

ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ  
ΣΧΟΛΗ ΤΕΧΝΟΛΟΓΙΩΝ ΠΛΗΡΟΦΟΡΙΚΗΣ & ΕΠΙΚΟΙΝΩΝΙΩΝ  
ΤΜΗΜΑ ΨΗΦΙΑΚΩΝ ΣΥΣΤΗΜΑΤΩΝ  
ΑΚΑΔ.ΕΤΟΣ 2017-18

# ΔΟΜΗΜΕΝΗ ΑΝΑΠΑΡΑΣΤΑΣΗ ΠΛΗΡΟΦΟΡΙΩΝ

ΕΡΓΑΣΙΑ ΕΞΑΜΗΝΟΥ

ΚΑΛΟΓΕΡΑΚΗΣ ΚΩΝΣΤΑΝΤΙΝΟΣ  
ΜΠΕΚΑ ΜΙΡΑΝΤΑ-ΜΑΡΙΑ  
ΠΡΙΦΤΗΣ ΑΝΔΡΕΑΣ

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## Πίνακας περιεχομένων

Στοιχεία Ομάδας.....	1
Πίνακας Περιεχομένων .....	2
Απαντήσεις Ερωτημάτων .....	3
Ερώτημα 1 .....	3
Ζητούμενο 1: DTD .....	3
Ζητούμενο 2: έγκυρο XML .....	3
Ζητούμενο 3: μη έγκυρο XML .....	5
Ερώτημα 2 .....	7
Ζητούμενο 1: XML .....	7
Ζητούμενο 2: DTD .....	14
Ζητούμενο 3: NEW XML, DTD .....	16
Ζητούμενο 4: XSD .....	25
Ζητούμενο 5: NEW2 XML, DTD .....	30
Ζητούμενο 6: CSS .....	41
Ζητούμενο 7: XSL .....	61
a) <i>present1</i> .....	61
b) <i>present2</i> .....	62
c) <i>present3</i> .....	64
d) <i>present4</i> .....	66
e) <i>present5</i> .....	68
Βιβλιογραφία .....	70

## ΕΡΩΤΗΜΑ 1<sup>ο</sup>:

### 1) αρχείο **erothma1.dtd**

```
<?xml version="1.0" encoding="UTF-8" ?>
<!ELEMENT InvoiceList (Invoice | Receipt)*>
<!ELEMENT Invoice (Company,Item,Date,Billing_Address,Shipping_Address?,TotalAmount)>
<!ELEMENT Company (Company_Name,AFM,DOY,Address,Tel?)>
<!ELEMENT Company_Name (#PCDATA)>
<!ELEMENT AFM (#PCDATA)>
<!ELEMENT DOY (#PCDATA)>
<!ELEMENT Address (#PCDATA)>
<!ELEMENT Tel (#PCDATA)>
<!ELEMENT Item (Description,Initial_Price,Amount,in_discount?)>
<!ELEMENT Description (#PCDATA)>
<!ELEMENT Initial_Price (#PCDATA)>
<!ELEMENT Amount (#PCDATA)>
<!ELEMENT in_discount (discount_rate,amount_after_discount)>
<!ELEMENT discount_rate (#PCDATA)>
<!ELEMENT amount_after_discount (#PCDATA)>
<!ELEMENT Date (#PCDATA)>
<!ELEMENT Billing_Address (#PCDATA)>
<!ELEMENT Shipping_Address (#PCDATA)>
<!ELEMENT TotalAmount (#PCDATA)>
<!ELEMENT Receipt (Customer,Item,Date,Billing_Address,Shipping_Address?,TotalAmount)>
<!ELEMENT Customer (First_Name, Middle_Name, Last_Name)>
<!ELEMENT First_Name (#PCDATA)>
<!ELEMENT Middle_Name (#PCDATA)>
<!ELEMENT Last_Name (#PCDATA)>
<!ATTLIST Invoice InvCodeNo ID #REQUIRED>
<!ATTLIST Item Quantity CDATA "1">
<!ATTLIST Item item_category (hw | sw) "hw">
<!ATTLIST Receipt CodeNo ID #REQUIRED>
```

### 2) αρχείο **erothma1.xml**

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE InvoiceList SYSTEM "erothma1.dtd">
<InvoiceList>
<Invoice InvCodeNo="A50">
    <Company>
        <Company_Name>Butterfly</Company_Name>
        <AFM>85332710</AFM>
        <DOY>Piraeus</DOY>
        <Address>Androutsou 83</Address>
```

```

        <Tel>2104046136</Tel>
    </Company>
    <Item item_category = "hw" Quantity = "3">
        <Description>The best Item in the world</Description>
        <Initial_Price>15</Initial_Price>
        <Amount>45</Amount>
        <in_discount>
            <discount_rate></discount_rate>
            <amount_after_discount></amount_after_discount>
        </in_discount>
    </Item>
    <Date>02/05/2018</Date>
    <Billing_Address>Fragouli Foutri 49</Billing_Address>
    <Shipping_Address></Shipping_Address>
    <TotalAmount>45</TotalAmount>
</Invoice>
<Receipt CodeNo="A40">
    <Customer>
        <First_Name>Andreas</First_Name>
        <Middle_Name>Iosif</Middle_Name>
        <Last_Name></Last_Name>
    </Customer>

    <Item item_category = "hw" Quantity = "1">
        <Description>The best Item in the world</Description>
        <Initial_Price>15</Initial_Price>
        <Amount>15</Amount>
        <in_discount>
            <discount_rate></discount_rate>
            <amount_after_discount></amount_after_discount>
        </in_discount>
    </Item>
    <Date>03/05/2018</Date>
    <Billing_Address>Agaphs 17</Billing_Address>
    <Shipping_Address>Peukon 59</Shipping_Address>
    <TotalAmount>15</TotalAmount>
</Receipt>
</InvoiceList>

```

### 3) αρχείο `erothma1_error.xml`

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE InvoiceList
[
    <!ELEMENT InvoiceList (Invoice | Receipt)*>
    <!ELEMENT Invoice (Company,Item,Date,Billing_Address,Shipping_Address?,TotalAmount)>
    <!ELEMENT Company (Company_Name,AFM,DOY,Address,Tel?)>
    <!ELEMENT Company_Name (#PCDATA)>
    <!ELEMENT AFM (#PCDATA)>
    <!ELEMENT DOY (#PCDATA)>
    <!ELEMENT Address (#PCDATA)>
    <!ELEMENT Tel (#PCDATA)>
    <!ELEMENT Item (Description,Initial_Price,Amount,in_discount?)>
    <!ELEMENT Description (#PCDATA)>
    <!ELEMENT Initial_Price (#PCDATA)>
    <!ELEMENT Amount (#PCDATA)>
    <!ELEMENT in_discount (discount_rate,amount_after_discount)>
    <!ELEMENT discount_rate (#PCDATA)>
    <!ELEMENT amount_after_discount (#PCDATA)>
    <!ELEMENT Date (#PCDATA)>
    <!ELEMENT Billing_Address (#PCDATA)>
    <!ELEMENT Shipping_Address (#PCDATA)>
    <!ELEMENT TotalAmount (#PCDATA)>
    <!ELEMENT Receipt (Customer,Item,Date,Billing_Address,Shipping_Address?,TotalAmount)>
    <!ELEMENT Customer (First_Name,Middle_Name,Last_Name)>
    <!ELEMENT First_Name (#PCDATA)>
    <!ELEMENT Middle_Name (#PCDATA)>
    <!ELEMENT Last_Name (#PCDATA)>
    <!ATTLIST Invoice InvCodeNo ID #REQUIRED>
    <!ATTLIST Item Quantity CDATA "1">
    <!ATTLIST Item item_category (hw | sw) "hw">
    <!ATTLIST Receipt CodeNo ID #REQUIRED>
]>
<InvoiceList>
<Invoice InvCodeNo="50">
    <Company>
        <Company_Name>Butterfly</Company_Name>
        <AFM>85332710</AFM>
        <DOY>Piraeus</DOY>
        <Address>Androutsou 83</Address>
        <Tel>2104046136</Tel>
    </Company>
    <Item item_category = "hw" Quantity = "3">
        <Description>The best Item in the world</Description>
        <Initial_Price>15</Initial_Price>
```

```

        <Amount>45</Amount>
        <in_discount>
            <discount_rate></discount_rate>
            <amount_after_discount></amount_after_discount>
        </in_discount>
    </Item>
    <Date>02/05/2018</Date>
    <Billing_Address>Fragouli Foutri 49</Billing_Address>
    <Shipping_Address></Shipping_Address>
    <TotalAmount>45</TotalAmount>
</Invoice>
<Receipt CodeNo="40">
    <Customer>
        <First_Name>Andreas</First_Name>
        <Middle_Name>Iosif</Middle_Name>
        <Last_Name></Last_Name>
    </Customer>

    <Item item_category = "la" Quantity = "1">
        <Description>The best Item in the world</Description>
        <Initial_Price>15</Initial_Price>
        <Amount>15</Amount>
        <in_discount>
            <discount_rate></discount_rate>
            <amount_after_discount></amount_after_discount>
        </in_discount>
    </Item>
    <Date>03/05/2018</Date>
    <Billing_Address>Agaphs 17</Billing_Address>
    <Shipping_Address>Peukon 59</Shipping_Address>
    <TotalAmount>15</TotalAmount>
</Receipt>
</InvoiceList>

```




## Validate an XML file

Read here how to [validate your XML files \(including referenced DTDs\)](#) online with just a few mouse clicks.

### 3 errors have been found!

Click on  to jump to the error. In the document, you can point at  with your mouse to see the error message.

#### Errors in the XML document:

-  34: 25 Attribute value "50" of type ID must be an NCName when namespaces are enabled.
-  56: 22 Attribute value "40" of type ID must be an NCName when namespaces are enabled.
-  63: 44 Attribute "item\_category" with value "la" must have a value from the list "hw sw ".

