

Semestrální práce 4IZ238

Tréninkové plány

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Úvod

Tento XML dokument obsahuje popis semestrální práce z předmětu 4IZ238. Cílem bylo vytvořit tyto dané dokumenty: XML dokument, Schémy XML (XML schema, Schematron), transformace do HTML a PDF (pomocí XSLT) a DocBook.

Chapter 1. XML dokument

Popis elementů a struktura XML dokumentu `treninkovyPlan.xml`.

Popis elementů XML dokumentu

V tabulce jsou jednotlivé elementy a jejich popisy.

Table 1.1. Tabulka XML elementů

Název	Popis
trainingPlan	kořenový element XML dokumentu
person	element, který obsahuje atribut oid (id osoby) a podelementy, které popisují daného člověka
forename	křestní jméno dané osoby
surname	příjmení dané osoby
age	věk osoby
height	výška osoby
weight	váha osoby
goal	cíl osoby, čeho chce dosáhnout
profession	zaměstnání osoby
frequencyInAWeek	kolikrát daná osoba chodí cvičit
givenPlan	přiřazený plán pro danou osobu
name	název plánu, cvičení
plan	element, který obsahuje atribut pid (id plánu) a podelementy, které popisují daný plán
start	počátek daného plánu
end	konec daného plánu
day	element, který obsahuje atribut date (datum v daném plánu) a podelementy, které popisují daný den
training	element, který obsahuje atribut split(split v daném dni) a podelementy, které popisují daný split
exercise	element, který obsahuje atribut cid (id daného cviku) a podelementy, které popisují daný cvik
exercisePhoto	element s atributem src obsahující fotku cvičení
muscles	svaly, které budou vytíženy
musclesPhoto	element s atributem src obsahující fotku vytížených svalů
warmUp	rozehřívací část
topSet	maximální váha, kterou daná osobou je schopna zdvihnout
backOffSet	60% váhy z top set části
series	počet sérií
reps	počet opakování
cardio	element, který obsahuje podelementy, které popisují daný cardio cvik
period	časová délka cardio cviku
speed	rychlost cardio cviku

Název	Popis
incline	sklon cardio cviku
summary	element, který shrne celý split s cardiem a obsahuje podelementy, které popisují dané shrnutí
estimatedTime	předpokládaný čas dokončení daného tréninku
quantity	počet cvičení
primaryMuscle	svaly, které byly nejvíce vytíženy
muscleTargetedPhoto	element s atributem src obsahující fotku nejvíce vytížených svalů

Ukázkový XML

Ukázkový dokument zobrazující jednu osobu a první 4 dny jednoho konkrétního plánu z tréninkových plánů.

