

**REG NO. : 412422205009**

**NAME : AKASH RAJ L**

**SOURCE CODE :**

**parking.xml**

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="parking.xsl"?>
<parkingSystem xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:noNamespaceSchemaLocation="parking.xsd">

    <parkingLot>
        <lotID>AB101</lotID>
        <lotName>Main Street Lot</lotName>
        <capacity>200</capacity>
        <occupied>120</occupied>
        <available>80</available>
        <location>Main Street, Downtown</location>
        <ratePerHour>2.00</ratePerHour>
        <securityLevel>High</securityLevel>
        <type>Public</type>
        <operationalHours>24/7</operationalHours>
        <contactNumber>1234567890</contactNumber>
    </parkingLot>

    <parkingLot>
        <lotID>CD202</lotID>
        <lotName>Park Avenue Lot</lotName>
        <capacity>300</capacity>
        <occupied>150</occupied>
        <available>150</available>
        <location>Park Avenue, Uptown</location>
        <ratePerHour>1.50</ratePerHour>
        <securityLevel>Medium</securityLevel>
        <type>Private</type>
```

<operationalHours>6:00 - 22:00</operationalHours>  
<contactNumber>0987654321</contactNumber>  
</parkingLot>

<parkingLot>  
  <lotID>EF303</lotID>  
  <lotName>Sunset Boulevard Lot</lotName>  
  <capacity>250</capacity>  
  <occupied>100</occupied>  
  <available>150</available>  
  <location>Sunset Boulevard, West End</location>  
  <ratePerHour>3.00</ratePerHour>  
  <securityLevel>High</securityLevel>  
  <type>Public</type>  
  <operationalHours>24/7</operationalHours>  
  <contactNumber>1122334455</contactNumber>  
</parkingLot>

<parkingLot>  
  <lotID>GH404</lotID>  
  <lotName>Ocean Drive Lot</lotName>  
  <capacity>400</capacity>  
  <occupied>350</occupied>  
  <available>50</available>  
  <location>Ocean Drive, Coastal Area</location>  
  <ratePerHour>2.50</ratePerHour>  
  <securityLevel>Low</securityLevel>  
  <type>Private</type>  
  <operationalHours>7:00 - 23:00</operationalHours>  
  <contactNumber>6677889900</contactNumber>  
</parkingLot>

<parkingLot>  
  <lotID>IJ505</lotID>

<lotName>Central Park Lot</lotName>  
<capacity>150</capacity>  
<occupied>80</occupied>  
<available>70</available>  
<location>Central Park, Midtown</location>  
<ratePerHour>2.75</ratePerHour>  
<securityLevel>Medium</securityLevel>  
<type>Public</type>  
<operationalHours>5:00 - 22:00</operationalHours>  
<contactNumber>9988776655</contactNumber>  
</parkingLot>

<parkingLot>  
  <lotID>KL606</lotID>  
  <lotName>Elm Street Lot</lotName>  
  <capacity>180</capacity>  
  <occupied>130</occupied>  
  <available>50</available>  
  <location>Elm Street, Suburbia</location>  
  <ratePerHour>1.80</ratePerHour>  
  <securityLevel>High</securityLevel>  
  <type>Private</type>  
  <operationalHours>6:00 - 20:00</operationalHours>  
  <contactNumber>4455667788</contactNumber>  
</parkingLot>

<parkingLot>  
  <lotID>MN707</lotID>  
  <lotName>Highway 45 Lot</lotName>  
  <capacity>350</capacity>  
  <occupied>300</occupied>  
  <available>50</available>  
  <location>Highway 45, Outskirts</location>  
  <ratePerHour>1.50</ratePerHour>

```
<securityLevel>Low</securityLevel>
<type>Public</type>
<operationalHours>24/7</operationalHours>
<contactNumber>3344556677</contactNumber>
</parkingLot>
```

```
<parkingLot>
  <lotID>OP808</lotID>
  <lotName>Maple Grove Lot</lotName>
  <capacity>100</capacity>
  <occupied>60</occupied>
  <available>40</available>
  <location>Maple Grove, Suburbia</location>
  <ratePerHour>2.20</ratePerHour>
  <securityLevel>High</securityLevel>
  <type>Public</type>
  <operationalHours>6:00 - 22:00</operationalHours>
  <contactNumber>5566778899</contactNumber>
</parkingLot>
```

```
<parkingLot>
  <lotID>QR909</lotID>
  <lotName>Riverside Lot</lotName>
  <capacity>120</capacity>
  <occupied>100</occupied>
  <available>20</available>
  <location>Riverside Drive, Downtown</location>
  <ratePerHour>2.50</ratePerHour>
  <securityLevel>Medium</securityLevel>
  <type>Private</type>
  <operationalHours>8:00 - 22:00</operationalHours>
  <contactNumber>7788990011</contactNumber>
</parkingLot>
```

```
</parkingSystem>
```



```
        <xs:maxInclusive value="1000"/>
    </xs:restriction>
</xs:simpleType>
</xs:element>