#### XML document:

- 1 <?xml version="1.0" encoding="UTF-8" ?>
- 2 <!DOCTYPE InvoiceList

## ΕΡΩΤΗΜΑ 2<sup>ο</sup>:

### 1) αρχείο **timecards.xml**

```
<?xml version="1.0" encoding="UTF-8" ?>

<!DOCTYPE TimeCards SYSTEM "timecards.dtd">

<TimeCards>
  <EnterpriseDtls>
    <Img>logo_enterprise.jpg</Img>
    <Enterprise_Name>Enter Company</Enterprise_Name>
    <Address>Antigonis 25, 15235, Athens, Greece</Address>
  </EnterpriseDtls>

  <Projects>
    <Project project_ID = "P1">Website Rollout</Project>
    <Project project_ID = "P2">Admin</Project>
    <Project project_ID = "P3">Advertising</Project>
  </Projects>

  <Employees>
    <Employee ID = "E1">
      <Name>Eleftheria Mitsi</Name>
      <Manager>George Papadopoulos</Manager>
      <Belongs_to_dept>IT Department</Belongs_to_dept>
      <Dates_of_week period=" 01/01/18 - 07/01/18">
        <timesheet>
          <Date>1/1/2018</Date>
          <Holiday>8</Holiday>
          <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>
          <Date>2/1/2018</Date>
          <Sick>8</Sick>
          <Other></Other>
          <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>
          <Date>3/1/2018</Date>
          <Vacation>8</Vacation>
          <Total_Hours>8</Total_Hours>
        </timesheet>
      </Dates_of_week>
    </Employee>
  </Employees>
</TimeCards>
```



```

<timesheet>
  <Date>4/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit = "minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Other type = "work_from_home">10</Other>
  <Total_Hours>10</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>6/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>7:00pm</Finish_Time>
  <Total_Break_Time unit = "minutes">0</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>2</Overtime_Hours>
  <Total_Hours>10</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>7/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>7:00pm</Finish_Time>
  <Other type = "be_in_Seminar">11</Other>
  <Total_Hours>11</Total_Hours>
</timesheet>

```

```

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "64">
  <total_Regular_Hours>16</total_Regular_Hours>

```

```

        <total_Overtime_Hours>3</total_Overtime_Hours>
        <total_sick_Hours>8</total_sick_Hours>
        <total_vacation_Hours>8</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>21</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P1" nameTask = "Off site meetings"/>
        <Task project = "P2" nameTask = "Analysis Complete"/>
    </Tasks>
</Dates_of_week>

<Dates_of_week period = " 08/01/2018 - 14/01/18 ">
    <timesheet>
        <Date>8/1/2018</Date>
        <Start_Time>8:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>9/1/2018</Date>
        <Start_Time>8:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>10/1/2018</Date>
        <Start_Time>9:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>11/1/2018</Date>
        <Start_Time>9:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>

```

```

        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>12/1/2018</Date>
        <Start_Time>9:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>13/1/2018</Date>
        <Holiday>8</Holiday>
        <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>14/1/2018</Date>
        <Holiday>8</Holiday>
        <Total_Hours>8</Total_Hours>
    </timesheet>

    <Rates_per_hour currency = "euro">
        <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
        <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>20.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "60">
        <total_Regular_Hours>40</total_Regular_Hours>
        <total_Overtime_Hours>4</total_Overtime_Hours>
        <total_sick_Hours>0</total_sick_Hours>
        <total_vacation_Hours>0</total_vacation_Hours>
        <total_holiday_Hours>16</total_holiday_Hours>
        <total_other_Hours>0</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P1" nameTask = "Upload Website Changes"/>
    </Tasks>
</Dates_of_week>

```

</Employee>

<Employee ID = "E2">

<Name>Stiliani Lamda</Name>

<Manager>Leonidas Kourvaras</Manager>

<Belongs\_to\_dept>IT Department</Belongs\_to\_dept>

<Dates\_of\_week period=" 01/01/18 - 07/01/18">

<timesheet>

<Date>1/1/2018</Date>

<Holiday>8</Holiday>

<Total\_Hours>8</Total\_Hours>

</timesheet>

<timesheet>

<Date>2/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Total\_Break\_Time unit="minutes">60</Total\_Break\_Time>

<Regular\_Hours>8</Regular\_Hours>

<Overtime\_Hours>1</Overtime\_Hours>

<Total\_Hours>9</Total\_Hours>

</timesheet>

<timesheet>

<Date>3/1/2018</Date>

<Start\_Time>9:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Total\_Break\_Time unit="minutes">60</Total\_Break\_Time>

<Regular\_Hours>8</Regular\_Hours>

<Total\_Hours>8</Total\_Hours>

</timesheet>

<timesheet>

<Date>4/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Other type = "work\_at\_Customer">10</Other>

<Total\_Hours>10</Total\_Hours>

</timesheet>

<timesheet>

<Date>5/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Total\_Break\_Time unit="minutes">60</Total\_Break\_Time>

<Regular\_Hours>8</Regular\_Hours>

<Overtime\_Hours>1</Overtime\_Hours>

```
        <Total_Hours>9</Total_Hours>
    </timesheet>
```

```
<timesheet>
    <Date>6/1/2018</Date>
    <Vacation>8</Vacation>
    <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
    <Date>7/1/2018</Date>
    <Vacation>8</Vacation>
    <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<Rates_per_hour currency = "euro">
    <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
    <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
    <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
    <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
    <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
    <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
    <total_Regular_Hours>24</total_Regular_Hours>
    <total_Overtime_Hours>2</total_Overtime_Hours>
    <total_sick_Hours>0</total_sick_Hours>
    <total_vacation_Hours>16</total_vacation_Hours>
    <total_holiday_Hours>8</total_holiday_Hours>
    <total_other_Hours>10</total_other_Hours>
</All_TotalHours>
<Tasks>
    <Task project = "P3" nameTask = "Software Design"/>
</Tasks>
```

```
</Dates_of_week>
```

```
</Employee>
```

```
<Employee ID="E3">
    <Name>Maria Sotiriou</Name>
    <Manager>George Mandras</Manager>
    <Belongs_to_dept>Advertising Department</Belongs_to_dept>
    <Dates_of_week period=" 01/01/18 - 07/01/18">
        <timesheet>
            <Date>1/1/2018</Date>
```

```
<Holiday>8</Holiday>
<Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>2/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>3/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>4/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>6/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
```

```

        <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>7/1/2018</Date>
        <Start_Time>9:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit="minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Total_Hours>8</Total_Hours>
    </timesheet>

    <Rates_per_hour currency = "euro">
        <rate_per_regular_hrs>30.00</rate_per_regular_hrs>
        <rate_per_overtime_hrs>40.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>30.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>30.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>30.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>35.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "59">
        <total_Regular_Hours>48</total_Regular_Hours>
        <total_Overtime_Hours>3</total_Overtime_Hours>
        <total_sick_Hours>0</total_sick_Hours>
        <total_vacation_Hours>0</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>0</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P3" nameTask = "Software Design"/>
    </Tasks>
    </Dates_of_week>
</Employee>

</Employees>
</TimeCards>

```

## 2) αρχείο **timecards.dtd**

```

<?xml version="1.0" encoding="UTF-8" ?>
<!ELEMENT TimeCards (EnterpriseDtIs,Projects,Employees)>
<!ELEMENT Projects (Project+)>
<!ELEMENT Project (#PCDATA)>
<!ELEMENT Employees (Employee+)>
<!ELEMENT EnterpriseDtIs (Img,Enterprise_Name,Address)>

```

```

<!ELEMENT Employee (Name,Manager,Belongs_to_dept,Dates_of_week+)>
<!ELEMENT Dates_of_week (timesheet+,Rates_per_hour,All_TotalHours,Tasks)>
<!ELEMENT timesheet
(Date,Start_Time?,Finish_Time?,Total_Break_Time?,Regular_Hours?,Overtime_Hours?,Sick?,Vacatio
n?,Holiday?,Other?,Total_Hours)>
<!ELEMENT Rates_per_hour
(rate_per_regular_hrs,rate_per_overtime_hrs,rate_per_sick_hrs,rate_per_vacation_hrs,rate_per_h
oliday_hrs,rate_per_other_hrs)>
<!ELEMENT All_TotalHours
(total_Regular_Hours,total_Overtime_Hours,total_sick_Hours,total_vacation_Hours,total_holiday_H
ours,total_other_Hours)>
<!ELEMENT Tasks (Task*)>
<!ELEMENT Task EMPTY>
<!ELEMENT Img (#PCDATA)>
<!ELEMENT Enterprise_Name (#PCDATA)>
<!ELEMENT Address (#PCDATA)>
<!ELEMENT Name (#PCDATA)>
<!ELEMENT Manager (#PCDATA)>
<!ELEMENT Belongs_to_dept (#PCDATA)>
<!ELEMENT Date (#PCDATA)>
<!ELEMENT Start_Time (#PCDATA)>
<!ELEMENT Finish_Time (#PCDATA)>
<!ELEMENT Total_Break_Time (#PCDATA)>
<!ELEMENT Regular_Hours (#PCDATA)>
<!ELEMENT Overtime_Hours (#PCDATA)>
<!ELEMENT Sick (#PCDATA)>
<!ELEMENT Vacation (#PCDATA)>
<!ELEMENT Holiday (#PCDATA)>
<!ELEMENT Other (#PCDATA)>
<!ELEMENT Total_Hours (#PCDATA)>
<!ELEMENT rate_per_regular_hrs (#PCDATA)>
<!ELEMENT rate_per_overtime_hrs (#PCDATA)>
<!ELEMENT rate_per_sick_hrs (#PCDATA)>
<!ELEMENT rate_per_vacation_hrs (#PCDATA)>
<!ELEMENT rate_per_holiday_hrs (#PCDATA)>
<!ELEMENT rate_per_other_hrs (#PCDATA)>
<!ELEMENT total_Regular_Hours (#PCDATA)>
<!ELEMENT total_Overtime_Hours (#PCDATA)>
<!ELEMENT total_sick_Hours (#PCDATA)>
<!ELEMENT total_vacation_Hours (#PCDATA)>
<!ELEMENT total_holiday_Hours (#PCDATA)>
<!ELEMENT total_other_Hours (#PCDATA)>

<!ATTLIST Employee ID ID #REQUIRED>
<!ATTLIST Employee Employee_type (permanent | temporary) #IMPLIED>
<!ATTLIST Total_Break_Time unit CDATA #REQUIRED>

```



```

<!ATTLIST Other type (work_from_home | be_in_Seminar | work_at_Customer)
"work_from_home">
<!ATTLIST Rates_per_hour currency (euro | USA_dollar) #IMPLIED>
<!ATTLIST All_TotalHours hours CDATA #REQUIRED>
<!ATTLIST Project project_ID ID #REQUIRED>
<!ATTLIST Task project IDREF #IMPLIED>
<!ATTLIST Task nameTask CDATA #REQUIRED>
<!ATTLIST Dates_of_week period CDATA #REQUIRED>

