {outline: 0}
```

```css
1  /* Взято и переработано с https://colorlib.com)*/
2
3  h2 {
4      font-size: 33px;
5      font-weight: 200;
6      text-transform: uppercase;
7      margin: 0;
8      letter-spacing: 3px;
9  }
```

```css
 1  @font-face {
 2      font-family: "Avenir Next Cyr";
 3      src: url("#{resource['fonts/AvenirNextCyr-Regular.ttf']}");
 4  }
 5
 6  * {
 7      font-family: "Avenir Next Cyr", Arial, sans-serif;
 8      text-align: center;
 9      font-weight: normal;
10  }
11
12  a {
13      color: #eb2a5a;
14      font-weight: 200;
15      border-radius: 2px;
16  }
17
18  a:hover {box-shadow: 0 0 40px 5px #f41c52}
19
20  body {background-color: whitesmoke}
21
22  #header {
23      font-size: 0.6em;
24      top: 0;
25  }
26
27  #footer {bottom: 0}
28
29  #header, #footer {
30      z-index: 10; /*чтобы header и footer всегда всегда были сверху*/
31      width: 100%;
32      position: fixed;
33      color: white;
34      background-color: #000720;
35      left: 0;
36  }
37
38  input, a {cursor: pointer}
39
40  #figure img {
41      width: 47px;
42      height: 55px;
43  }
44
45  #figure > span {
46      font-size: 0.8em;
47      display: block;
48  }
49
50  #figure {padding: 1.5%}
51
52  #credit {margin: auto}
53
54  #credit img {
55      width: 40px;
56      height: 40px;
57  }
58
59  #credit a {
60      font-size: 15px;
61      text-decoration: none;
62      color: white;
63  }
64
65  #content {
66      position: absolute;
67      top: 50%;
68      left: 50%;
69      margin-right: -50%;
70      transform: translate(-50%, -50%);
71  }
72
73  .shaded {box-shadow: 0 0 10px 1px black}
```

```css
74
75 .shaded:hover, .animated:hover {transition: 0.5s}
76
77 .shaded:hover {box-shadow: 0 0 20px 2px black}
78
79 .animated:hover {transform: scale(1.05)}
80
81 .illuminated:hover, .illuminated:focus {
82     box-shadow: 0 0 40px 5px #f41c52;
83     outline: none; /*убирает рамку фокуса в chrome*/
84 }
85
86 .rotated {
87     animation: rotation 5s infinite linear;
88     background: rgb(2,0,36);
89     background: radial-gradient(circle, rgba(2,0,36,1) 11%, rgba(115,2,9,1) 74%, rgba(
138,3,3,1) 83%, rgba(138,3,3,1) 96%);
90 }
91
92 #content h1 {
93     font-size: 8em;
94     margin: 0;
95     background: linear-gradient(130deg, #2a48eb, #ff0018);
96     color: transparent;
97     background-clip: text;
98     text-transform: uppercase;
99 }
100
101 @-webkit-keyframes rotation {
102     from {
103         -webkit-transform: rotate(0deg);
104     }
105     to {
106         -webkit-transform: rotate(360deg);
107     }
108 }
```

```xhtml
 1 <?xml version="1.0" encoding="UTF-8"?>
 2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 3        "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
 4 <html xmlns="http://www.w3.org/1999/xhtml"
 5       xmlns:h="http://xmlns.jcp.org/jsf/html"
 6       xmlns:ui="http://xmlns.jcp.org/jsf/facelets"
 7       xmlns:f="http://xmlns.jcp.org/jsf/core">
 8
 9 <f:view>
10     <h:head>
11         <meta name="author" content="Кульбако Артемий Юрьевич"/>
12         <meta name="keywords" content="ВТ, Лабораторная работа, Веб-программирование,
   Институт Тёплых Мужскин Отношений"/>
13         <h:outputStylesheet library="stylesheets" name="temp_layout_page.css"/>
14         <link rel="icon" type="image/jpg" href="#{resource['images/favicon.jpg']}"/>
15         <ui:insert name="head">
16             Побочные meta-теги
17         </ui:insert>
18     </h:head>
19
20     <h:body>
21         <div id="header" class="shaded animated">
22             <h1>Веб-программирование, Лаб. 3, Вариант 13213</h1>
23             <table id="credit">
24                 <tbody><tr>
25                     <td><h:graphicImage library="images" name="avatar.png" align="middle"
   alt="Аватар разработчика"/></td>
26                     <td><a href="https://github.com/testpassword" title="Перейти к
   профилю Github разработчика">Кульбако Артемий Юрьевич, P3212</a></td>
27                 </tr></tbody>
28             </table>
29         </div>
30
31         <div id="content">
32             <ui:insert name="content">
33                 Содержимое страницы
34             </ui:insert>
35         </div>
36
37         <div id="footer" class="shaded animated">
38             <div id="figure">
39                 <a href="https://se.ifmo.ru">
40                     <h:graphicImage title="Перейти на сайт кафедры вычислительной техники
   НИУ ИТМО" class="illuminated"
41                                         library="images" name="pulpit_logo.png"/>
42                 </a>
43                 <span>2019</span>
44             </div>
45         </div>
46         <h:outputScript library="js" name="easter_eggs.js"/>
47     </h:body>
48 </f:view>
49
50 </html>
```