<!-- Restriction: Occupied spaces must be between 0 and the capacity -->
<xs:element name="occupied">
    <xs:simpleType>
        <xs:restriction base="xs:int">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="1000"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>

<!-- Restriction: Available spaces calculated as capacity minus occupied -->
<xs:element name="available">
    <xs:simpleType>
        <xs:restriction base="xs:int">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="1000"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>

<!-- Restriction: Location must be between 5 and 100 characters -->
<xs:element name="location">
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:minLength value="5"/>
            <xs:maxLength value="100"/>
        </xs:restriction>
    </xs:simpleType>
</xs:element>
```

```
<!-- Restriction: Rate per hour between 0.50 and 10.00 -->
```

```
<xs:element name="ratePerHour">
```

```
  <xs:simpleType>
```

```
    <xs:restriction base="xs:decimal">
```

```
      <xs:minInclusive value="0.50"/>
```

```
      <xs:maxInclusive value="10.00"/>
```

```
      <xs:fractionDigits value="2"/>
```

```
    </xs:restriction>
```

```
  </xs:simpleType>
```

```
</xs:element>
```

```
<!-- Restriction: Security level can only be Low, Medium, or High -->
```

```
<xs:element name="securityLevel">
```

```
  <xs:simpleType>
```

```
    <xs:restriction base="xs:string">
```

```
      <xs:enumeration value="Low"/>
```

```
      <xs:enumeration value="Medium"/>
```

```
      <xs:enumeration value="High"/>
```

```
    </xs:restriction>
```

```
  </xs:simpleType>
```

```
</xs:element>
```

```
<!-- Restriction: Type can only be Public or Private -->
```

```
<xs:element name="type">
```

```
  <xs:simpleType>
```

```
    <xs:restriction base="xs:string">
```

```
      <xs:enumeration value="Public"/>
```

```
      <xs:enumeration value="Private"/>
```

```
    </xs:restriction>
```

```
  </xs:simpleType>
```

```
</xs:element>
```

```
<!-- Restriction: Operational hours must follow the pattern 24/7 or 'HH:MM - HH:MM' -->
```

```
<xs:element name="operationalHours">
```

```
  <xs:simpleType>
```

```
    <xs:restriction base="xs:string">
```

```
      <xs:pattern value="24/7|([0-9]{1,2}:[0-9]{2})\s?-\s?([0-9]{1,2}:[0-9]{2})"/>
```

```
    </xs:restriction>
```

```
  </xs:simpleType>
```

```
</xs:element>
```

```
<!-- Restriction: Contact number must be exactly 10 digits -->
```

```
<xs:element name="contactNumber">
```

```
  <xs:simpleType>
```

```
    <xs:restriction base="xs:string">
```

```
      <xs:pattern value="\d{10}"/>
```

```
    </xs:restriction>
```

```
  </xs:simpleType>
```

```
</xs:element>
```

```
</xs:sequence>
```

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

```
</xs:element>
```

```
</xs:sequence>
```

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

```
</xs:element>
```

```
</xs:schema>
```

## **parking.xsl**

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

```
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

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

```
    <html>
```

```
      <head>
```

```
        <title>Parking Management System</title>
```



```
<style>
  table {
    width: 100%;
    border-collapse: collapse;
  }
  table, th, td {
    border: 1px solid black;
  }
  th, td {
    padding: 8px;
    text-align: left;
  }
  th {
    background-color: #f2f2f2;
  }
</style>
```

```
</head>
```

```
<body>
```

```
<h2>Parking Management System</h2>
```

```
<table>
```

```
<tr>
```

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

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

```
<th>Capacity</th>
```

```
<th>Occupied</th>
```

```
<th>Available</th>
```

```
<th>Location</th>
```

```
<th>Rate/Hour</th>
```

```
<th>Security Level</th>
```

```
<th>Type</th>
```

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

```
<th>Contact Number</th>
```

```
</tr>
```

```
<xsl:for-each select="parkingSystem/parkingLot">
```

```

<xsl:if test="normalize-space(securityLevel) = 'Medium' and normalize-space(type) = 'Private'">
  <tr>
    <td><xsl:value-of select="lotID"/></td>
    <td><xsl:value-of select="lotName"/></td>
    <td><xsl:value-of select="capacity"/></td>
    <td><xsl:value-of select="occupied"/></td>
    <td><xsl:value-of select="available"/></td>
    <td><xsl:value-of select="location"/></td>
    <td><xsl:value-of select="ratePerHour"/></td>
    <td><xsl:value-of select="securityLevel"/></td>
    <td><xsl:value-of select="type"/></td>
    <td><xsl:value-of select="operationalHours"/></td>
    <td><xsl:value-of select="contactNumber"/></td>
  </tr>
</xsl:if>
</xsl:for-each>
</table>
</body>
</html>
</xsl:template>

```

</xsl:stylesheet>

## OUTPUT :

### 1. lotID

```

<lotID>AB1010</lotID>
'AB1010' violates length constraint of '5'.
The element 'lotID' with value 'AB1010' failed to parse.