```

### 3)

#### Αρχείο **timecards\_new.xml**

```

<?xml version="1.0" encoding="UTF-8" ?>

<!DOCTYPE TimeCards SYSTEM "timecards_new.dtd">

<TimeCards>
  <EnterpriseDtls Enterprise_Name = "Enter Company" Address = "Antigonis 25, 15235,
  Athens, Greece">
    <Img src="Picture"/>
  </EnterpriseDtls>

  <Projects>
    <Project project_ID = "P1" name = "Website Rollout"/>
    <Project project_ID = "P2" name = "Admin"/>
    <Project project_ID = "P3" name = "Advertising"/>
  </Projects>

  <Employees>
    <Employee ID = "E1">
      <Name>Eleftheria Mitsi</Name>
      <Manager>George Papadopoulos</Manager>
      <Belongs_to_dept>IT Department</Belongs_to_dept>
      <Dates_of_week period=" 01/01/18 - 07/01/18">
        <timesheet>
          <Date>1/1/2018</Date>
          <Holiday>8</Holiday>
          <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>
          <Date>2/1/2018</Date>
          <Sick>8</Sick>
          <Other></Other>
          <Total_Hours>8</Total_Hours>

```

</timesheet>

<timesheet>

<Date>3/1/2018</Date>

<Vacation>8</Vacation>

<Total\_Hours>8</Total\_Hours>

</timesheet>

<timesheet>

<Date>4/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Total\_Break\_Time unit = "minutes">60</Total\_Break\_Time>

<Regular\_Hours>8</Regular\_Hours>

<Overtime\_Hours>1</Overtime\_Hours>

<Total\_Hours>9</Total\_Hours>

</timesheet>

<timesheet>

<Date>5/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>6:00pm</Finish\_Time>

<Other type = "work\_from\_home">10</Other>

<Total\_Hours>10</Total\_Hours>

</timesheet>

<timesheet>

<Date>6/1/2018</Date>

<Start\_Time>9:00am</Start\_Time>

<Finish\_Time>7:00pm</Finish\_Time>

<Total\_Break\_Time unit = "minutes">0</Total\_Break\_Time>

<Regular\_Hours>8</Regular\_Hours>

<Overtime\_Hours>2</Overtime\_Hours>

<Total\_Hours>10</Total\_Hours>

</timesheet>

<timesheet>

<Date>7/1/2018</Date>

<Start\_Time>8:00am</Start\_Time>

<Finish\_Time>7:00pm</Finish\_Time>

<Other type = "be\_in\_Seminar">11</Other>

<Total\_Hours>11</Total\_Hours>

</timesheet>

<Rates\_per\_hour currency = "euro">

<rate\_per\_regular\_hrs>20.00</rate\_per\_regular\_hrs>

```

        <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>20.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "64">
        <total_Regular_Hours>16</total_Regular_Hours>
        <total_Overtime_Hours>3</total_Overtime_Hours>
        <total_sick_Hours>8</total_sick_Hours>
        <total_vacation_Hours>8</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>21</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P1" nameTask = "Off site meetings"/>
        <Task project = "P2" nameTask = "Analysis Complete"/>
    </Tasks>
</Dates_of_week>

<Dates_of_week period = " 08/01/2018 - 14/01/18 ">
    <timesheet>
        <Date>8/1/2018</Date>
        <Start_Time>8:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>9/1/2018</Date>
        <Start_Time>8:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours>1</Overtime_Hours>
        <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>10/1/2018</Date>
        <Start_Time>9:00am</Start_Time>
        <Finish_Time>6:00pm</Finish_Time>
        <Total_Break_Time unit = "minutes">60</Total_Break_Time>

```

```

        <Regular_Hours>8</Regular_Hours>
        <Total_Hours>8</Total_Hours>
    </timesheet>

```

```

<timesheet>
    <Date>11/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>12/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>13/1/2018</Date>
    <Holiday>8</Holiday>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>14/1/2018</Date>
    <Holiday>8</Holiday>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<Rates_per_hour currency = "euro">
    <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
    <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
    <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
    <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
    <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
    <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
    <total_Regular_Hours>40</total_Regular_Hours>
    <total_Overtime_Hours>4</total_Overtime_Hours>
    <total_sick_Hours>0</total_sick_Hours>
    <total_vacation_Hours>0</total_vacation_Hours>

```

```

        <total_holiday_Hours>16</total_holiday_Hours>
        <total_other_Hours>0</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P1" nameTask = "Upload Website Changes"/>
    </Tasks>
</Dates_of_week>

</Employee>

<Employee ID = "E2">
    <Name>Stiliani Lamda</Name>
    <Manager>Leonidas Kourvaras</Manager>
    <Belongs_to_dept>IT Department</Belongs_to_dept>
    <Dates_of_week period=" 01/01/18 - 07/01/18">
        <timesheet>
            <Date>1/1/2018</Date>
            <Holiday>8</Holiday>
            <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>
            <Date>2/1/2018</Date>
            <Start_Time>8:00am</Start_Time>
            <Finish_Time>6:00pm</Finish_Time>
            <Total_Break_Time unit="minutes">60</Total_Break_Time>
            <Regular_Hours>8</Regular_Hours>
            <Overtime_Hours>1</Overtime_Hours>
            <Total_Hours>9</Total_Hours>
        </timesheet>

        <timesheet>
            <Date>3/1/2018</Date>
            <Start_Time>9:00am</Start_Time>
            <Finish_Time>6:00pm</Finish_Time>
            <Total_Break_Time unit="minutes">60</Total_Break_Time>
            <Regular_Hours>8</Regular_Hours>
            <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>
            <Date>4/1/2018</Date>
            <Start_Time>8:00am</Start_Time>
            <Finish_Time>6:00pm</Finish_Time>
            <Other type = "work_at_Customer">10</Other>
            <Total_Hours>10</Total_Hours>
        </timesheet>
    </Dates_of_week>
</Employee ID = "E2">

```

```

<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>

<timesheet>
  <Date>6/1/2018</Date>
  <Vacation>8</Vacation>
  <Total_Hours>8</Total_Hours>
</timesheet>

<timesheet>
  <Date>7/1/2018</Date>
  <Vacation>8</Vacation>
  <Total_Hours>8</Total_Hours>
</timesheet>

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
  <total_Regular_Hours>24</total_Regular_Hours>
  <total_Overtime_Hours>2</total_Overtime_Hours>
  <total_sick_Hours>0</total_sick_Hours>
  <total_vacation_Hours>16</total_vacation_Hours>
  <total_holiday_Hours>8</total_holiday_Hours>
  <total_other_Hours>10</total_other_Hours>
</All_TotalHours>
<Tasks>
  <Task project = "P3" nameTask = "Software Design"/>
</Tasks>

</Dates_of_week>

</Employee>

```

```

<Employee ID="E3">
  <Name>Maria Sotiriou</Name>
  <Manager>George Mandras</Manager>
  <Belongs_to_dept>Advertising Department</Belongs_to_dept>
  <Dates_of_week period=" 01/01/18 - 07/01/18">
    <timesheet>
      <Date>1/1/2018</Date>
      <Holiday>8</Holiday>
      <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
      <Date>2/1/2018</Date>
      <Start_Time>8:00am</Start_Time>
      <Finish_Time>6:00pm</Finish_Time>
      <Total_Break_Time unit="minutes">60</Total_Break_Time>
      <Regular_Hours>8</Regular_Hours>
      <Overtime_Hours>1</Overtime_Hours>
      <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
      <Date>3/1/2018</Date>
      <Start_Time>9:00am</Start_Time>
      <Finish_Time>6:00pm</Finish_Time>
      <Total_Break_Time unit="minutes">60</Total_Break_Time>
      <Regular_Hours>8</Regular_Hours>
      <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
      <Date>4/1/2018</Date>
      <Start_Time>9:00am</Start_Time>
      <Finish_Time>6:00pm</Finish_Time>
      <Regular_Hours>8</Regular_Hours>
      <Overtime_Hours>1</Overtime_Hours>
      <Total_Hours>9</Total_Hours>
    </timesheet>

    <timesheet>
      <Date>5/1/2018</Date>
      <Start_Time>9:00am</Start_Time>
      <Finish_Time>6:00pm</Finish_Time>
      <Regular_Hours>8</Regular_Hours>
      <Overtime_Hours>1</Overtime_Hours>
      <Total_Hours>9</Total_Hours>
    </timesheet>
  </Dates_of_week period=" 01/01/18 - 07/01/18">
</Employee ID="E3">

```

```

</timesheet>

<timesheet>
    <Date>6/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Total_Hours>8</Total_Hours>
</timesheet>

<timesheet>
    <Date>7/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Total_Hours>8</Total_Hours>
</timesheet>

<Rates_per_hour currency = "euro">
    <rate_per_regular_hrs>30.00</rate_per_regular_hrs>
    <rate_per_overtime_hrs>40.00</rate_per_overtime_hrs>
    <rate_per_sick_hrs>30.00</rate_per_sick_hrs>
    <rate_per_vacation_hrs>30.00</rate_per_vacation_hrs>
    <rate_per_holiday_hrs>30.00</rate_per_holiday_hrs>
    <rate_per_other_hrs>35.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "59">
    <total_Regular_Hours>48</total_Regular_Hours>
    <total_Overtime_Hours>3</total_Overtime_Hours>
    <total_sick_Hours>0</total_sick_Hours>
    <total_vacation_Hours>0</total_vacation_Hours>
    <total_holiday_Hours>8</total_holiday_Hours>
    <total_other_Hours>0</total_other_Hours>
</All_TotalHours>
<Tasks>
    <Task project = "P3" nameTask = "Software Design"/>
</Tasks>
</Dates_of_week>
</Employee>

</Employees>
</TimeCards>