Example 1.1. Plán Le Mans

```
<person oid="1">
  <forename>Kevin</forename>
  <surname>Nguyen</surname>
  <age>20</age>
  <height>176</height>
  <weight>82</weight>
  <goal>lower body and maintain muscle mass</goal>
  <profession>student</profession>
  <frequencyInAWeek>6</frequencyInAWeek>
  <experience>1</experience>
  <givenPlan>
    <name>Le Mans</name>
  </givenPlan>
</person>
<plan pid="1">
  <name>Le Mans</name>
  <start>2024-04-29</start>
  <end>2024-05-05</end>
  <day date="2024-04-29">
    <training split="push">
      <exercise cid="1">
        <name>Cable Lateral Raise</name>
        <exercisePhoto src="exercises/cable_lateral_raise.png"/>
        <muscles>Lateral Deltoid</muscles>
        <musclesPhoto src="muscles/cable_lateral_raise.png"/>
        <warmUp>
          <series>2</series>
          <reps>10</reps>
        </warmUp>
        <topSet>
          <series>1</series>
          <reps>10</reps>
        </topSet>
        <backOffset>
          <series>1</series>
          <reps>10</reps>
        </backOffset>
      </exercise>
    </training>
  </day>
</plan>
```



```
</exercise>
<exercise cid="2">
  <name>Dumbbell Shoulder Press</name>
  <exercisePhoto src="exercises/dumbbell_shoulder_press.png"/>
  <muscles>Front Deltoid</muscles>
  <musclesPhoto src="muscles/dumbbell_shoulder_press.png"/>
  <warmUp>
    <series>1</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="3">
  <name>Dumbbell Rear Delt Fly</name>
  <exercisePhoto src="exercises/dumbbell_rear_delt_fly.png"/>
  <muscles>Rear Deltoid</muscles>
  <musclesPhoto src="muscles/dumbbell_rear_delt_fly.png"/>
  <warmUp>
    <series>1</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="4">
  <name>Smith Machine Incline Bench Press</name>
  <exercisePhoto src="exercises/smith_machine_incline_bench_press.png"/>
  <muscles>Upper Chest</muscles>
  <musclesPhoto src="muscles/smith_machine_incline_bench_press.png"/>
  <warmUp>
    <series>3</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="5">
  <name>Dumbbell Bench Press</name>
  <exercisePhoto src="exercises/dumbbell_bench_press.png"/>
```

```
<muscles>Chest</muscles>
<musclesPhoto src="muscles/dumbbell_bench_press.png"/>
<warmUp>
  <series>1</series>
  <reps>10</reps>
</warmUp>
<topSet>
  <series>1</series>
  <reps>10</reps>
</topSet>
<backOffset>
  <series>1</series>
  <reps>10</reps>
</backOffset>
</exercise>
<exercise cid="6">
  <name>Cable Chest Fly</name>
  <exercisePhoto src="exercises/cable_chest_fly.png"/>
  <muscles>Chest</muscles>
  <musclesPhoto src="muscles/cable_chest_fly.png"/>
  <warmUp>
    <series>1</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="7">
  <name>Tricep Pushdown</name>
  <exercisePhoto src="exercises/tricep_pushdown.png"/>
  <muscles>Triceps</muscles>
  <musclesPhoto src="muscles/tricep_pushdown.png"/>
  <warmUp>
    <series>2</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="8">
  <name>Overhead Tricep Extension Machine</name>
  <exercisePhoto src="exercises/overhead_tricep_extension_mach">
  <muscles>Triceps</muscles>
  <musclesPhoto src="muscles/overhead_tricep_extension_machin">
  <warmUp>
    <series>2</series>
```

```
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<cardio>
    <name>Treadmill Incline Walking</name>
    <exercisePhoto src="exercises/treadmill_incline_walking.png" />
    <period>20</period>
    <speed>5.5</speed>
    <incline>10</incline>
</cardio>
<summary>
    <estimatedTime>2</estimatedTime>
    <quantity>8</quantity>
    <primaryMuscle>Lateral Deltoid</primaryMuscle>
    <primaryMuscle>Front Deltoid</primaryMuscle>
    <primaryMuscle>Rear Deltoid</primaryMuscle>
    <primaryMuscle>Upper Chest</primaryMuscle>
    <primaryMuscle>Chest</primaryMuscle>
    <primaryMuscle>Triceps</primaryMuscle>
    <musclesTargetedPhoto src="muscles/split_push.png" />
</summary>
</training>
</day>
<day date="2024-04-30">
    <training split="pull">
        <exercise cid="9">
            <name>Lat Pulldown Machine</name>
            <exercisePhoto src="exercises/lat_pulldown_machine.png" />
            <muscles>Lats</muscles>
            <musclesPhoto src="muscles/lat_pulldown_machine.png" />
            <warmUp>
                <series>2</series>
                <reps>10</reps>
            </warmUp>
            <topSet>
                <series>1</series>
                <reps>10</reps>
            </topSet>
            <backOffset>
                <series>1</series>
                <reps>10</reps>
            </backOffset>
        </exercise>
        <exercise cid="10">
            <name>Barbell Row</name>
            <exercisePhoto src="exercises/barbell_row.png" />
            <muscles>Lats, Trapezius</muscles>
            <musclesPhoto src="muscles/barbell_row.png" />
            <warmUp>
                <series>1</series>
```

```
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<exercise cid="11">
    <name>Seated Row Machine</name>
