**Equipment Management Assignment**

1. **Create Equipments XML file.**

* **Equipments1.xml**

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

<Equipments>

<company>WNDSR</company>

<BussinessUnit>The Private Limited Liability Company </BussinessUnit>

<EquipmentDetail>

<EquipmentType>Rollers</EquipmentType>

<Status>New</Status>

<Quantity>5000units</Quantity>

<Duration>10days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-12T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Scrappers</EquipmentType>

<Status>Allocated</Status>

<Quantity>1000units</Quantity>

<Duration>5days</Duration>

<AllocatedQuantity>50units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-07T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Excavators</EquipmentType>

<Status>Available</Status>

<Quantity>5000units</Quantity>

<Duration>7days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-09T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

</Equipments>

* **Equipments2.xml**

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

<Equipments>

<company>QCOMP</company>

<BussinessUnit>The Public Limited Liability Company </BussinessUnit>

<EquipmentDetail>

<EquipmentType>Excavators</EquipmentType>

<Status>Allocated</Status>

<Quantity>10000units</Quantity>

<Duration>12days</Duration>

<AllocatedQuantity>500units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-14T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Excavators</EquipmentType>

<Status>Allocated</Status>

<Quantity>10000units</Quantity>

<Duration>12days</Duration>

<AllocatedQuantity>500units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-14T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Scrappers</EquipmentType>

<Status>New</Status>

<Quantity>5000units</Quantity>

<Duration>5days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-07T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Rollers</EquipmentType>

<Status>Available</Status>

<Quantity>7000units</Quantity>

<Duration>8days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-10T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

</Equipments>

* **Equipments3.xml**

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

<Equipments>

<company>TCOMP</company>

<BussinessUnit>The Partnership </BussinessUnit>

<EquipmentDetail>

<EquipmentType>Scrapper</EquipmentType>

<Status>Available</Status>

<Quantity>80000units</Quantity>

<Duration>12days</Duration>

<AllocatedQuantity>1000units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-14T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Excavators</EquipmentType>

<Status>New</Status>

<Quantity>7000units</Quantity>

<Duration>6days</Duration>

<AllocatedQuantity>500units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-08T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Rollers</EquipmentType>

<Status>Allocated</Status>

<Quantity>1000units</Quantity>

<Duration>2days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-04T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

</Equipments>

* **Equipments4.xml**

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

<Equipments>

<company>NORDM</company>

<BussinessUnit>The Co-operative Society </BussinessUnit>

<EquipmentDetail>

<EquipmentType>Rollers</EquipmentType>

<Status>Available</Status>

<Quantity>15000units</Quantity>

<Duration>10days</Duration>

<AllocatedQuantity>2000units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-12T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Excavators</EquipmentType>

<Status>Allocated</Status>

<Quantity>6000units</Quantity>

<Duration>5days</Duration>

<AllocatedQuantity>500units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-07T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

<EquipmentDetail>

<EquipmentType>Scrapper</EquipmentType>

<Status>New</Status>

<Quantity>3000units</Quantity>

<Duration>3days</Duration>

<AllocatedQuantity>100units</AllocatedQuantity>

<EquipmentStartDateTime>2002-08-02T09:00:00</EquipmentStartDateTime>

<EquipmentEndDateTime>2002-08-05T09:00:00</EquipmentEndDateTime>

</EquipmentDetail>

</Equipments>

1. **Insert Document into the MarkLogic and Insert Document into “Equipments” Collection**

xdmp:document-load("C:\Users\Amsapoorani\OneDrive - Itorizon\Equipment Management -marklogic Assessment\Equipments3.xml",

<options xmlns="xdmp:document-load">

<uri>/Equipment Management -marklogic Assessment/Equipments3.xml</uri>

<permissions>{xdmp:default-permissions()}</permissions>

<collections>

<collection>Equipment</collection>

</collections>

<format>xml</format>

</options>)

xdmp:document-load("C:\Users\Amsapoorani\OneDrive - Itorizon\Equipment Management -marklogic Assessment\Equipments2.xml",

<options xmlns="xdmp:document-load">

<uri>/Equipment Management -marklogic Assessment/Equipments2.xml</uri>

<permissions>{xdmp:default-permissions()}</permissions>

<collections>

<collection>Equipment</collection>

</collections>

<format>xml</format>

</options>)

xdmp:document-load("C:\Users\Amsapoorani\OneDrive - Itorizon\Equipment Management -marklogic Assessment\Equipments1.xml",

<options xmlns="xdmp:document-load">

<uri>/Equipment Management -marklogic Assessment/Equipments1.xml</uri>

<permissions>{xdmp:default-permissions()}</permissions>

<collections>

<collection>Equipment</collection>

</collections>

<format>xml</format>

</options>)

xdmp:document-load("C:\Users\Amsapoorani\OneDrive - Itorizon\Equipment Management -marklogic Assessment\Equipments4.xml",