```

### 2. lotName

```

<lotName>Main</lotName>
'Main' violates minLength constraint of '5'.
The element 'lotName' with value 'Main' failed to parse.

```

### 3. Capacity

```
<capacity>2000</capacity>
```

'2000' violates maxInclusive constraint of '1000'.  
The element 'capacity' with value '2000' failed to parse.

### 4. Occupied

```
<occupied>1200</occupied>
```

'1200' violates maxInclusive constraint of '1000'.  
The element 'occupied' with value '1200' failed to parse.

### 5. Available

```
<available>1001</available>
```

'1001' violates maxInclusive constraint of '1000'.  
The element 'available' with value '1001' failed to parse.

### 6. Location

```
<location>Main</location>
```

'Main' violates minLength constraint of '5'.  
The element 'location' with value 'Main' failed to parse.

### 7. ratePerHour

```
<ratePerHour>2.0005</ratePerHour>
```

'2.0005' violates fractionDigits constraint of '2'.  
The element 'ratePerHour' with value '2.0005' failed to parse.

### 8. securityLevel

```
<securityLevel>Ultra</securityLevel>
```

'Ultra' violates enumeration constraint of 'Low Medium High'.  
The element 'securityLevel' with value 'Ultra' failed to parse.

### 9. Type

```
<type>Protected</type>
```

'Protected' violates enumeration constraint of 'Public Private'.  
The element 'type' with value 'Protected' failed to parse.

### 10. operationalHours

```
<operationalHours>25/7</operationalHours>
```

'25/7' violates pattern constraint of '24/7|([0-9]{1,2}:([0-9]{2})\s?-([0-9]{1,2}:([0-9]{2}))'.  
The element 'operationalHours' with value '25/7' failed to parse.

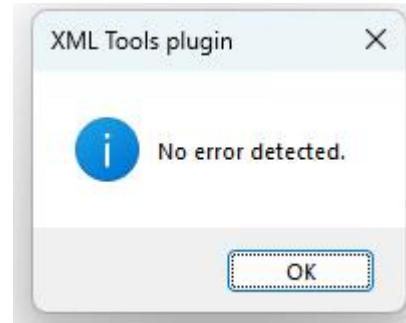
### 11. contactNumber

```
<contactNumber>123456789069</contactNumber>
```

'123456789069' violates pattern constraint of '\d{10}'.  
The element 'contactNumber' with value '123456789069' failed to parse.

## WITH NO ERRORS :

```
<parkingLot>
  <lotID>AB101</lotID>
  <lotName>Main Street Lot</lotName>
  <capacity>200</capacity>
  <occupied>120</occupied>
  <available>80</available>
  <location>Main Street, Downtown</location>
  <ratePerHour>2.0</ratePerHour>
  <securityLevel>High</securityLevel>
  <type>Public</type>
  <operationalHours>24/7</operationalHours>
  <contactNumber>1234567890</contactNumber>
</parkingLot>
```



## XSLT :

### Parking Management System

Lot ID	Lot Name	Capacity	Occupied	Available	Location	Rate/Hour	Security Level	Type	Operational Hours	Contact Number
AB101	Main Street Lot	200	120	80	Main Street, Downtown	2.00	High	Public	24/7	1234567890
CD202	Park Avenue Lot	300	150	150	Park Avenue, Uptown	1.50	Medium	Private	6:00 - 22:00	0987654321
EF303	Sunset Boulevard Lot	250	100	150	Sunset Boulevard, West End	3.00	High	Public	24/7	1122334455
GH404	Ocean Drive Lot	400	350	50	Ocean Drive, Coastal Area	2.50	Low	Private	7:00 - 23:00	6677889900
IJ505	Central Park Lot	150	80	70	Central Park, Midtown	2.75	Medium	Public	5:00 - 22:00	9988776655
KL606	Elm Street Lot	180	130	50	Elm Street, Suburbia	1.80	High	Private	6:00 - 20:00	4455667788
MN707	Highway 45 Lot	350	300	50	Highway 45, Outskirts	1.50	Low	Public	24/7	3344556677
OP808	Maple Grove Lot	100	60	40	Maple Grove, Suburbia	2.20	High	Public	6:00 - 22:00	5566778899
QR909	Riverside Lot	120	100	20	Riverside Drive, Downtown	2.50	Medium	Private	8:00 - 22:00	7788990011

## XSLT SELECTION WITH CONSTRAINTS (securityLevel="Medium" and type="Private"):

### Parking Management System

Lot ID	Lot Name	Capacity	Occupied	Available	Location	Rate/Hour	Security Level	Type	Operational Hours	Contact Number
CD202	Park Avenue Lot	300	150	150	Park Avenue, Uptown	1.50	Medium	Private	6:00 - 22:00	0987654321
QR909	Riverside Lot	120	100	20	Riverside Drive, Downtown	2.50	Medium	Private	8:00 - 22:00	7788990011