    <exercisePhoto src="exercises/seated_row_machine.png"/>
    <muscles>Lats</muscles>
    <musclesPhoto src="muscles/seated_row_machine.png"/>
    <warmUp>
        <series>1</series>
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<exercise cid="12">
    <name>Cable Face Pull</name>
    <exercisePhoto src="exercises/cable_face_pull.png"/>
    <muscles>Upper Back, Rear Deltoid, Trapezius</muscles>
    <musclesPhoto src="muscles/cable_face_pull.png"/>
    <warmUp>
        <series>1</series>
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<exercise cid="13">
    <name>Preacher Curl Machine</name>
    <exercisePhoto src="exercises/preacher_curl_machine.png"/>
    <muscles>Biceps</muscles>
    <musclesPhoto src="muscles/preacher_curl_machine.png"/>
    <warmUp>
        <series>2</series>
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
```

```
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<exercise cid="14">
    <name>Hammer Curl</name>
    <exercisePhoto src="exercises/hammer_curl.png"/>
    <muscles>Brachioradialis, forearmrs</muscles>
    <musclesPhoto src="muscles/hammer_curl.png"/>
    <warmUp>
        <series>1</series>
        <reps>10</reps>
    </warmUp>
    <topSet>
        <series>1</series>
        <reps>10</reps>
    </topSet>
    <backOffset>
        <series>1</series>
        <reps>10</reps>
    </backOffset>
</exercise>
<cardio>
    <name>Treadmill Inclice Walking</name>
    <exercisePhoto src="exercises/treadmill_incline_walking.png"/>
    <period>20</period>
    <speed>5.5</speed>
    <incline>10</incline>
</cardio>
<summary>
    <estimatedTime>1.5</estimatedTime>
    <quantity>6</quantity>
    <primaryMuscle>Lats</primaryMuscle>
    <primaryMuscle>Trapezius</primaryMuscle>
    <primaryMuscle>Rear Deltoid</primaryMuscle>
    <primaryMuscle>Biceps</primaryMuscle>
    <musclesTargetedPhoto src="muscles/split_pull.png"/>
</summary>
</training>
</day>
<day date="2024-05-01">
    <training split="legs">
        <exercise cid="15">
            <name>Barbell Squat</name>
            <exercisePhoto src="exercises/barbell_squat.png"/>
            <muscles>Quads</muscles>
            <musclesPhoto src="muscles/barbell_squat.png"/>
            <warmUp>
                <series>3</series>
                <reps>10</reps>
            </warmUp>
            <topSet>
                <series>1</series>
                <reps>10</reps>
            </topSet>
```

```
<backOffset>
  <series>1</series>
  <reps>10</reps>
</backOffset>
</exercise>
<exercise cid="16">
  <name>Seated Legs Extension Machine</name>
  <exercisePhoto src="exercises/seated_legs_extension_machine.png"/>
  <muscles>Quads</muscles>
  <musclesPhoto src="muscles/seated_legs_extension_machine.png"/>
  <warmUp>
    <series>1</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="17">
  <name>Cable Leg Curl</name>
  <exercisePhoto src="exercises/cable_leg_curl.png"/>
  <muscles>Harmstrings</muscles>
  <musclesPhoto src="muscles/cable_leg_curl.png"/>
  <warmUp>
    <series>1</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="18">
  <name>Adductor Machine</name>
  <exercisePhoto src="exercises/adductor_machine.png"/>
  <muscles>Inner thighs</muscles>
  <musclesPhoto src="muscles/adductor_machine.png"/>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="19">
  <name>Abductor Machine</name>
  <exercisePhoto src="exercises/abductor_machine.png"/>
```

```
<muscles>Outer thighs</muscles>
<musclesPhoto src="muscles/abductor_machine.png"/>
<topSet>
  <series>1</series>
  <reps>10</reps>
</topSet>
<backOffset>
  <series>1</series>
  <reps>10</reps>
</backOffset>
</exercise>
<exercise cid="20">
  <name>Cable Forearm Curls</name>
  <exercisePhoto src="exercises/cable_forearm_curls.png"/>
  <muscles>Foreamrs</muscles>
  <musclesPhoto src="muscles/cable_forearm_curls.png"/>
  <warmUp>
    <series>2</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<exercise cid="21">
  <name>Cable Reverse Wrist Curl</name>
  <exercisePhoto src="exercises/cable_reverse_wrist_curl.png"/>
  <muscles>Foreamrs</muscles>
  <musclesPhoto src="muscles/cable_reverse_wrist_curl.png"/>
  <warmUp>
    <series>2</series>
    <reps>10</reps>
  </warmUp>
  <topSet>
    <series>1</series>
    <reps>10</reps>
  </topSet>
  <backOffset>
    <series>1</series>
    <reps>10</reps>
  </backOffset>
</exercise>
<cardio>
  <name>Treadmill Incline Walking</name>
  <exercisePhoto src="exercises/treadmill_incline_walking.png"/>
  <period>20</period>
  <speed>5.5</speed>
  <incline>10</incline>
</cardio>
<summary>
  <estimatedTime>1.83</estimatedTime>
  <quantity>7</quantity>
  <primaryMuscle>Quads</primaryMuscle>
```

```
        <primaryMuscle>Harmstrings</primaryMuscle>
        <primaryMuscle>Thighs</primaryMuscle>
        <primaryMuscle>Foreamrs</primaryMuscle>
        <musclesTargetedPhoto src="muscles/split_legs.png"/>
    </summary>
</training>
</day>
<day date="2024-05-02">
    <rest>rest day</rest>
</day>
```