```xml
 1 <?xml version='1.0' encoding='UTF-8'?>
 2 <faces-config version="2.2" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
 3     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 4     xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
 5     http://xmlns.jcp.org/xml/ns/javaee/web-facesconfig_2_2.xsd">
 6
 7     <managed-bean>
 8         <managed-bean-name>realHuman</managed-bean-name>
 9         <managed-bean-class>RealHumanBean</managed-bean-class>
10         <managed-bean-scope>session</managed-bean-scope>
11     </managed-bean>
12 </faces-config>
```

```xml
 1 <?xml version="1.0" encoding="UTF-8"?>
 2 <web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"
 3          xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 4          xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee http://xmlns.jcp.org/xml/
    ns/javaee/web-app_3_1.xsd"
 5          version="3.1">
 6     <welcome-file-list>
 7         <welcome-file>index.xhtml</welcome-file>
 8     </welcome-file-list>
 9     <servlet>
10         <servlet-name>Faces Servlet</servlet-name>
11         <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
12         <load-on-startup>1</load-on-startup>
13     </servlet>
14     <servlet-mapping>
15         <servlet-name>Faces Servlet</servlet-name>
16         <url-pattern>*.xhtml</url-pattern>
17     </servlet-mapping>
18     <error-page>
19         <error-code>404</error-code>
20         <location>/error_page.xhtml</location>
21     </error-page>
22 </web-app>
```

```
 1  <?xml version="1.0" encoding="UTF-8"?>
 2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 3          "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
 4  <html xmlns="http://www.w3.org/1999/xhtml"
 5        xmlns:h="http://xmlns.jcp.org/jsf/html"
 6        xmlns:p="http://primefaces.org/ui"
 7        xmlns:ui="http://xmlns.jcp.org/jsf/facelets"
 8        xmlns:f="http://xmlns.jcp.org/jsf/core">
 9
10  <ui:composition template="templates/temp_layout.xhtml">
11
12      <ui:define name="head">
13          <title>Лабораторная №3 - график</title>
14          <meta name="description" content="Лабораторная работа №3 по дисциплине веб-
    программирование - график"/>
15          <h:outputStylesheet library="stylesheets" name="app_page.css"/>
16          <h:outputStylesheet library="stylesheets" name="check_button.css"/>
17      </ui:define>
18
19      <ui:define name="content">
20              <table id="mainTable" class="shaded">
21                  <thead>
22                  <tr><td colspan="7"><h3>Валидация введённых значений:</h3></td></tr>
23                  </thead>
24                  <tbody>
25                  <h:form id="form" prependId="false">
26                  <tr><td colspan="7"><hr/></td></tr>
27                  <tr>
28                      <td>Выберите X:</td>
29                      <td colspan="5">
30                          <p:selectOneRadio layout="grid" columns="3" onchange="
    reactToChangeXRadio(this.value)">
31                              <f:selectItem itemLabel="-5" itemValue="-5"/>
32                              <f:selectItem itemLabel="-4" itemValue="-4"/>
33                              <f:selectItem itemLabel="-3" itemValue="-3"/>
34                              <f:selectItem itemLabel="-2" itemValue="-2"/>
35                              <f:selectItem itemLabel="-1" itemValue="-1"/>
36                              <f:selectItem itemLabel="0" itemValue="0"/>
37                              <f:selectItem itemLabel="1" itemValue="1"/>
38                              <f:selectItem itemLabel="2" itemValue="2"/>
39                              <f:selectItem itemLabel="3" itemValue="3"/>
40                              <f:selectItem itemLabel="4" itemValue="4"/>
41                              <f:selectItem itemLabel="5" itemValue="5"/>
42                          </p:selectOneRadio>
43                      </td>
44                      <td rowspan="2">
45                          <svg id="graph" xmlns="http://www.w3.org/2000/svg">
46                              <line x1="0" y1="150" x2="300" y2="150" stroke="#000720"/>
47                              <line x1="150" y1="0" x2="150" y2="300" stroke="#000720"/>
48                              <polygon points="300,150 295,155 295, 145" fill="#000720"
    stroke="#000720"/>
49                              <polygon points="150,0 145,5 155,5" fill="#000720" stroke="#
    000720"/>
50                              <rect id="rect" x="30" y="90" width="120" height="60" fill-
    opacity="0.4" stroke="navy" fill="blue"/>
51                              <polygon id="triangle" points="150,150 150,30 210,150" fill-
    opacity="0.4" stroke="navy" fill="blue"/>
52                              <path id="circle" d="M 150 150 L 270 150 C 270 210 210 270
    150 270 Z" fill-opacity="0.4" stroke="navy" fill="blue"/>
53                              <circle id="target" r="5" cx="0" cy="0" fill-opacity="0.7"
    fill="red" visibility="hidden"/>
54                          </svg>
55                      </td>
56                  </tr>
57                  <tr>
58                      <td>Введите Y:</td>
59                      <td colspan="5"><input id="Y-input" class="illuminated animated" type
    ="text" placeholder="значение в промежутке (-5 до 3)" maxlength="6"/></td>
60                  </tr>
61                  <tr>
62                      <td>Выберите R:</td>
63                      <td><h:commandButton type="button" styleClass="illuminated animated
    commandButtonsGroup" value="1"/></td>
```