```



## Αρχείο `timecards_new.dtd`

```
<?xml version="1.0" encoding="UTF-8" ?>

<!ELEMENT TimeCards (EnterpriseDtls,Projects,Employees)>
<!ELEMENT Projects (Project+)>
<!ELEMENT Project (#PCDATA)>
<!ELEMENT Employees (Employee+)>
<!ELEMENT EnterpriseDtls (Img)>
<!ELEMENT Employee (Name,Manager,Belongs_to_dept,Dates_of_week+)>
<!ELEMENT Dates_of_week (timesheet+,Rates_per_hour,All_TotalHours,Tasks)>
<!ELEMENT timesheet
(Date,Start_Time?,Finish_Time?,Total_Break_Time?,Regular_Hours?,Overtime_Hours?,Sick?,
Vacation?,Holiday?,Other?,Total_Hours)>
<!ELEMENT Rates_per_hour (rate_per_regular_hrs, rate_per_overtime_hrs, rate_per_sick_hrs,
rate_per_vacation_hrs, rate_per_holiday_hrs,rate_per_other_hrs)>
<!ELEMENT All_TotalHours (total_Regular_Hours, total_Overtime_Hours, total_sick_Hours,
total_vacation_Hours, total_holiday_Hours, total_other_Hours)>
<!ELEMENT Tasks (Task*)>
<!ELEMENT Task EMPTY>

<!ELEMENT Img EMPTY>
<!ATTLIST EnterpriseDtls Enterprise_Name CDATA #IMPLIED>
<!ATTLIST EnterpriseDtls Address CDATA #IMPLIED>
<!ATTLIST Img src. ENTITY #REQUIRED>
<!NOTATION JPG SYSTEM "ShowJPG.exe">
<!ENTITY Picture SYSTEM "picture.jpg" NDATA JPG>

<!ELEMENT Name (#PCDATA)>
<!ELEMENT Manager (#PCDATA)>
<!ELEMENT Belongs_to_dept (#PCDATA)>
<!ELEMENT Date (#PCDATA)>
<!ELEMENT Start_Time (#PCDATA)>
<!ELEMENT Finish_Time (#PCDATA)>
<!ELEMENT Total_Break_Time (#PCDATA)>
<!ELEMENT Regular_Hours (#PCDATA)>
<!ELEMENT Overtime_Hours (#PCDATA)>
<!ELEMENT Sick (#PCDATA)>
<!ELEMENT Vacation (#PCDATA)>
<!ELEMENT Holiday (#PCDATA)>
<!ELEMENT Other (#PCDATA)>
<!ELEMENT Total_Hours (#PCDATA)>
<!ELEMENT rate_per_regular_hrs (#PCDATA)>
<!ELEMENT rate_per_overtime_hrs (#PCDATA)>
<!ELEMENT rate_per_sick_hrs (#PCDATA)>
```

```
<!ATTLIST Employee ID ID #REQUIRED>
<!ATTLIST Employee Employee_type (permanent | temporary) #IMPLIED>
<!ATTLIST Total_Break_Time unit CDATA #REQUIRED>
<!ATTLIST Other_type (work_from_home | be_in_Seminar | work_at_Customer)
"work_from_home">
<!ATTLIST Rates_per_hour currency (euro | USA_dollar) #IMPLIED>
<!ATTLIST All_TotalHours hours CDATA #REQUIRED>

<!ATTLIST Project name CDATA #REQUIRED>
<!ATTLIST Project project_ID ID #REQUIRED>
<!ATTLIST Task project IDREF #IMPLIED>

<!ATTLIST Task nameTask CDATA #REQUIRED>
<!ATTLIST Dates_of_week period CDATA #REQUIRED>
```

```

        <xsd:sequence>
            <xsd:element ref = "Img" minOccurs = "1" maxOccurs = "1"/>
        </xsd:sequence>
        <xsd:attribute name="Enterprise_Name" type="xsd:string" use="optional"/>
        <xsd:attribute name="Address" type="xsd:string" use="optional"/>
    </xsd:complexType>
</xsd:element>

<xsd:element name = "Projects">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref = "Project" minOccurs = "1" maxOccurs = "unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name = "Employees">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref = "Employee" minOccurs = "1" maxOccurs = "unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name = "Employee">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref = "Name" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "Manager" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "Belongs_to_dept" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "Dates_of_week" minOccurs = "1" maxOccurs = "unbounded"/>
        </xsd:sequence>

        <xsd:attribute name="ID" type="xsd:string" use="required"/>

        <xsd:attribute name="Employee_type" use="optional">
            <xsd:simpleType>
                <xsd:restriction base = "xsd:string">
                    <xsd:enumeration value = "permanent"/>
                    <xsd:enumeration value = "temporary"/>
                </xsd:restriction>
            </xsd:simpleType>
        </xsd:attribute>
    </xsd:complexType>

```

</xsd:element>

```
<xsd:element name = "Dates_of_week">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref = "timesheet" minOccurs = "1" maxOccurs = "unbounded"/>
      <xsd:element ref = "Rates_per_hour" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "All_TotalHours" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "Tasks" minOccurs = "1" maxOccurs = "1"/>
    </xsd:sequence>
    <xsd:attribute name="period" type="xsd:string" use="required"/>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name = "timesheet">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref = "Date" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "Start_Time" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Finish_Time" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Total_Break_Time" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Regular_Hours" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Overtime_Hours" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Sick" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Vacation" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Holiday" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Other" minOccurs = "0" maxOccurs = "1"/>
      <xsd:element ref = "Total_Hours" minOccurs = "0" maxOccurs = "1"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name = "Rates_per_hour">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element ref = "rate_per_regular_hrs" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "rate_per_overtime_hrs" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "rate_per_sick_hrs" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "rate_per_vacation_hrs" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "rate_per_holiday_hrs" minOccurs = "1" maxOccurs = "1"/>
      <xsd:element ref = "rate_per_other_hrs" minOccurs = "1" maxOccurs = "1"/>
    </xsd:sequence>
    <xsd:attribute name="currency" use="optional">
    <xsd:simpleType>
```

```

        <xsd:restriction base = "xsd:string">
            <xsd:enumeration value = "euro"/>
            <xsd:enumeration value = "USA_dollar"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:attribute>
</xsd:complexType>
</xsd:element>

<xsd:element name = "All_TotalHours">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref = "total_Regular_Hours" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "total_Overtime_Hours" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "total_sick_Hours" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "total_vacation_Hours" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "total_holiday_Hours" minOccurs = "1" maxOccurs = "1"/>
            <xsd:element ref = "total_other_Hours" minOccurs = "1" maxOccurs = "1"/>
        </xsd:sequence>
        <xsd:attribute name="hours" type="xsd:string" use="required"/>
    </xsd:complexType>
</xsd:element>

<xsd:element name = "Tasks">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref = "Task" minOccurs = "0" maxOccurs = "unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

    <xsd:element name="Img">
        <xsd:complexType>
            <xsd:attribute name="src." use="required">
                <xsd:simpleType id="ENTITY">
                    <xsd:restriction base="xsd:NCName"/>
                </xsd:simpleType>
            </xsd:attribute>
        </xsd:complexType>
    </xsd:element>
<xsd:element name = "Project">
    <xsd:complexType>
        <xsd:attribute name="name" type="xsd:string" use="required"/>
        <xsd:attribute name="project_ID" type="xsd:string" use="required"/>
    </xsd:complexType>
</xsd:element>

```

```

        </xsd:complexType>
    </xsd:element>

    <xsd:element name = "Name" type = "xsd:string"/>
    <xsd:element name = "Manager" type = "xsd:string"/>
    <xsd:element name = "Belongs_to_dept" type = "xsd:string"/>
    <xsd:element name = "Date" type = "xsd:string"/>
    <xsd:element name = "Start_Time" type = "xsd:string"/>
    <xsd:element name = "Finish_Time" type = "xsd:string"/>
    <xsd:element name = "Total_Break_Time">
        <xsd:complexType>
            <xsd:simpleContent>
                <xsd:extension base = "xsd:string">
                    <xsd:attribute name="unit" type="xsd:string" use="required"/>
                </xsd:extension>
            </xsd:simpleContent>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name = "Regular_Hours" type = "xsd:string"/>
    <xsd:element name = "Overtime_Hours" type = "xsd:string"/>
    <xsd:element name = "Sick" type = "xsd:string"/>
    <xsd:element name = "Vacation" type = "xsd:string"/>
    <xsd:element name = "Holiday" type = "xsd:string"/>
    <xsd:element name = "Other">
        <xsd:complexType>
            <xsd:simpleContent>
                <xsd:extension base = "xsd:string">
                    <xsd:attribute name="type" use = "optional">
                        <xsd:simpleType>
                            <xsd:restriction base = "xsd:string">
                                <xsd:enumeration value = "work_from_home"/>
                                <xsd:enumeration value = "be_in_Seminar"/>
                                <xsd:enumeration value = "work_at_Customer"/>
                            </xsd:restriction>
                        </xsd:simpleType>
                    </xsd:attribute>
                </xsd:extension>
            </xsd:simpleContent>
        </xsd:complexType>
    </xsd:element>
    <xsd:element name = "Total_Hours" type = "xsd:string"/>
    <xsd:element name = "rate_per_regular_hrs" type = "xsd:string"/>
    <xsd:element name = "rate_per_overtime_hrs" type = "xsd:string"/>
    <xsd:element name = "rate_per_sick_hrs" type = "xsd:string"/>
    <xsd:element name = "rate_per_vacation_hrs" type = "xsd:string"/>
    <xsd:element name = "rate_per_holiday_hrs" type = "xsd:string"/>

```

```

<xsd:element name = "rate_per_other_hrs" type = "xsd:string"/>
<xsd:element name = "total_Regular_Hours" type = "xsd:string"/>
<xsd:element name = "total_Overtime_Hours" type = "xsd:string"/>
<xsd:element name = "total_sick_Hours" type = "xsd:string"/>
<xsd:element name = "total_vacation_Hours" type = "xsd:string"/>
<xsd:element name = "total_holiday_Hours" type = "xsd:string"/>
<xsd:element name = "total_other_Hours" type = "xsd:string"/>
<xsd:element name="Task">
    <xsd:complexType>
        <xsd:attribute name="project" type="xsd:string" use="required"/>
        <xsd:attribute name="nameTask" type="xsd:string" use="required"/>
    </xsd:complexType>
</xsd:element>
</xsd:schema>

```

**\*Για τη σύνδεση του αρχείου .xml με το παραπάνω αρχείο .xsd, στην αρχή του αρχείου timecards\_new.xml προσθέτουμε:**

```

<?xml version="1.0" encoding="UTF-8" ?>
<TimeCards
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="timecards_new.xsd">
.....