Chapter 2. Schémy XML

V této části se nachází definované struktury XML dokumentu. Většina struktur jsou definovaná pomocí XML Schema, dvě pravidla jsou definované pomocí Schematronu.

XML Schema

XML schema se nachází v souboru `treninkovyPlan.xsd`. Vybral jsem dvě ukázky. První je definování struktury pro element `split`, kde si můžeme vybrat jednu ze čtyř zadaných možností.

Example 2.1. Definování struktury elementu `split`.

```
<xs:simpleType name="splitType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="push"/>
    <xs:enumeration value="pull"/>
    <xs:enumeration value="legs"/>
    <xs:enumeration value="mixed"/>
  </xs:restriction>
</xs:simpleType>
```

Druhou ukázka je definování struktury pro element `trainingPlan` a `plan`, kde element `plan` je podelementem elementu `trainingPlan`.

Example 2.2. Definování struktur elementů `trainingPlan` a `plan`

```
<xs:complexType name="trainingPlanType">
  <xs:sequence>
    <xs:element name="person" type="personType" minOccurs="1" maxOccurs="1"/>
    <xs:element name="plan" type="planType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="plansType">
  <xs:sequence>
    <xs:element name="name" type="nonEmptyString"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="planType">
  <xs:complexContent>
    <xs:extension base="plansType">
      <xs:sequence>
        <xs:element name="start" type="dateType"/>
        <xs:element name="end" type="dateType"/>
        <xs:element name="day" type="dayType" minOccurs="1" maxOccurs="1"/>
      </xs:sequence>
      <xs:attribute name="pid" type="xs:int" use="required"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```
</xs:complexContent>
</xs:complexType>
```

Schematron

Schematron sa nachází v souboru `treninkovyPlan.sch`. Jsou vybrané dvě ukázky. První je definování pravidla pro element `start`, pro který platí, že daný datum nesmí být za element `end`

Example 2.3. Definování pravidla pro výběr datumu v počátku plánu

```
<sch:pattern>
  <sch:title>Date check of start and end</sch:title>

  <sch:rule context="t:plan">
    <sch:assert test="t:start < t:end"> Date start of plan must be before end</sch:assert>

    <sch:assert test="t:start <= current-date()"> Date start can't be later than today</sch:assert>
  </sch:rule>
</sch:pattern>
```

Druhá ukázka je definování pravidla pro elementy `series` a `reps`, pro které platí, že počet `series` nesmí být větší jak počet `reps`.

Example 2.4. Definování pravidla pro nepřekročení počtu opakování počtem sérií

```
<sch:pattern>
  <sch:title>Check series and reps</sch:title>

  <sch:rule context="t:warmUp">
    <sch:assert test="xs:integer(t:series) <= xs:integer(t:reps)"> Number of series must be less or equal to number of reps</sch:assert>
  </sch:rule>

  <sch:rule context="t:topSet">
    <sch:assert test="xs:integer(t:series) <= xs:integer(t:reps)"> Number of series must be less or equal to number of reps</sch:assert>
  </sch:rule>

  <sch:rule context="t:backOffSet">
    <sch:assert test="xs:integer(t:series) <= xs:integer(t:reps)"> Number of series must be less or equal to number of reps</sch:assert>
  </sch:rule>
</sch:pattern>
```

Chapter 3. Transformace

V této části se nachází transformace XML dokumentu do html stránky a pdf souboru. Transformace do HTML byla tvořena pomocí jazyka XSLT a transformace do PDF za pomoci jazyka XSL-FO.

Transformace do HTML

Nachází se v souboru `treninkovyPlan.xslt`. Jsou vybrány dvě ukázky. První je vytvoření struktury pro tabulku, v které se nachází záznam jednotlivých tréninků v daných dnech. Struktura je vytvořena pomocí elementu `template`. V obou situacích jsou použité totožné šablony, liší se však zápisem vzhledem k tomu, že syntax XSL-FO je trochu náročnější. Celkově bylo vytvořeno 3 HTML stránek, jedna vypisuje záznam všech osob s přiřazenými plány v tréninkovém plánu a dále jsou stránky jednotlivých plánů.