```
64                              <td><h:commandButton type="button" styleClass="illuminated animated
    commandButtonsGroup" value="2"/></td>
65                              <td><h:commandButton type="button" styleClass="illuminated animated
    commandButtonsGroup" value="3"/></td>
66                              <td><h:commandButton type="button" styleClass="illuminated animated
    commandButtonsGroup" value="4"/></td>
67                              <td><h:commandButton type="button" styleClass="illuminated animated
    commandButtonsGroup" value="5"/></td>
68                              <td><h:link value="Вернуться на домашнюю страницу" outcome="index.
    xhtml"/></td>
69                      </tr>
70                      <tr>
71                          <td colspan="7">
72                              <p:remoteCommand name="sendRequest" update="resTab" action="#{
    realHuman.validate}"/>
73                              <button id="checkButton" type="button">Проверить</button>
74                              <hr/>
75                          </td>
76                      </tr>
77                  </h:form>
78                  </tbody>
79                  <tfoot>
80                  <tr id="outputContainer"><td colspan="7"><h4><span class="outputStub
    notification">Результаты отсутствуют</span></h4></td></tr>
81                      <tr>
82                          <td colspan="7">
83                              <h:dataTable value="#{realHuman.points}" var="p" id="resTab"
    >
84                                  <h:column>
85                                      <f:facet name="header">x</f:facet>
86                                      #{p.x}
87                                  </h:column>
88                                  <h:column>
89                                      <f:facet name="header">y</f:facet>
90                                      #{p.y}
91                                  </h:column>
92                                  <h:column>
93                                      <f:facet name="header">r</f:facet>
94                                      #{p.r}
95                                  </h:column>
96                                  <h:column>
97                                      <f:facet name="header">Точка входит в ОДЗ</f:facet>
98                                      #{p.coordsStatus}
99                                  </h:column>
100                                 <h:column>
101                                     <f:facet name="header">Дата запроса</f:facet>
102                                     #{p.bornDate}
103                                 </h:column>
104                             </h:dataTable>
105                         </td>
106                     </tr>
107                 </tfoot>
108             </table>
109         <h:outputScript library="js" name="validator.js"/>
110         <h:outputScript library="js" name="graph_drawer.js"/>
111     </ui:define>
112
113 </ui:composition>
114
115 </html>
```

```
 1 <?xml version="1.0" encoding="UTF-8"?>
 2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 3         "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
 4 <html xmlns="http://www.w3.org/1999/xhtml"
 5       xmlns:h="http://xmlns.jcp.org/jsf/html"
 6       xmlns:ui="http://xmlns.jcp.org/jsf/facelets"
 7       xmlns:f="http://xmlns.jcp.org/jsf/core">
 8
 9 <ui:composition template="templates/temp_layout.xhtml">
10
11     <ui:define name="head">
12         <title>Лабораторная №3 - ошибка клиента</title>
13         <meta name="description" content="Лабораторная работа №3 по дисциплине веб-
    программирование - ошибка клиента"/>
14         <h:outputStylesheet library="stylesheets" name="error_page.css"/>
15     </ui:define>
16
17     <ui:define name="content">
18         <h1 id="404">404</h1>
19         <h2>Ничего не найдено</h2>
20         <p>Страница, которую вы запрашиваете, отсутствует, проверьте url-адрес.<br/>
21             <a href="index.xhtml">Вернуться на домашнюю страницу</a>
22         </p>
23     </ui:define>
24
25 </ui:composition>
26
27 </html>
```

```
 1 <?xml version="1.0" encoding="UTF-8"?>
 2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 3         "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
 4 <html xmlns="http://www.w3.org/1999/xhtml"
 5       xmlns:h="http://xmlns.jcp.org/jsf/html"
 6       xmlns:ui="http://xmlns.jcp.org/jsf/facelets"
 7       xmlns:f="http://xmlns.jcp.org/jsf/core">
 8
 9 <ui:composition template="templates/temp_layout.xhtml">
10
11    <ui:define name="head">
12        <title>Лабораторная №3 - часы</title>
13        <meta name="description" content="Лабораторная работа №3 по дисциплине веб-
    программирование - страница с часами"/>
14    </ui:define>
15
16    <ui:define name="content">
17        <h1 id="clock">Часы</h1>
18        <a href="app.xhtml">Перейти на страницу валидации значений</a>
19        <h:outputScript library="js" name="clock.js"/>
20    </ui:define>
21
22 </ui:composition>
23
24 </html>
```