```

**5)**

**αρχείο timecards\_new2.xml**

```

<?xml version="1.0" encoding="UTF-8" ?>

<!DOCTYPE TimeCards SYSTEM "timecards_new2.dtd">

<TimeCards>
    <EnterpriseDtls Enterprise_Name = "Enter Company" Address = "Antigonis 25, 15235, Athens, Greece">
        <Img src="Picture"/>
    </EnterpriseDtls>

    <Projects>
        <Project project_ID = "P1" name = "Website Rollout"/>
        <Project project_ID = "P2" name = "Admin"/>
        <Project project_ID = "P3" name = "Advertising"/>
    </Projects>

    <Employees>
        <Employee ID = "E1">

```

```

<Name>Eleftheria Mitsi</Name>
<Manager>George Papadopoulos</Manager>
<Belongs_to_dept>IT Department</Belongs_to_dept>
<Dates_of_week period=" 01/01/18 - 07/01/18">
  <timesheet>
    <Date>1/1/2018</Date>
    <Holiday>8</Holiday>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>2/1/2018</Date>
    <Sick>8</Sick>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>3/1/2018</Date>
    <Vacation>8</Vacation>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>4/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>5/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Other type = "work_from_home">10</Other>
    <Total_Hours>10</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>6/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>7:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">0</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>

```



```

        <Overtime_Hours>2</Overtime_Hours>
        <Total_Hours>10</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>7/1/2018</Date>
        <Start_Time>8:00am</Start_Time>
        <Finish_Time>7:00pm</Finish_Time>
        <Other type = "be_in_Seminar">11</Other>
        <Total_Hours>11</Total_Hours>
    </timesheet>

    <Rates_per_hour currency = "euro">
        <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
        <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>20.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "64">
        <total_Regular_Hours>16</total_Regular_Hours>
        <total_Overtime_Hours>3</total_Overtime_Hours>
        <total_sick_Hours>8</total_sick_Hours>
        <total_vacation_Hours>8</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>21</total_other_Hours>
    </All_TotalHours>

    <Tasks>
    <Task project = "P1" nameTask = "Off site meetings" rate_of_achievement = "30%">
        <assessment grade = "4">
            <manager_name>Mark Johnson</manager_name>
            <comment>...</comment>
        </assessment>
    </Task>
    <Task project = "P2" nameTask = "Analysis Complete" rate_of_achievement = "50%"
    level_of_difficulty = "2">
        <assessment grade = "6">
            <manager_name>John Johnson</manager_name>
            <comment>...</comment>
        </assessment>
    </Task>
    </Tasks>
</Dates_of_week>

```

```

<Dates_of_week period = " 08/01/2018 - 14/01/18 ">
  <timesheet>
    <Date>8/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>9/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>10/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>11/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>12/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

```

```

<timesheet>
  <Date>13/1/2018</Date>
  <Holiday>8</Holiday>
  <Total_Hours>8</Total_Hours>
</timesheet>

<timesheet>
  <Date>14/1/2018</Date>
  <Holiday>8</Holiday>
  <Total_Hours>8</Total_Hours>
</timesheet>

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
  <total_Regular_Hours>40</total_Regular_Hours>
  <total_Overtime_Hours>4</total_Overtime_Hours>
  <total_sick_Hours>0</total_sick_Hours>
  <total_vacation_Hours>0</total_vacation_Hours>
  <total_holiday_Hours>16</total_holiday_Hours>
  <total_other_Hours>0</total_other_Hours>
</All_TotalHours>
<Tasks>
  <Task project = "P1" nameTask = "Upload Website Changes"
rate_of_achievement = "80%">
    <assessment grade = "5">
      <manager_name>George
Huffman</manager_name>
      <comment>...</comment>
    </assessment>
  </Task>
</Tasks>
</Dates_of_week>

</Employee>

<Employee ID = "E2">
  <Name>Stiliani Lamda</Name>
  <Manager>Leonidas Kourvaras</Manager>
  <Belongs_to_dept>IT Department</Belongs_to_dept>

```

```

<Dates_of_week period=" 01/01/18 - 07/01/18">
  <timesheet>
    <Date>1/1/2018</Date>
    <Holiday>8</Holiday>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>2/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>3/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Total_Hours>8</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>4/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Other type = "work_at_Customer">10</Other>
    <Total_Hours>10</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>5/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Total_Hours>9</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>6/1/2018</Date>
    <Vacation>8</Vacation>

```

```

        <Total_Hours>8</Total_Hours>
    </timesheet>

    <timesheet>
        <Date>7/1/2018</Date>
        <Vacation>8</Vacation>
        <Total_Hours>8</Total_Hours>
    </timesheet>

    <Rates_per_hour currency = "euro">
        <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
        <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>20.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "60">
        <total_Regular_Hours>24</total_Regular_Hours>
        <total_Overtime_Hours>2</total_Overtime_Hours>
        <total_sick_Hours>0</total_sick_Hours>
        <total_vacation_Hours>16</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>10</total_other_Hours>
    </All_TotalHours>

    <Tasks>
    <Task project = "P3" nameTask = "Software Design" rate_of_achievement = "80%">
        <assessment grade = "1">
            <manager_name>Mike Galanis</manager_name>
            <comment>...</comment>
        </assessment>
    </Task>
    </Tasks>

</Dates_of_week>

</Employee>

<Employee ID="E3">
    <Name>Maria Sotiriou</Name>
    <Manager>George Mandras</Manager>
    <Belongs_to_dept>Advertising Department</Belongs_to_dept>
    <Dates_of_week period=" 01/01/18 - 07/01/18">
        <timesheet>
            <Date>1/1/2018</Date>
            <Holiday>8</Holiday>

```

```
<Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>2/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>3/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>4/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>6/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Total_Hours>8</Total_Hours>
```

```

</timesheet>

<timesheet>
  <Date>7/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Total_Hours>8</Total_Hours>
</timesheet>

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>30.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>40.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>30.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>30.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>30.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>35.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "59">
  <total_Regular_Hours>48</total_Regular_Hours>
  <total_Overtime_Hours>3</total_Overtime_Hours>
  <total_sick_Hours>0</total_sick_Hours>
  <total_vacation_Hours>0</total_vacation_Hours>
  <total_holiday_Hours>8</total_holiday_Hours>
  <total_other_Hours>0</total_other_Hours>
</All_TotalHours>

<Tasks>
  <Task project = "P3" nameTask = "Software Design" rate_of_achievement = "50%">
    <assessment grade = "3">
      <manager_name>Lara Johnson</manager_name>
      <comment>...</comment>
    </assessment>
  </Task>
</Tasks>
</Dates_of_week>
</Employee>
</Employees>
</TimeCards>

```

## αρχείο timecards\_new2.dtd

```
<?xml version="1.0" encoding="UTF-8" ?>

<!ELEMENT TimeCards (EnterpriseDtls,Projects,Employees)>
<!ELEMENT Projects (Project+)>
<!ELEMENT Project (#PCDATA)>
<!ELEMENT Employees (Employee+)>
<!ELEMENT EnterpriseDtls (Img)>
<!ELEMENT Employee (Name,Manager,Belongs_to_dept,Dates_of_week+)>
<!ELEMENT Dates_of_week (timesheet+,Rates_per_hour,All_TotalHours,Tasks)>
<!ELEMENT timesheet
(Date,Start_Time?,Finish_Time?,Total_Break_Time?,Regular_Hours?,Overtime_Hours?,Sick?,
Vacation?,Holiday?,Other?,Total_Hours)>
<!ELEMENT Rates_per_hour
(rate_per_regular_hrs,rate_per_overtime_hrs,rate_per_sick_hrs,rate_per_vacation_hrs,
rate_per_holiday_hrs,rate_per_other_hrs)>
<!ELEMENT All_TotalHours
(total_Regular_Hours,total_Overtime_Hours,total_sick_Hours,total_vacation_Hours,
total_holiday_Hours, total_other_Hours)>
<!ELEMENT Tasks (Task*)>
<!ELEMENT Task (assessment)>

<!ELEMENT Img EMPTY>
<!ATTLIST EnterpriseDtls Enterprise_Name CDATA #IMPLIED>
<!ATTLIST EnterpriseDtls Address CDATA #IMPLIED>
<!ATTLIST Img src. ENTITY #REQUIRED>
<!NOTATION JPG SYSTEM "ShowJPG.exe">
<!ENTITY Picture SYSTEM "picture.jpg" NDATA JPG>

<!ELEMENT Name (#PCDATA)>
<!ELEMENT Manager (#PCDATA)>
<!ELEMENT Belongs_to_dept (#PCDATA)>
<!ELEMENT Date (#PCDATA)>
<!ELEMENT Start_Time (#PCDATA)>
<!ELEMENT Finish_Time (#PCDATA)>
<!ELEMENT Total_Break_Time (#PCDATA)>
<!ELEMENT Regular_Hours (#PCDATA)>
<!ELEMENT Overtime_Hours (#PCDATA)>
<!ELEMENT Sick (#PCDATA)>
<!ELEMENT Vacation (#PCDATA)>
<!ELEMENT Holiday (#PCDATA)>
<!ELEMENT Other (#PCDATA)>
<!ELEMENT Total_Hours (#PCDATA)>
<!ELEMENT rate_per_regular_hrs (#PCDATA)>
<!ELEMENT rate_per_overtime_hrs (#PCDATA)>
```



<!ELEMENT rate\_per\_sick\_hrs (#PCDATA)>  
<!ELEMENT rate\_per\_vacation\_hrs (#PCDATA)>  
<!ELEMENT rate\_per\_holiday\_hrs (#PCDATA)>  
<!ELEMENT rate\_per\_other\_hrs (#PCDATA)>  
<!ELEMENT total\_Regular\_Hours (#PCDATA)>  
<!ELEMENT total\_Overtime\_Hours (#PCDATA)>  
<!ELEMENT total\_sick\_Hours (#PCDATA)>  
<!ELEMENT total\_vacation\_Hours (#PCDATA)>  
<!ELEMENT total\_holiday\_Hours (#PCDATA)>  
<!ELEMENT total\_other\_Hours (#PCDATA)>  
<!ELEMENT assessment (manager\_name,comment?)>  
<!ELEMENT manager\_name (#PCDATA)>  
<!ELEMENT comment (#PCDATA)>

<!ATTLIST Employee ID ID #REQUIRED>  
<!ATTLIST Employee Employee\_type (permanent | temporary) #IMPLIED>  
<!ATTLIST Total\_Break\_Time unit CDATA #REQUIRED>  
<!ATTLIST Other type (work\_from\_home | be\_in\_Seminar | work\_at\_Customer)  
"work\_from\_home">  
<!ATTLIST Rates\_per\_hour currency (euro | USA\_dollar) #IMPLIED>  
<!ATTLIST All\_TotalHours hours CDATA #REQUIRED>

<!ATTLIST Project name CDATA #REQUIRED>  
<!ATTLIST Project project\_ID ID #REQUIRED>  
<!ATTLIST Task project IDREF #IMPLIED>

<!ATTLIST Task nameTask CDATA #REQUIRED>  
<!ATTLIST Dates\_of\_week period CDATA #REQUIRED>

<!ATTLIST Task level\_of\_difficulty (1 | 2 | 3 | 4 | 5) #IMPLIED>  
<!ATTLIST Task rate\_of\_achievement CDATA #REQUIRED>  
<!ATTLIST assessment grade (1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10) "5">

## 6) αρχείο `style.css`

```
Dates_of_week:before{
    display: table;
    content: attr(period);
    margin-top:1%;
}
Name
{
    font-weight: bolder;
    color: purple;
    display: block;
    margin-top:3%;
}
timesheet
{
    display: table-row;
    border: 1px solid gray;
}
Date
{
    display: table-cell;
    border: 1px solid gray;
}
Start_Time
{
    display: table-cell;
    border: 1px solid gray;
}
Finish_Time
{
    display: table-cell;
    border: 1px solid gray;
}
Total_Break_Time
{
    display: table-cell;
    border: 1px solid gray;
}
Regular_Hours
{
    display: table-cell;
    border: 1px solid gray;
}
Overtime_Hours
```

```

{
    display: table-cell;
    border: 1px solid gray;
}
Sick
{
    display: table-cell;
    border: 1px solid gray;
}
Vacation
{
    display: table-cell;
    border: 1px solid gray;
}
Holiday
{
    display: table-cell;
    border: 1px solid gray;
}
Other
{
    display: table-cell;
    border: 1px solid gray;
}
Total_Hours
{
    display: table-cell;
    border: 1px solid gray;
}
Rates_per_hour
{
    display: none;
    border: 1px solid gray;
}
rate_per_regular_hrs
{
    display: none;
    border: 1px solid gray;
}
rate_per_overtime_hours
{
    display: none;
    border: 1px solid gray;
}
rate_per_sick_hours
{
    display: none;