Example 3.1. Definování šablony pro tabulku tréninku v daném dnu pro daného člověka

```
<xsl:template match="t:plan/t:day" mode="exercise_table">

    <h2> Day <xsl:text> </xsl:text>
      <xsl:value-of select="@date/format-date(xs:date(.),'[D01].[M01].[Y]
    </h2>

    <h3>
      <xsl:value-of select="t:training/@split"/>
    </h3>

    <xsl:choose>
      <xsl:when test="t:rest">
        <h3>
          <xsl:value-of select="t:rest"/>
        </h3>
      </xsl:when>
      <xsl:otherwise>
        <table class="roster">
          <tr>
            <th>Exercise</th>
            <th>Photo</th>
            <th>Targeted Muscles</th>
            <th>Photo</th>
            <th>Warm Up <table class="reps">
              <tr>
                <th>Series</th>
                <th>Reps</th>
              </tr>
            </table>
          </th>
            <th>Top Set <table class="reps">
              <tr>
                <th>Series</th>
                <th>Reps</th>
              </tr>
            </table>
          </th>
        </tr>
      </table>
    </xsl:otherwise>
  </xsl:choose>
</template>
```

```
<th>Back Off Set <table class="reps">
  <tr>
    <th>Series</th>
    <th>Reps</th>
  </tr>
</table></th>
</tr>

<xsl:for-each-group select="t:training/t:exercise" group-by="t:name">
  <tr>
    <td>
      <xsl:value-of select="t:name"/>
    </td>
    <td>
      <xsl:apply-templates select="t:exercisePhoto" mode="text"/>
    </td>
    <td>
      <xsl:value-of select="t:muscles"/>
    </td>
    <td>
      <xsl:apply-templates select="t:musclesPhoto" mode="text"/>
    </td>
    <td>
      <table class="reps">
        <tr>
          <td>
            <xsl:value-of select="t:warmUp/t:series"/>
          </td>
          <td>
            <xsl:value-of select="t:warmUp/t:reps"/>
          </td>
        </tr>
      </table>
    </td>
    <td>
      <table class="reps">
        <tr>
          <td>
            <xsl:value-of select="t:topSet/t:series"/>
          </td>
          <td>
            <xsl:value-of select="t:topSet/t:reps"/>
          </td>
        </tr>
      </table>
    </td>
    <td>
      <table class="reps">
        <tr>
          <td>
            <xsl:value-of select="t:backOffset/t:series"/>
          </td>
          <td>
            <xsl:value-of select="t:backOffset/t:reps"/>
          </td>
        </tr>
      </table>
    </td>
  </tr>
</xsl:for-each-group>
```

```
        </table>
      </td>
    </tr>
  </xsl:for-each-group>
</table>
<table class="roster">
  <tr>
    <th>Exercise</th>
    <th>Photo</th>
    <th>Period</th>
    <th>Speed</th>
    <th>Incline</th>
  </tr>

  <h3>Cardio</h3>

  <xsl:for-each-group select="t:training/t:cardio" group-by="t:name">
    <tr>
      <td>
        <xsl:value-of select="t:name"/>
      </td>
      <td>
        <xsl:apply-templates select="t:exercisePhoto" mode="cardio">
          </xsl:apply-templates>
        </td>
      <td>
        <xsl:value-of select="t:period"/> minutes
      </td>
      <td>
        <xsl:value-of select="t:speed"/> km/h
      </td>
      <td>
        <xsl:value-of select="t:incline"/> %
      </td>
    </tr>
  </xsl:for-each-group>
</table>

<table class="roster">
  <tr>
    <th>Estimated Time</th>
    <th>Number of exercises</th>
    <th>Targeted Muscles</th>
    <th>Photo</th>
  </tr>

  <h3>Summary</h3>

  <xsl:for-each select="t:training/t:summary">
    <tr>
      <td>
        <xsl:value-of select="t:estimatedTime"/> hours
      </td>
      <td>
        <xsl:value-of select="t:quantity"/>
      </td>
      <td>
```

```

        <xsl:value-of select="t:primaryMuscle"/>
      </td>
      <td>
        <xsl:apply-templates select="t:musclesTargetedP
      </td>
    </tr>
  </xsl:for-each>
</table>
</xsl:otherwise>
</xsl:choose>
</xsl:template>

```

Druhou ukázkou je vytvoření šablony, která vytvoří celkový plán pro danou osobu, kterou ji byl přiřazen. Šablona je vytvořená tak jako v první ukázce pomocí elementu `template`.

Example 3.2. Definování šablony pro celkový plán pro danou osobu

```

<xsl:template match="t:plan">
  <xsl:result-document href="{generate-id(t:name)}.html" format="html5">
    <html lang="en">
      <head>
        <meta name="author" content="Kevin Nguyen"/>
        <meta name="viewport" content="width=device-width, initial-
        <link rel="stylesheet" href="plan.css" type="text/css"/>
        <title>
          <xsl:value-of select="t:name"/>
        </title>
      </head>
      <body>
        <h1>
          <a href="treninkovyPlan.html">Training Plan</a>
        </h1>
        <h2>
          <xsl:value-of select="t:name"/>
        </h2>
        <table class="dates">
          <tr>
            <td>Start</td>
            <td>
              <xsl:apply-templates select="t:start" mode="date"
            </td>
          </tr>
          <tr>
            <td>End</td>
            <td>
              <xsl:apply-templates select="t:end" mode="date"
            </td>
          </tr>
        </table>
        <xsl:apply-templates select="t:day" mode="exercise_table"/>
        <footer>&#xA9;2024 Kevin Nguyen</footer>
      </body>
    </html>
  </xsl:template>

