

1. Create a corresponding XML Schema for the relational schema below and explain your approach.

```
CREATE TABLE Employee (  
    EmployeeId smallint PRIMARY KEY,  
    Emp_Name varchar NOT NULL,  
    Manager smallint REFERENCES Employee (EmployeeId),  
    ProjectId smallint NOT NULL REFERENCES Project);  
  
CREATE TABLE Project (  
    ProjectId smallint PRIMARY KEY,  
    Proj_Name varchar, Proj_Mgr NOT NULL UNIQUE  
    REFERENCES Employee (EmployeeId));
```

Proposed answer.

```
<xs:complexType>  
<xs:sequence>  
<xs:element name="EMPLOYEE" minOccurs="0" maxOccurs="unbounded">  
    <xs:complexType>  
        <xs:attribute name="employeeId" type="xs:int"/>  
        <xs:attribute name="emp_name" type="xs:string" use="required"/>  
        <xs:attribute name="manager" type="xs:int"/>  
        <xs:attribute name="projectId" type="xs:int" use="required"/>  
    </xs:complexType>  
</xs:element>  
<xs:element name="PROJECT" minOccurs="0" maxOccurs="unbounded">  
    <xs:complexType>  
        <xs:attribute name="projectId" type="xs:int"/>  
        <xs:attribute name="proj_name" type="xs:string"/>  
        <xs:attribute name="proj_mgr" use="required"/>  
    </xs:complexType>  
</xs:element>  
</xs:sequence>  
</xs:complexType>  
  
<xs:key name="employeeId">  
    <xs:selector xpath="EMPLOYEE"/>  
    <xs:field xpath="@employeeId"/>  
</xs:key>  
<xs:keyref name="manager" refer="employeeId">  
    <xs:selector xpath="EMPLOYEE"/>  
    <xs:field xpath="@employeeId"/>  
</xs:keyref>  
<xs:key name="projectId">  
    <xs:selector xpath="PROJECT"/>  
    <xs:field xpath="@projectId"/>  
</xs:key>  
<xs:keyref name="proj_mgr" refer="employeeId">  
    <xs:selector xpath="PROJECT"/>
```

```
        <xs:field xpath="@proj_mgr"/>
</xs:keyref>
<xs:unique name="proj_mgr_unique">
    <xs:selector xpath="PROJECT"/>
    <xs:field xpath="@proj_mgr"/>
</xs:unique>
```