```

```

        border: 1px solid gray;
    }
    rate_per_vacation_hrs
    {
        display: none;
        border: 1px solid gray;
    }
    rate_per_holiday_hrs
    {
        display: none;
        border: 1px solid gray;
    }
    rate_per_other_hrs
    {
        display: none;
        border: 1px solid gray;
    }
    All_Total_Hours
    {
        display: none;
        border: 1px solid gray;
    }
    total_Regular_Hours
    {
        display: none;
        border: 1px solid gray;
    }
    total_Overtime_Hours
    {
        display: none;
        border: 1px solid gray;
    }
    total_sick_Hours
    {
        display: none;
        border: 1px solid gray;
    }
    total_vacation_Hours
    {
        display: none;
        border: 1px solid gray;
    }
    total_holiday_Hours
    {
        display: none;
        border: 1px solid gray;
    }

```

```

total_other_Hours
{
    display: none;
    border: 1px solid gray;
}
Manager{display: none;}

Belongs_to_dept{display: none;}

[period = " 01/01/18 - 07/01/18"]
{
    background: yellow;
    font-weight: bolder;
}
[period = " 08/01/2018 - 14/01/18 "]
{
    background: yellow;
    font-weight: bolder;
}

```

**Συνδεδεμένο αρχείο [timecards\\_new\\_withCSS.xml](#) :**

```

<?xml version="1.0" encoding="UTF-8" ?>
<?xml-stylesheet type="text/css" href="style.css"?>

<!DOCTYPE TimeCards SYSTEM "timecards_new.dtd">

<TimeCards>
    <EnterpriseDtls Enterprise_Name = "Enter Company" Address = "Antigonis 25, 15235, Athens, Greece">
        <Img src="Picture"/>
    </EnterpriseDtls>

    <Projects>
        <Project project_ID = "P1" name = "Website Rollout"/>
        <Project project_ID = "P2" name = "Admin"/>
        <Project project_ID = "P3" name = "Advertising"/>
    </Projects>

    <Employees>
        <Employee ID = "E1">
            <Name>Eleftheria Mitsi</Name>
            <Manager>George Papadopoulos</Manager>
            <Belongs_to_dept>IT Department</Belongs_to_dept>
            <Dates_of_week period=" 01/01/18 - 07/01/18">

```

```

<timesheet>
  <Date>Date</Date>
  <Start_Time>Start Time</Start_Time>
  <Finish_Time>Finish Time</Finish_Time>
  <Total_Break_Time>Total Break Time</Total_Break_Time>
  <Regular_Hours>Regular Hours</Regular_Hours>
  <Overtime_Hours>Overtime Hours</Overtime_Hours>
  <Sick>Sick</Sick>
  <Vacation>Vacation</Vacation>
  <Holiday>Holiday</Holiday>
  <Other type = "be_in_Seminar">Other</Other>
  <Total_Hours>Total Hours</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>1/1/2018</Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours></Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday>8</Holiday>
  <Other></Other>
  <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>2/1/2018</Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours></Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick>8</Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>3/1/2018</Date>
  <Start_Time></Start_Time>

```

```

    <Finish_Time></Finish_Time>
    <Total_Break_Time></Total_Break_Time>
    <Regular_Hours></Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation>8</Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>4/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>5/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes"></Total_Break_Time>
    <Regular_Hours></Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other type = "work_from_home">10</Other>
    <Total_Hours>10</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>6/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>7:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">0</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>2</Overtime_Hours>
    <Sick></Sick>

```

```

        <Vacation></Vacation>
        <Holiday></Holiday>
        <Other></Other>
        <Total_Hours>10</Total_Hours>
    </timesheet>

```

```

<timesheet>
    <Date>7/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>7:00pm</Finish_Time>
    <Total_Break_Time></Total_Break_Time>
    <Regular_Hours></Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other type = "be_in_Seminar">11</Other>
    <Total_Hours>11</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>Rates Per Hour</Total_Break_Time>
    <Regular_Hours>20.00</Regular_Hours>
    <Overtime_Hours>30.00</Overtime_Hours>
    <Sick>20.00</Sick>
    <Vacation>20.00</Vacation>
    <Holiday>20.00</Holiday>
    <Other type = "be_in_Seminar">20.00</Other>
    <Total_Hours></Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>All Total Hours</Total_Break_Time>
    <Regular_Hours>16</Regular_Hours>
    <Overtime_Hours>3</Overtime_Hours>
    <Sick>8</Sick>
    <Vacation>8</Vacation>
    <Holiday>8</Holiday>
    <Other type = "be_in_Seminar">21</Other>
    <Total_Hours>64</Total_Hours>

```



```

</timesheet>

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "64">
  <total_Regular_Hours>16</total_Regular_Hours>
  <total_Overtime_Hours>3</total_Overtime_Hours>
  <total_sick_Hours>8</total_sick_Hours>
  <total_vacation_Hours>8</total_vacation_Hours>
  <total_holiday_Hours>8</total_holiday_Hours>
  <total_other_Hours>21</total_other_Hours>
</All_TotalHours>
<Tasks>
  <Task project = "P1" nameTask = "Off site meetings"/>
  <Task project = "P2" nameTask = "Analysis Complete"/>
</Tasks>
</Dates_of_week>

<Dates_of_week period = " 08/01/2018 - 14/01/18 ">

  <timesheet>
    <Date>Date</Date>
    <Start_Time>Start Time</Start_Time>
    <Finish_Time>Finish Time</Finish_Time>
    <Total_Break_Time>Total Break Time</Total_Break_Time>
    <Regular_Hours>Regular Hours</Regular_Hours>
    <Overtime_Hours>Overtime Hours</Overtime_Hours>
    <Sick>Sick</Sick>
    <Vacation>Vacation</Vacation>
    <Holiday>Holiday</Holiday>
    <Other type = "be_in_Seminar">Other</Other>
    <Total_Hours>Total Hours</Total_Hours>
  </timesheet>

  <timesheet>
    <Date>8/1/2018</Date>
    <Start_Time>8:00am</Start_Time>

```

```

    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>9/1/2018</Date>
    <Start_Time>8:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>10/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit = "minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>11/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time></Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours>1</Overtime_Hours>
    <Sick></Sick>

```

```
<Vacation></Vacation>
<Holiday></Holiday>
<Other></Other>
<Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>12/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>13/1/2018</Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours></Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday>8</Holiday>
  <Other></Other>
  <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>14/1/2018</Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours></Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick>0</Sick>
  <Vacation>0</Vacation>
  <Holiday>8</Holiday>
  <Other>0</Other>
  <Total_Hours>8</Total_Hours>
</timesheet>
```

```

<timesheet>
  <Date></Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time>Rates Per Hour</Total_Break_Time>
  <Regular_Hours>20.00</Regular_Hours>
  <Overtime_Hours>30.00</Overtime_Hours>
  <Sick>20.00</Sick>
  <Vacation>20.00</Vacation>
  <Holiday>20.00</Holiday>
  <Other type = "be_in_Seminar">20.00</Other>
  <Total_Hours></Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date></Date>
  <Start_Time></Start_Time>
  <Finish_Time></Finish_Time>
  <Total_Break_Time>All Total Hours</Total_Break_Time>
  <Regular_Hours>40</Regular_Hours>
  <Overtime_Hours>4</Overtime_Hours>
  <Sick>0</Sick>
  <Vacation>0</Vacation>
  <Holiday>16</Holiday>
  <Other type = "be_in_Seminar">0</Other>
  <Total_Hours>60</Total_Hours>
</timesheet>

```

```

<Rates_per_hour currency = "euro">
  <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
  <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
  <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
  <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
  <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
  <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
  <total_Regular_Hours>40</total_Regular_Hours>
  <total_Overtime_Hours>4</total_Overtime_Hours>
  <total_sick_Hours>0</total_sick_Hours>
  <total_vacation_Hours>0</total_vacation_Hours>
  <total_holiday_Hours>16</total_holiday_Hours>

```

```

        <total_other_Hours>0</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P1" nameTask = "Upload Website Changes"/>
    </Tasks>
</Dates_of_week>

</Employee>

<Employee ID = "E2">
    <Name>Stiliani Lamda</Name>
    <Manager>Leonidas Kourvaras</Manager>
    <Belongs_to_dept>IT Department</Belongs_to_dept>
    <Dates_of_week period=" 01/01/18 - 07/01/18">

        <timesheet>
            <Date>Date</Date>
            <Start_Time>Start Time</Start_Time>
            <Finish_Time>Finish Time</Finish_Time>
            <Total_Break_Time>Total Break Time</Total_Break_Time>
            <Regular_Hours>Regular Hours</Regular_Hours>
            <Overtime_Hours>Overtime Hours</Overtime_Hours>
            <Sick>Sick</Sick>
            <Vacation>Vacation</Vacation>
            <Holiday>Holiday</Holiday>
            <Other type = "be_in_Seminar">Other</Other>
            <Total_Hours>Total Hours</Total_Hours>
        </timesheet>

        <timesheet>
            <Date>1/1/2018</Date>
            <Start_Time></Start_Time>
            <Finish_Time></Finish_Time>
            <Total_Break_Time></Total_Break_Time>
            <Regular_Hours></Regular_Hours>
            <Overtime_Hours></Overtime_Hours>
            <Sick>0</Sick>
            <Vacation></Vacation>
            <Holiday>8</Holiday>
            <Other></Other>
            <Total_Hours>8</Total_Hours>
        </timesheet>

        <timesheet>

```

```

<Date>2/1/2018</Date>
<Start_Time>8:00am</Start_Time>
<Finish_Time>6:00pm</Finish_Time>
<Total_Break_Time unit="minutes">60</Total_Break_Time>
<Regular_Hours>8</Regular_Hours>
<Overtime_Hours>1</Overtime_Hours>
<Sick></Sick>
<Vacation></Vacation>
<Holiday></Holiday>
<Other></Other>
<Total_Hours>9</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>3/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>4/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours></Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other type = "work_at_Customer">10</Other>
  <Total_Hours>10</Total_Hours>
</timesheet>

```

```

<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>8:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>