```

```

</xsl:result-document>
</xsl:template>

```

Transformace do PDF

Tato část sa nachází v souboru `treninkovyPlan_fo.xsl`. Jsou vybrány dvě ukázky. První ukázka je šablona tabulky tréninku, které se nachází v jednotlivých dnech v jednotlivém plánu. Šablona je vytvořená pomocí elementu `template`. Před samotnou transformací byl nejdříve vytvořený soubor `treninkovyPlan.fo`, v kterém je možno zjistit případné chyby, které se vyskytly při psaní kódu.

Example 3.3. Definice šablony tabulky tréninku v jednotlivých dnech

```

<xsl:template match="day" mode="exercise_table">
  <fo:block font-size="20px" font-weight="bold" margin-top="0.5cm" margin-bottom="0.5cm">
    Day<xsl:text> </xsl:text><xsl:value-of
      select="@date/format-date(xs:date(.), '[D01].[M01].[Y]')"/>
  </fo:block>

  <xsl:choose>
    <xsl:when test="rest">
      <fo:block font-size="15px" font-weight="bold" margin-top="0.5cm"
        margin-bottom="0.5cm">Rest day</fo:block>
    </xsl:when>
    <xsl:otherwise>
      <fo:block font-size="15px" font-weight="bold" margin-top="0.5cm"
        margin-bottom="0.5cm"> Split <xsl:text> </xsl:text>
        <xsl:value-of select="training/@split"/>
      </fo:block>
      <fo:table border="0.06cm solid black">
        <fo:table-column column-width="3cm"/>
        <fo:table-column column-width="2cm"/>
        <fo:table-column column-width="3cm"/>
        <fo:table-column column-width="2cm"/>
        <fo:table-column column-width="2cm"/>
        <fo:table-column column-width="2cm"/>
        <fo:table-column column-width="2cm"/>
        <fo:table-header>
          <fo:table-row border="0.03cm solid black">
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Exercise</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Photo</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Targeted Muscles</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Photo</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Warm Up (series/reps)</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
              <fo:block font-weight="bold">Notes</fo:block>
            </fo:table-cell>
          </fo:table-row>
          <fo:table-body>
            <fo:table-row>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Exercise</fo:block>
              </fo:table-cell>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Photo</fo:block>
              </fo:table-cell>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Targeted Muscles</fo:block>
              </fo:table-cell>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Photo</fo:block>
              </fo:table-cell>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Warm Up (series/reps)</fo:block>
              </fo:table-cell>
              <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Notes</fo:block>
              </fo:table-cell>
            </fo:table-row>
          </fo:table-body>
        </fo:table>
      </fo:table>
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>

```

```

        <fo:block font-weight="bold">Top Set (series/reps)
    </fo:table-cell>
    <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Back Off Set (series/reps)
    </fo:table-cell>
</fo:table-row>
</fo:table-header>
<fo:table-body>
    <xsl:for-each select="training/exercise">
        <fo:table-row>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:value-of select="name"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:apply-templates select="exercisePhoto"
                        mode="exercisePhoto"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:value-of select="muscles"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:apply-templates select="musclesPhoto"
                        mode="musclesPhoto"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:value-of select="warmUp/series"/>
                    <xsl:text> </xsl:text>
                    <xsl:value-of select="warmUp/reps"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:value-of select="topSet/series"/>
                    <xsl:text> </xsl:text>
                    <xsl:value-of select="topSet/reps"/>
                </fo:block>
            </fo:table-cell>
            <fo:table-cell padding-top="0.3cm" text-align="center"
                border="0.03cm solid black" height="2cm">
                <fo:block>
                    <xsl:value-of select="backOffSet/series"/>
                    <xsl:text> </xsl:text>
                    <xsl:value-of select="backOffSet/reps"/>
                </fo:block>
            </fo:table-cell>
        </fo:table-row>
    </xsl:for-each>
</fo:table-body>
</fo:table>