<options xmlns="xdmp:document-load">

<uri>/Equipment Management -marklogic Assessment/Equipments4.xml</uri>

<permissions>{xdmp:default-permissions()}</permissions>

<collections>

<collection>Equipment</collection>

</collections>

<format>xml</format>

</options>)

1. **Write FLWOR query to get all Equipment Details from Equipment collection.**

**Query:**

xquery version "1.0-ml";

for $EquipmentDetail in collection("Equipment")/Equipments/EquipmentDetail

return $EquipmentDetail

1. **Write FLWOR query to get all Equipment Details from Equipments where Equipment Type is “Rollers”.**

**Query:**

xquery version "1.0-ml";

for $EquipmentDetail in collection("Equipment")/Equipments/EquipmentDetail

where $EquipmentDetail/EquipmentType="Rollers"

return $EquipmentDetail

1. **Write FLWOR query to get all Equipment Type and Allocated Quantity where Company is “WNDSR”.**

**Query:**

xquery version "1.0-ml";

for $Equipments in collection("Equipment")/Equipments

where $Equipments/company="WNDSR"

return ($Equipments/EquipmentDetail/EquipmentType,$Equipments/EquipmentDetail/AllocatedQuantity)

1. **Write FLWOR query to get all the Equipments Details where status is “Allocated”**

**Query:**

xquery version "1.0-ml";

for $EquipmentDetail in collection("Equipment")/Equipments/EquipmentDetail

where $EquipmentDetail/Status="Allocated"

return $EquipmentDetail

1. **Write FLWOR query to get all Equipment Type and count.**

**Query:1**

xquery version "1.0-ml";

for $Equipments in collection("Equipment")/Equipments

return <EquipmentType>{$Equipments/EquipmentDetail/EquipmentType}<Count>{count($Equipments/EquipmentDetail/EquipmentType)}</Count></EquipmentType>

**Query:2**

let $Equipment := collection("Equipment")

return <EquipmentType>{collection("Equipment")/Equipments/EquipmentDetail/EquipmentType}

<Count>{count(collection("Equipment")/Equipments/EquipmentDetail/EquipmentType)}</Count></EquipmentType>

1. **Write FLWOR query to get all Equipment Details grouped by “Equipment Type”.**

**Query:**

xquery version "1.0-ml";

let $EquipmentType := (

for $i in collection("Equipment")//EquipmentType

return $i

)

let $values := distinct-values($EquipmentType)

for $j in $values

return element EquipmentDetails {

for $i in collection("Equipment")//EquipmentDetail

where $i//EquipmentType/text() eq $j

return $i

}

1. **Write FLWOR query to update status to “Available” where EquipmentEndDateTime is less than the current date time.**

**Query:**

xquery version "1.0-ml";

for $EquipmentDetail in collection("Equipment")/Equipments/EquipmentDetail

let $datetime := current-dateTime()

where ($EquipmentDetail/EquipmentEndDateTime lt $datetime and $EquipmentDetail/Status="Available")

return $EquipmentDetail

1. **Write a Function which return Interval For given input start datetime, end datetime and interval duration.**

**Query:**

xquery version "1.0-ml";

declare function local:interval($start as xs:dateTime , $end as xs:dateTime , $interval as xs:dayTimeDuration, $atr as xs:integer){

if($start lt ($end - xs:dayTimeDuration(xs:duration($interval)) - xs:dayTimeDuration(xs:duration("PT1M"))))

then(element interval{ attribute atr{$atr},

element start{$start},

element end{$start + xs:dayTimeDuration(xs:duration($interval))- xs:dayTimeDuration(xs:duration("PT1M"))}

},local:interval($start + xs:dayTimeDuration(xs:duration($interval)), $end , $interval, $atr+1))

else(element interval{ attribute atr{$atr},

element start{$start},

element end{$end - xs:dayTimeDuration(xs:duration("PT1M"))}

})

};

local:interval(xs:dateTime("2022-08-03T00:00:00"),xs:dateTime("2022-08-10T00:00:00"),xs:dayTimeDuration("PT2H"), 1);

1. **Write a Function to convert input datetime into UTC datetime**

**Query:**

xquery version "1.0-ml";

declare function local:inputdatetime($datetime as xs:dateTime?)

as xs:dateTime? {

let $result := fn:adjust-dateTime-to-timezone($datetime - xs:dayTimeDuration("PT5H30M"), xs:dayTimeDuration("PT0H"))

return $result

};

let $datetime := xs:dateTime("2022-08-04T15:00:00")

return (local:inputdatetime($datetime ))