```

```

        <Overtime_Hours>1</Overtime_Hours>
        <Sick></Sick>
        <Vacation></Vacation>
        <Holiday></Holiday>
        <Other></Other>
        <Total_Hours>9</Total_Hours>
    </timesheet>

```

```

<timesheet>
    <Date>6/1/2018</Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time></Total_Break_Time>
    <Regular_Hours></Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation>8</Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date>7/1/2018</Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time></Total_Break_Time>
    <Regular_Hours></Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation>8</Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>Rates Per Hour</Total_Break_Time>
    <Regular_Hours>20.00</Regular_Hours>
    <Overtime_Hours>30.00</Overtime_Hours>
    <Sick>20.00</Sick>
    <Vacation>20.00</Vacation>
    <Holiday>20.00</Holiday>

```

```

        <Other type = "be_in_Seminar">20.00</Other>
        <Total_Hours></Total_Hours>
    </timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>All Total Hours</Total_Break_Time>
    <Regular_Hours>24</Regular_Hours>
    <Overtime_Hours>2</Overtime_Hours>
    <Sick>0</Sick>
    <Vacation>16</Vacation>
    <Holiday>8</Holiday>
    <Other type = "be_in_Seminar">10</Other>
    <Total_Hours>60</Total_Hours>
</timesheet>

```

```

<Rates_per_hour currency = "euro">
    <rate_per_regular_hrs>20.00</rate_per_regular_hrs>
    <rate_per_overtime_hrs>30.00</rate_per_overtime_hrs>
    <rate_per_sick_hrs>20.00</rate_per_sick_hrs>
    <rate_per_vacation_hrs>20.00</rate_per_vacation_hrs>
    <rate_per_holiday_hrs>20.00</rate_per_holiday_hrs>
    <rate_per_other_hrs>20.00</rate_per_other_hrs>
</Rates_per_hour>
<All_TotalHours hours = "60">
    <total_Regular_Hours>24</total_Regular_Hours>
    <total_Overtime_Hours>2</total_Overtime_Hours>
    <total_sick_Hours>0</total_sick_Hours>
    <total_vacation_Hours>16</total_vacation_Hours>
    <total_holiday_Hours>8</total_holiday_Hours>
    <total_other_Hours>10</total_other_Hours>
</All_TotalHours>
<Tasks>
    <Task project = "P3" nameTask = "Software Design"/>
</Tasks>

```

```

</Dates_of_week>

```

```

</Employee>

```

```

<Employee ID="E3">
    <Name>Maria Sotiriou</Name>
    <Manager>George Mandras</Manager>

```



<Belongs\_to\_dept>Advertising Department</Belongs\_to\_dept>  
<Dates\_of\_week period=" 01/01/18 - 07/01/18">

<timesheet>

<Date>Date</Date>  
<Start\_Time>Start Time</Start\_Time>  
<Finish\_Time>Finish Time</Finish\_Time>  
<Total\_Break\_Time>Total Break Time</Total\_Break\_Time>  
<Regular\_Hours>Regular Hours</Regular\_Hours>  
<Overtime\_Hours>Overtime Hours</Overtime\_Hours>  
<Sick>Sick</Sick>  
<Vacation>Vacation</Vacation>  
<Holiday>Holiday</Holiday>  
<Other type = "be\_in\_Seminar">Other</Other>  
<Total\_Hours>Total Hours</Total\_Hours>

</timesheet>

<timesheet>

<Date>1/1/2018</Date>  
<Start\_Time></Start\_Time>  
<Finish\_Time></Finish\_Time>  
<Total\_Break\_Time></Total\_Break\_Time>  
<Regular\_Hours></Regular\_Hours>  
<Overtime\_Hours></Overtime\_Hours>  
<Sick>0</Sick>  
<Vacation>0</Vacation>  
<Holiday>8</Holiday>  
<Other>0</Other>  
<Total\_Hours>8</Total\_Hours>

</timesheet>

<timesheet>

<Date>2/1/2018</Date>  
<Start\_Time>8:00am</Start\_Time>  
<Finish\_Time>6:00pm</Finish\_Time>  
<Total\_Break\_Time unit="minutes">60</Total\_Break\_Time>  
<Regular\_Hours>8</Regular\_Hours>  
<Overtime\_Hours>1</Overtime\_Hours>  
<Sick></Sick>  
<Vacation></Vacation>  
<Holiday></Holiday>  
<Other></Other>  
<Total\_Hours>9</Total\_Hours>

</timesheet>

```
<timesheet>
  <Date>3/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time unit="minutes">60</Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours></Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>8</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>4/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>5/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
  <Total_Break_Time></Total_Break_Time>
  <Regular_Hours>8</Regular_Hours>
  <Overtime_Hours>1</Overtime_Hours>
  <Sick></Sick>
  <Vacation></Vacation>
  <Holiday></Holiday>
  <Other></Other>
  <Total_Hours>9</Total_Hours>
</timesheet>
```

```
<timesheet>
  <Date>6/1/2018</Date>
  <Start_Time>9:00am</Start_Time>
  <Finish_Time>6:00pm</Finish_Time>
```

```

        <Total_Break_Time unit="minutes">60</Total_Break_Time>
        <Regular_Hours>8</Regular_Hours>
        <Overtime_Hours></Overtime_Hours>
        <Sick></Sick>
        <Vacation></Vacation>
        <Holiday></Holiday>
        <Other></Other>
        <Total_Hours>8</Total_Hours>
    </timesheet>

```

```

<timesheet>
    <Date>7/1/2018</Date>
    <Start_Time>9:00am</Start_Time>
    <Finish_Time>6:00pm</Finish_Time>
    <Total_Break_Time unit="minutes">60</Total_Break_Time>
    <Regular_Hours>8</Regular_Hours>
    <Overtime_Hours></Overtime_Hours>
    <Sick></Sick>
    <Vacation></Vacation>
    <Holiday></Holiday>
    <Other></Other>
    <Total_Hours>8</Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>Rates Per Hour</Total_Break_Time>
    <Regular_Hours>20.00</Regular_Hours>
    <Overtime_Hours>30.00</Overtime_Hours>
    <Sick>20.00</Sick>
    <Vacation>20.00</Vacation>
    <Holiday>20.00</Holiday>
    <Other type = "be_in_Seminar">20.00</Other>
    <Total_Hours></Total_Hours>
</timesheet>

```

```

<timesheet>
    <Date></Date>
    <Start_Time></Start_Time>
    <Finish_Time></Finish_Time>
    <Total_Break_Time>All Total Hours</Total_Break_Time>
    <Regular_Hours>48</Regular_Hours>
    <Overtime_Hours>3</Overtime_Hours>
    <Sick>0</Sick>
    <Vacation>0</Vacation>

```

```

        <Holiday>8</Holiday>
        <Other type = "be_in_Seminar">0</Other>
        <Total_Hours>59</Total_Hours>
    </timesheet>

    <Rates_per_hour currency = "euro">
        <rate_per_regular_hrs>30.00</rate_per_regular_hrs>
        <rate_per_overtime_hrs>40.00</rate_per_overtime_hrs>
        <rate_per_sick_hrs>30.00</rate_per_sick_hrs>
        <rate_per_vacation_hrs>30.00</rate_per_vacation_hrs>
        <rate_per_holiday_hrs>30.00</rate_per_holiday_hrs>
        <rate_per_other_hrs>35.00</rate_per_other_hrs>
    </Rates_per_hour>
    <All_TotalHours hours = "59">
        <total_Regular_Hours>48</total_Regular_Hours>
        <total_Overtime_Hours>3</total_Overtime_Hours>
        <total_sick_Hours>0</total_sick_Hours>
        <total_vacation_Hours>0</total_vacation_Hours>
        <total_holiday_Hours>8</total_holiday_Hours>
        <total_other_Hours>0</total_other_Hours>
    </All_TotalHours>
    <Tasks>
        <Task project = "P3" nameTask = "Software Design"/>
    </Tasks>
    </Dates_of_week>
</Employee>

</Employees>
</TimeCards>

```

## Αποτέλεσμα στην οθόνη (μέσω browser Mozilla Firefox):

### Eleftheria Mitsi

01/01/18 - 07/01/18

Date	Start Time	Finish Time	Total Break Time	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other	Total Hours
1/1/2018								8		8
2/1/2018						8				8
3/1/2018							8			8
4/1/2018	8:00am	6:00pm	60	8	1					9
5/1/2018	8:00am	6:00pm							10	10
6/1/2018	9:00am	7:00pm	0	8	2					10
7/1/2018	8:00am	7:00pm							11	11
			Rates Per Hour	20.00	30.00	20.00	20.00	20.00	20.00	
			All Total Hours	16	3	8	8	8	21	64

08/01/2018 - 14/01/18

Date	Start Time	Finish Time	Total Break Time	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other	Total Hours
8/1/2018	8:00am	6:00pm	60	8	1					9
9/1/2018	8:00am	6:00pm	60	8	1					9
10/1/2018	9:00am	6:00pm	60	8						8
11/1/2018	9:00am	6:00pm		8	1					9
12/1/2018	9:00am	6:00pm		8	1					9
13/1/2018								8		8
14/1/2018						0	0	8	0	8
			Rates Per Hour	20.00	30.00	20.00	20.00	20.00	20.00	
			All Total Hours	40	4	0	0	16	0	60

### Stiliani Lamda

01/01/18 - 07/01/18

Date	Start Time	Finish Time	Total Break Time	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other	Total Hours
1/1/2018						0		8		8
2/1/2018	8:00am	6:00pm	60	8	1					9
3/1/2018	9:00am	6:00pm	60	8						8
4/1/2018	8:00am	6:00pm							10	10
5/1/2018	8:00am	6:00pm	60	8	1					9
6/1/2018							8			8
7/1/2018							8			8
			Rates Per Hour	20.00	30.00	20.00	20.00	20.00	20.00	
			All Total Hours	24	2	0	16	8	10	60

### Maria Sotiriou

01/01/18 - 07/01/18

Date	Start Time	Finish Time	Total Break Time	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other	Total Hours
1/1/2018						0	0	8	0	8
2/1/2018	8:00am	6:00pm	60	8	1					9
3/1/2018	9:00am	6:00pm	60	8						8
4/1/2018	9:00am	6:00pm		8	1					9
5/1/2018	9:00am	6:00pm		8	1					9
6/1/2018	9:00am	6:00pm	60	8						8
7/1/2018	9:00am	6:00pm	60	8						8
			Rates Per Hour	20.00	30.00	20.00	20.00	20.00	20.00	
			All Total Hours	48	3	0	0	8	0	59

7)

