САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ, МЕХАНИКИ И ОПТИКИ

Факультет Программной Инженерии и Компьютерной Техники

Лабораторная работа №5
по дисциплине
"Технологии программирования"

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Код серверной части

```python
#!/usr/bin/python3

import flask
import random
import requests
import re
from flask import Flask
from bs4 import BeautifulSoup

VARIANTS_IN_QUESTION = 3

with open("guess.txt", "r") as names_file:
    names = [n.strip() for n in names_file.readlines()]

app = Flask(__name__)


def get_url_for_name(name):
    query = '%2B'.join(name.split())
    url = "https://www.google.ru/search?q=" + query + "&source=lnms&tbm=isch"
    print("get_url_for_name: searching image in google, url = ", url)
    resp = requests.get(url)
    print("get_url_for_name: code = ", resp.status_code, "result is empty: ", len(resp.text) ==
0)
    soup = BeautifulSoup(resp.text, 'html.parser')
    images = [a['src'] for a in soup.find_all("img", {"src": re.compile('gstatic.com')})]
    if len(images) == 0:
        raise ValueError("images not found in response")
    return images[random.randint(0, max(len(images), 20) - 1)]


def get_params_for_difficulty(difficulty):
    if difficulty == 0:
        end = 10
    elif difficulty == 1:
        end = int(len(names) / 2)
    else:
        end = len(names)

    print("randomize in range [0; ", end, ") name of ", len(names), " names")

    name_variants = random.sample(names[:end - 1], VARIANTS_IN_QUESTION)
    right_variant = name_variants[0]
    random.shuffle(name_variants)
    right_variant_index = name_variants.index(right_variant)

    return (get_url_for_name(right_variant),
            name_variants,
            right_variant_index)


@app.route('/game')
def game():
    difficulty = int(flask.request.args.get("diff"))
    (image_url, variants, right_var) = get_params_for_difficulty(difficulty)
    return flask.render_template("game.html", image_url=image_url, variants=variants,
right_var=right_var)


@app.route('/')
def main():
    return flask.render_template('main.html')
```

Код html-файлов

Экран выбора уровня сложности

```html
<!DOCTYPE html>
<html lang="ru">
<head>
    <meta charset="UTF-8">
    <title>Выберите сложность</title>
</head>
<body>
<h1>Выберите сложность:</h1>
<a href="./game?diff=0">Просто</a>
<a href="./game?diff=1">Средне</a>
<a href="./game?diff=2">Сложно</a>
</body>
</html>
```

Экран игры

```html
<!DOCTYPE html>
<html lang="ru">
<head>
    <meta charset="UTF-8">
    <title>Игра</title>
</head>
<body>

<style>
    .variant_item {
        color: blue;
        cursor: pointer;
    }

    .variant_list {
        list-style-type: none;
    }
</style>

<script type="text/javascript">
    function onVarClicked(varNumber) {
        if (varNumber === {{ right_var }} ) {
            document.getElementById("success").style.visibility = 'visible';
            document.getElementById("fail").style.visibility = 'hidden';
        } else {
            document.getElementById("fail").style.visibility = 'visible';
            document.getElementById("success").style.visibility = 'hidden';
        }
    }
</script>

<img src="{{image_url}}" width="300"/>
<div>
    <h1>Выберите ответ:</h1>
    <ul class="variant_list">
        <li>            <a class="variant_item" onclick="onVarClicked(0)"> {{ variants[0] }}
</a>
        </li>
        <li>            <a class="variant_item" onclick="onVarClicked(1)"> {{ variants[1] }} </a>
        </li>
        <li><a class="variant_item" onclick="onVarClicked(2)"> {{ variants[2] }} </a>
        </li>
    </ul>
</div>
<div id="success" style="visibility: hidden; color: green">Верно</div>
<div id="fail" style="visibility: hidden; color: red">Неверно</div>

<a href="..">Вернуться на главную</a>
</body>
</html>
```