```



```

        </fo:block>
      </fo:table-cell>
    </fo:table-row>
  </xsl:for-each>
</fo:table-body>
</fo:table>

<fo:block font-size="15px" font-weight="bold" margin-top="0.5cm"
margin-bottom="0.5cm">Cardio</fo:block>
<fo:table border="0.06cm solid black">
  <fo:table-column column-width="3.2cm"/>
  <fo:table-column column-width="3.2cm"/>
  <fo:table-column column-width="3.2cm"/>
  <fo:table-column column-width="3.2cm"/>
  <fo:table-column column-width="3.2cm"/>
  <fo:table-header>
    <fo:table-row border="0.03cm solid black">
      <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Exercise</fo:block>
      </fo:table-cell>
      <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Photo</fo:block>
      </fo:table-cell>
      <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Period</fo:block>
      </fo:table-cell>
      <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Speed</fo:block>
      </fo:table-cell>
      <fo:table-cell border="0.03cm solid black" text-align="center">
        <fo:block font-weight="bold">Incline</fo:block>
      </fo:table-cell>
    </fo:table-row>
  </fo:table-header>
  <fo:table-body>
    <xsl:for-each select="training/cardio">
      <fo:table-row>
        <fo:table-cell padding-top="0.3cm" text-align="center"
border="0.03cm solid black" height="2cm">
          <fo:block>
            <xsl:value-of select="name"/>
          </fo:block>
        </fo:table-cell>
        <fo:table-cell padding-top="0.3cm" text-align="center"
border="0.03cm solid black" height="2cm">
          <fo:block>
            <xsl:apply-templates select="exercisePhoto"
mode="cardioPhoto"/>
          </fo:block>
        </fo:table-cell>
        <fo:table-cell padding-top="0.3cm" text-align="center"
border="0.03cm solid black" height="2cm">
          <fo:block>
            <xsl:value-of select="period"/> minutes
          </fo:block>
        </fo:table-cell>
        <fo:table-cell padding-top="0.3cm" text-align="center"
border="0.03cm solid black" height="2cm">

```

```

        <fo:block>
            <xsl:value-of select="speed"/> km/h
        </fo:block>
    </fo:table-cell>
    <fo:table-cell padding-top="0.3cm" text-align="center"
        border="0.03cm solid black" height="2cm">
        <fo:block>
            <xsl:value-of select="incline"/> %
        </fo:block>
    </fo:table-cell>
</fo:table-row>
</fo:table>
</xsl:for-each>
</fo:table-body>
</fo:table>

<fo:block font-size="15px" font-weight="bold" margin-top="0.5cm"
    margin-bottom="0.5cm">Summary</fo:block>
<fo:table border="0.06cm solid black">
    <fo:table-column column-width="4cm"/>
    <fo:table-column column-width="4cm"/>
    <fo:table-column column-width="3cm"/>
    <fo:table-column column-width="5cm"/>
    <fo:table-header>
        <fo:table-row border="0.03cm solid black">
            <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Estimated Time</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Number Of Exercises</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Targeted Muscles</fo:block>
            </fo:table-cell>
            <fo:table-cell border="0.03cm solid black" text-align="center">
                <fo:block font-weight="bold">Photo</fo:block>
            </fo:table-cell>
        </fo:table-row>
    </fo:table-header>
    <fo:table-body>
        <xsl:for-each select="training/summary">
            <fo:table-row>
                <fo:table-cell padding-top="0.3cm" text-align="center"
                    border="0.03cm solid black" height="2cm">
                    <fo:block>
                        <xsl:value-of select="estimatedTime"/>
                    </fo:block>
                </fo:table-cell>
                <fo:table-cell padding-top="0.3cm" text-align="center"
                    border="0.03cm solid black" height="2cm">
                    <fo:block>
                        <xsl:value-of select="quantity"/>
                    </fo:block>
                </fo:table-cell>
                <fo:table-cell padding-top="0.3cm" text-align="center"
                    border="0.03cm solid black" height="2cm">
                    <fo:block>
                        <xsl:value-of select="primaryMuscle"/>
                    </fo:block>
                </fo:table-cell>
            </fo:table-row>
        </xsl:for-each>
    </fo:table-body>
</fo:table>

```

```

        </fo:table-cell>
        <fo:table-cell padding-top="0.3cm" text-align="center"
            border="0.03cm solid black" height="2cm">
            <fo:block>
                <xsl:apply-templates select="musclesTargetedPhoto"
                    mode="musclesTargetedPhoto"/>
            </fo:block>
        </fo:table-cell>
    </fo:table-row>
</xsl:for-each>
</fo:table-body>
</fo:table>
</xsl:otherwise>
</xsl:choose>
</xsl:template>

```

Druhou ukázkou je vytvoření šablony, která vytvoří celkový plán pro danou osobu, kterou ji byl přiřazen. Šablona je vytvořena tak jako v první ukázce pomocí elementu `template`.