**α) αρχείο *present1.xsl*** (αντίστοιχο συνδεδεμένο αρχείο .xml: *erotima7a.xml*)

```
<?xml version="1.0"?>
```

```
<xsl:stylesheet version="2.0"
```

```
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
<xsl:template match = "/">
```

```
  <html>
```

```
    <body>
```

```
      <table>
```

```
        <tr>
```

```
          <th>-----Name-----</th>
```

```
          <th>-----Week-----</th>
```

```
          <th>Hrs</th>
```

```
        </tr>
```

```
      </table>
```

```
      <table border = "1">
```

```
        <xsl:apply-templates select = "TimeCards/Employees/Employee">
```

```
        </xsl:apply-templates>
```

```
      </table>
```

```
    </body>
```

```
  </html>
```

```
</xsl:template>
```

```
<xsl:template match = "Employee">
```

```
  <tr>
```

```
    <xsl:apply-templates select = "Name"/>
```

```
    <th><xsl:apply-templates select = "Dates_of_week/@period" mode = "period"/></th>
```

```
    <th><xsl:apply-templates select = "Dates_of_week/All_TotalHours/@hours" mode =  
"hours"/></th>
```

```
  </tr>
```

```
</xsl:template>
```

```
<xsl:template match = "Name">
```

```
  <th><xsl:apply-templates/></th>
```

```
</xsl:template>
```

```
<xsl:template match = "Dates_of_week/@period" mode = "period">
```

```
|<xsl:value-of select = "." /></tr>

</xsl:template>

<xsl:template match = "Dates_of_week/All_TotalHours/@hours" mode = "hours">

|<xsl:value-of select = "." /></tr>

</xsl:template>

</xsl:stylesheet>

|  |

|  |

```

**Αποτέλεσμα στην οθόνη** (μέσω browser Mozilla Firefox):

---

-----Name-----	-----Week-----	Hrs
Eleftheria Mitsi	01/01/18 - 07/01/18	64
	08/01/2018 - 14/01/18	60
Stiliani Lamda	01/01/18 - 07/01/18	60
Maria Sotiriou	01/01/18 - 07/01/18	59

**b) αρχείο [present2.xsl](#)** (αντίστοιχο συνδεδεμένο αρχείο .xml: erotima7b.xml)

```

<?xml version="1.0"?>

<xsl:stylesheet version="2.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:template match = "/">
  <html>
    <body>

      <table>
        <tr>
          <th>-----Name-----</th>
          <th>-----Week-----</th>
        </tr>

```

```

        </table>
    <table border = "1">
        <xsl:apply-templates select = "TimeCards/Employees/Employee">
            <xsl:sort select="Name"/>
        </xsl:apply-templates>
    </table>
</body>
</html>
</xsl:template>

<xsl:template match = "Employee">
    <tr>
        <xsl:apply-templates select = "Name"/>
        <th><xsl:apply-templates select = "Dates_of_week/@period" mode = "period"/></th>
    </tr>
</xsl:template>

<xsl:template match = "Name">

    <th><xsl:apply-templates/></th>

</xsl:template>

<xsl:template match = "Dates_of_week/@period" mode = "period">

    <tr><xsl:value-of select = "." /></tr>

</xsl:template>

</xsl:stylesheet>

```

**Αποτέλεσμα στην οθόνη** (μέσω browser Mozilla Firefox):

<b>Name</b>	<b>Week</b>
<b>Eleftheria Mitsi</b>	<b>01/01/18 - 07/01/18</b> <b>08/01/2018 - 14/01/18</b>
<b>Maria Sotiriou</b>	<b>01/01/18 - 07/01/18</b>
<b>Stiliani Lamda</b>	<b>01/01/18 - 07/01/18</b>



**c) αρχείο *present3.xsl*** (αντίστοιχο συνδεδεμένο αρχείο .xml: *erotima7c.xml*  
& αντίστοιχο συνδεδεμένο αρχείο .dtd: *timecards\_new7.dtd*)

```
<?xml version="1.0"?>
```

```
<xsl:stylesheet version="2.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
<xsl:template match="/">
<html>
    <head></head>
<body>
```

```
<table>
<tr>01-07/01/18</tr>
</table>
```

```
<table border = "1">
```

```
<tr bgcolor="#9acd32">
    <th>Name</th>
    <th>Hours</th>
</tr>
```

```
    <xsl:for-each select = "TimeCards/Employees/Employee">
        <xsl:sort select =
"TimeCards/Employees/Employee/Dates_of_week/All_TotalHours/@hours" order = "descending"/>
        <tr align = "right">
            <th><xsl:value-of select = "Name"/></th>
            <th><xsl:value-of select =
"Dates_of_week/All_TotalHours/@hours"/></th>
        </tr>
    </xsl:for-each>
</table>
```

```
<br/>
<br/>
<br/>
```

```
<table>
<tr>08-14/01/18</tr>
</table>
<table border = "1">
```

```

<tr bgcolor="#9acd32">
    <th>Name</th>
    <th>Hours</th>
</tr>

<xsl:for-each select = "TimeCards/Employees/Employee">
    <xsl:if test = "Dates_of_week[contains(@period,'08/01/2018-14/01/18')]" >
        <tr align = "right">
            <th><xsl:value-of select = "Name"/></th>
            <th><xsl:value-of select = "//@hours2"/></th>
        </tr>
    </xsl:if>
</xsl:for-each>
</table>

</body>
</html>
</xsl:template>

</xsl:stylesheet>

```

**Αποτέλεσμα στην οθόνη** (μέσω browser Mozilla Firefox):

01-07/01/18

Name	Hours
Eleftheria Mitsi	64
Stiliani Lamda	60
Maria Sotiriou	59

08-14/01/18

Name	Hours
Eleftheria Mitsi	60

**d) αρχείο *present4.xsl*** (αντίστοιχο συνδεδεμένο αρχείο .xml: *erotima7d.xml*)

```
<?xml version="1.0"?>
```

```
<xsl:stylesheet version="2.0"
```

```
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
<xsl:template match="/">
```

```
<html>
```

```
<head></head>
```

```
<body>
```

```
<table border = "1">
```

```
<tr>
```

```
<th>Name</th>
```

```
<th>Manager</th>
```

```
<th>Week</th>
```

```
<th>Regular Hours</th>
```

```
<th>Overtime Hours</th>
```

```
<th>Sick</th>
```

```
<th>Vacation</th>
```

```
<th>Holiday </th>
```

```
<th>Other</th>
```

```
</tr>
```

```
<xsl:for-each select = "TimeCards/Employees/Employee">
```

```
<tr align = "right">
```

```
<th><xsl:value-of select = "Name"/></th>
```

```
<th><xsl:value-of select = "Manager"/></th>
```

```
<xsl:for-each select = "Dates_of_week">
```

```
<xsl:if test = ".[contains(@period,'01/01/18 - 07/01/18')]">
```

```
<th><xsl:value-of select = "@period"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_Regular_Hours"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_Overtime_Hours"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_sick_Hours"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_vacation_Hours"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_holiday_Hours"/></th>
```

```
<th><xsl:value-of select = "All_TotalHours/total_other_Hours"/></th>
```

```
</xsl:if>
```

```
</xsl:for-each>
```

```
</tr>
```

```
</xsl:for-each>
</table>
```

```
<br/>
```

```
<table border = "1">
<tr>
  <th>Name</th>
  <th>Manager</th>
  <th>Week</th>
  <th>Regular Hours</th>
  <th>Overtime Hours</th>
  <th>Sick</th>
  <th>Vacation</th>
  <th>Holiday </th>
  <th>Other</th>
</tr>
```

```
<xsl:for-each select = "TimeCards/Employees/Employee">
  <tr align = "right">
    <th><xsl:value-of select = "Name"/></th>
    <th><xsl:value-of select = "Manager"/></th>

    <xsl:for-each select = "Dates_of_week">
      <xsl:if test = ".[contains(@period,'08/01/18 - 14/01/18')]">
        <th><xsl:value-of select = "@period"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_Regular_Hours"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_Overtime_Hours"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_sick_Hours"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_vacation_Hours"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_holiday_Hours"/></th>
        <th><xsl:value-of select = "All_TotalHours/total_other_Hours"/></th>
      </xsl:if>
    </xsl:for-each>
  </tr>
</xsl:for-each>
</table>
</body>
</html>
</xsl:template>

</xsl:stylesheet>
```

**Αποτέλεσμα στην οθόνη** (μέσω browser Mozilla Firefox):

Name	Manager	Week	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other
Eleftheria Mitsi	George Papadopoulos	01/01/18 - 07/01/18	16	3	8	8	8	21
Stiliani Lamda	Leonidas Kourvaras	01/01/18 - 07/01/18	24	2	0	16	8	10
Maria Sotiriou	George Mandras	01/01/18 - 07/01/18	48	3	0	0	8	0

Name	Manager	Week	Regular Hours	Overtime Hours	Sick	Vacation	Holiday	Other
Eleftheria Mitsi	George Papadopoulos	08/01/18 - 14/01/18	40	4	0	0	16	0
Stiliani Lamda	Leonidas Kourvaras							
Maria Sotiriou	George Mandras							

**e) αρχείο [present5.xsl](#)** (αντίστοιχο συνδεδεμένο αρχείο .xml: erotima7e.xml)

```
<?xml version="1.0"?>
```

```
<xsl:stylesheet version="2.0"
```

```
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
<xsl:template match="/">
```

```
<html>
```

```
<head></head>
```

```
<body>
```

```
<table border = "1">
```

```
<tr bgcolor="#9acd32">
```

```
<th>ID</th>
```

```
<th>Name</th>
```

```
<th>Manager</th>
```

```
<th>Department</th>
```

```
<th>Hours</th>
```

```
<th>Week</th>
```

```
</tr>
```

```
<xsl:if test="//@hours > 60">
```

```
<tr align = "right">
```

```
<th><xsl:value-of select = "@ID"/></th>
```

```
<th><xsl:value-of select = "Name"/></th>
```

```
<th><xsl:value-of select = "Manager"/></th>
```

```
<th><xsl:value-of select = "Belongs_to_dept"/></th>
```

```

<th><xsl:value-of select = "@hours"/></th>
<th><xsl:value-of select = "@period"/></th>
</tr>

</xsl:if>
</table>

</body>
</html>
</xsl:template>
</xsl:stylesheet>

```

**Αποτέλεσμα στην οθόνη** (μέσω browser Mozilla Firefox):

ID	Name	Manager	Department	Hours	Week
E1	Eleftheria Mitsi	George Papadopoulos	IT Department	64	01/01/18 - 07/01/18

## Βιβλιογραφία

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Holzner Steven (2009), *XML: A Beginner's Guide: Beyond the Basics with Ajax, XHTML, XPath 2.0, XSLT 2.0, and XQuery*, The McGraw Hill Companies, U.S.A.

Επιπλέον, χρησιμοποιήθηκαν ως βοηθητικό υλικό οι παρακάτω ιστοσελίδες:

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