

Санкт-Петербургский национально исследовательский университет
информационных технологий, механики и оптики
Факультет программной инженерии и компьютерной техники



Исследование языков разметки документов

Лабораторная работа №3

Вариант №1

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2020

Задание

Исходный формат: YAML

Результирующий формат: JSON

День недели: Понедельник

Выполнение

Исходный файл на языке YAML:

Monday:

Timetable:

Pair №1:

Time: "08:20-09:50"

Week: "odd week"

Aud: "431B AUD."

Building: "Kronverksky pr., 49, letter A"

Subject: "PROGRAMMING (LAB)"

Teacher: "Pertsev Timofey Sergeevich"

Class format: "Full-time - distance"

Pair №2:

Time: "10:00-11:30"

Week: "odd week"

Aud: "431B AUD."

Building: "Kronverksky pr., 49, letter A"

Subject: "PROGRAMMING (LAB)"

Teacher: "Pertsev Timofey Sergeevich"

Class format: "Full-time - distance"

Pair №1:

Time: "11:40-13:10"

Week: "even week"

Aud: "101 AUD."

Building: "Kronverksky pr., 49, letter A"

Subject: "FOUNDATIONS OF PROFESSIONAL ACTIVITY (LAB)"

Teacher: "Nikolaev Vladimir Vyacheslavovich"

Class format: "Full-time - distance"

Pair №3:

Time: "11:40-13:10"
Week: "odd week"
Aud: "305 AUD."
Building: "Kronverksky pr., 49, letter A"
Subject: "INFORMATICS (LAB)"
Teacher: "Malysheva Tatyana Alekseevna"
Class format: "Full-time - distance"

Pair №2:

Time: "13:30-15:00"
Week: "even week"
Aud: "101 AUD."
Building: "Kronverksky pr., 49, letter A"
Subject: "FOUNDATIONS OF PROFESSIONAL ACTIVITY (LAB)"
Teacher: "Gavrilov Anton Valerievich"
Class format: "Full-time - distance"

Pair №4:

Time: "13:30-15:00"
Week: "odd week"
Aud: "305 AUD."
Building: "Kronverksky pr., 49, letter A"
Subject: "INFORMATICS (LAB)"
Teacher: "Malysheva Tatyana Alekseevna"
Class format: "Full-time - distance"

Pair №3:

Time: "15:20-16:50"
Week: "even week"
Aud: "369A AUD."
Building: "Kronverksky pr., 49, letter A"
Subject: "DISCRETE MATHEMATICS (PRAK)"
Teacher: "Polyakov Vladimir Ivanovich"
Class format: "Full-time - distance"

Pair №4:

Time: "17:00-18:30"
Week: "even week"
Aud: "369A AUD."
Building: "Kronverksky pr., 49, letter A"
Subject: "DISCRETE MATHEMATICS (PRAK)"
Teacher: "Polyakov Vladimir Ivanovich"
Class format: "Full-time - distance"

Программа:

```
inputfile = open('input.yml', 'r')
outputfile = open('output.json', 'w')
a = list()
b = list()
c = list()
d = list()
a = inputfile.read().split('\n')
b.append('{')
for i in range(0, len(a)):
    if (a[i].find(":") == len(a[i])-1):
        ol = a[i].replace(a[i].rstrip(), '"' + a[i].rstrip())
        ol = ' ' + ol[:ol.find(':')] + '"' + ol[ol.find(':'):] + " {"
    else:
        ol = a[i].replace(a[i].rstrip(), '"' + a[i].rstrip())
        ol = ' ' + ol[:ol.find(':')] + '"' + ol[ol.find(':'):]
    b.append(ol)
c.append('{')
for i in range(0, len(b)-1):
    if (len(b[i]) - len(b[i].rstrip())) <= (len(b[i + 1]) - len(b[i + 1].rstrip())):
        c.append(b[i + 1])
    else:
        c.append((len(b[i + 1]) - len(b[i + 1].rstrip())) * ' ' + '},')
        c.append(b[i + 1])
c.append('}')
for i in range(0, len(c)-1):
    if (c[i].find(",") != len(c[i]) - 1) and (c[i].find("{") != len(c[i]) - 1) and (c[i + 1].count('}') == 0):
        ol = c[i] + ','
    else:
        ol=c[i]
    d.append(ol)
d.append('}')
d.append('}')
d.append('}')
d.append('}')
for i in range(0, len(d)):
    outputfile.write(d[i]+'\\n')
```

Результат:

```
{
  "Monday": {
    "Timetable": {
      "Pair №1": {
        "Time": "08:20-09:50",
        "Week": "odd week",
        "Aud": "431B AUD.",
        "Building": "Kronverksky pr., 49, letter A",
        "Subject": "PROGRAMMING (LAB)",
        "Teacher": "Pertsev Timofey Sergeevich",
        "Class format": "Full-time - distance"
      },
      "Pair №2": {
        "Time": "10:00-11:30",
        "Week": "odd week",
        "Aud": "431B AUD.",
        "Building": "Kronverksky pr., 49, letter A",
        "Subject": "PROGRAMMING (LAB)",
        "Teacher": "Pertsev Timofey Sergeevich",
        "Class format": "Full-time - distance"
      },
      "Pair №1": {
        "Time": "11:40-13:10",
        "Week": "even week",
        "Aud": "101 AUD.",
        "Building": "Kronverksky pr., 49, letter A",
        "Subject": "FOUNDATIONS OF PROFESSIONAL ACTIVITY (LAB)",
        "Teacher": "Nikolaev Vladimir Vyacheslavovich",
        "Class format": "Full-time - distance"
      },
      "Pair №3": {
        "Time": "11:40-13:10",
        "Week": "odd week",
        "Aud": "305 AUD.",
        "Building": "Kronverksky pr., 49, letter A",
        "Subject": "INFORMATICS (LAB)",
        "Teacher": "Malysheva Tatyana Alekseevna",
        "Class format": "Full-time - distance"
      },
      "Pair №2": {
        "Time": "13:30-15:00",
        "Week": "even week",
        "Aud": "101 AUD.",
        "Building": "Kronverksky pr., 49, letter A",
        "Subject": "FOUNDATIONS OF PROFESSIONAL ACTIVITY (LAB)",
        "Teacher": "Gavrilov Anton Valerievich",
        "Class format": "Full-time - distance"
      }
    }
  }
}
```

```

    },
    "Pair №4": {
      "Time": "13:30-15:00",
      "Week": "odd week",
      "Aud": "305 AUD.",
      "Building": "Kronverksky pr., 49, letter A",
      "Subject": "INFORMATICS (LAB)",
      "Teacher": "Malysheva Tatyana Alekseevna",
      "Class format": "Full-time - distance"
    },
    "Pair №3": {
      "Time": "15:20-16:50",
      "Week": "even week",
      "Aud": "369A AUD.",
      "Building": "Kronverksky pr., 49, letter A",
      "Subject": "DISCRETE MATHEMATICS (PRAK)",
      "Teacher": "Polyakov Vladimir Ivanovich",
      "Class format": "Full-time - distance"
    },
    "Pair №4": {
      "Time": "17:00-18:30",
      "Week": "even week",
      "Aud": "369A AUD.",
      "Building": "Kronverksky pr., 49, letter A",
      "Subject": "DISCRETE MATHEMATICS (PRAK)",
      "Teacher": "Polyakov Vladimir Ivanovich",
      "Class format": "Full-time - distance"
    }
  }
}

```

Вывод:

В процессе выполнения лабораторной работы я изучил особенности языков разметки YAML и JSON, приобрел навык изменения строк в Python.