Example 3.4. Zadefinovanie šablóny pre výpis počtu Stanley Cup a jednotlivých rokov, v ktorých daný tím vyhral

```

<xsl:template match="plan">
    <fo:block id="{generate-id()}" break-before="page" font-weight="bold">
        <xsl:value-of select="name"/>
    </fo:block>
    <fo:table>
        <fo:table-body>
            <fo:table-row border="0.03cm solid black">
                <fo:table-cell border="0.03cm solid black">
                    <fo:block font-weight="bold">Start</fo:block>
                </fo:table-cell>
                <fo:table-cell>
                    <fo:block>
                        <xsl:apply-templates select="start" mode="date"/>
                    </fo:block>
                </fo:table-cell>
            </fo:table-row>
            <fo:table-row border="0.03cm solid black">
                <fo:table-cell border="0.03cm solid black">
                    <fo:block font-weight="bold">End</fo:block>
                </fo:table-cell>
                <fo:table-cell>
                    <fo:block>
                        <xsl:apply-templates select="end" mode="date"/>
                    </fo:block>
                </fo:table-cell>
            </fo:table-row>
        </fo:table-body>
    </fo:table>
    <fo:block>
        <xsl:apply-templates select="day" mode="exercise_table"/>
    </fo:block>
</xsl:template>

```

Chapter 4. CSS

Pomocí jazyka CSS jsou formátované HTML výstupy. Jeden výstup je pro hlavní stránku, kde se vyskytují osoby s přiřazeným plánem a druhý, kde mají jednotlivé plány svoje vlastní HTML stránku.

Osoby v tréninkovém plánu

Ukázka souboru `treninkovyPlan.css`, který upravuje hlavní stránku s osobami.

Example 4.1. Ukázka souboru `treninkovyPlan.css`

```
* {
  font-family: "Inconsolata", monospace;
  font-weight: 500;
  font-style: normal;
  color: #130e0e;
}

body {
  max-width: 100%;
  overflow-x: hidden;
  height: 100%;
}

h1 {
  position: sticky;
  top: 0px;
  padding: 0px 20px;
  background-color: white;
  height: 40px;
  color: red;
  font-weight: bold;
  text-decoration: underline;
}

h3 {
  font-size: 150%;
  color: black;
  font-weight: bold;
}

table td:nth-child(2) {
  padding-left: 200px;
}

table td:first-child {
  font-weight: bold;
}

table {
```

```
    display: block;
    border: 2.5px solid gray;
    margin: 20px auto;
    padding: 20px 20px;
    width: 800px;
}

table td a {
    color: blue;
    text-decoration: none;
    font-weight: bold;
}

footer {
    position: static;
    text-align: center;
    font-size: 1em;
    font-style: italic;
    bottom: 0;
    width: 100%;
    padding: 0.3em 0.7em 0.3em 0.7em;
    margin-left: 0
}
```

Stránka plánu

Ukázka souboru `plan.css`, který upravuje stránku pro konkrétní plán.

Example 4.2. Ukázka souboru `plan.css`

```
* {
    font-family: "Inconsolata", monospace;
    font-weight: 500;
    font-style: normal;
    color: #130e0e;
}

body {
    max-width: 100%;
    overflow-x: hidden;
    height: 100%;
}

a {
    color: red;
    text-decoration: underline;
    font-weight: bold;
}

h1 {
    position: sticky;
    top: 0px;
}
```

```
padding: 0px 20px;
background-color: white;
height: 40px;
}

h2 {
padding-left: 10px;
}

h2:nth-child(2) {
font-weight: bold;
color: black;
}

h3 {
padding-left: 20px;
font-weight: bold;
}

table,
th {
border: 2.5px solid grey;
border-collapse: collapse;
}

.dates td:nth-child(1) {
font-weight: bold;
}

.dates td {
border: 2.5px solid grey;
border-collapse: collapse;
}

table .roster,
.reps {
display: block;
text-align: center;
width: 100%;
}

td {
border: 2.5px solid grey;
}

table {
width: 90%;
text-align: center;
margin-left: auto;
margin-right: auto;
}

.muscles {
width: 15em;
display: block;
}
```

```
    margin-left: 0;
    margin-left: auto;
    margin-right: auto;
}

.exercise {
    width: 20em;
    display: block;
    margin-left: auto;
    margin-right: auto;
}

.roster th {
    font-weight: bold;
}

.reps {
    display: table;
    border: none;
}

.reps th {
    border: none;
}

.reps td {
    text-align: center;
    border: none;
}

.roster td {
    text-align: center;
}

.roster td {
    width: 13em;
}

.roster td:first-child {
    font-weight: bold;
}

.reps td:first-child {
    font-weight: 300;
}

footer {
    position: static;
    text-align: center;
    font-size: 1em;
    font-style: italic;
    bottom: 0;
```



```
width: 100%;  
padding: 0.3em 0.7em 0.3em 0.7em;  
margin-left: 0  
}
```