**Chapter 5**

**Exercises**

**<bank>**

**<account>**

<account\_number> A-101 </account\_number>

<branch\_name> Downtown </branch\_name>

<balance> 500 </balance>

**</account>**

**<account>**

<account\_number> A-102 </account\_number>

<branch\_name> Perryridge</branch\_name>

<balance> 400 </balance>

**</account>**

**<account>**

<account\_number> A-201</account\_number>

<branch\_name>Brighton </branch\_name>

<balance> 900 </balance>

**</account>**

**<customer>**

<customer\_name> Johnson </ customer\_name >

<customer\_street> Aima </ customer\_street >

<customer\_city> Palo Aito </ customer\_city >

**</customer>**

**<customer>**

<customer\_name> Hayes </ customer\_name >

<customer\_street>Main </ customer\_street >

<customer\_city> Harrison </ customer\_city >

**</customer>**

**<depositor>**

<account\_number> A-101 </account\_number>

<customer\_name> Johnson </customer\_name>

**</depositor>**

**<depositor>**

<account\_number> A-201 </account\_number>

<customer\_name> Johnson </customer\_name>

**</depositor>**

**<depositor>**

<account\_number> A-102 </account\_number>

<customer\_name> Hayes </customer\_name>

**</depositor>**

**</bank>**

Figure 3.1

1. Give an alternative representation of bank information containing the same data as in Firgure3.1, but using attributes instead of subelements. Also give the DTD for this representation .
2. Give the DTD for an XML representation of the following nested-relational schema.

*Emp=(ename, ChildrenSet multiset(Children), SkillSet multiset(Skills))*

*Children = (name, birthday)*

*Birthday = (day, month, year)*

*Skills = (type, ExmSet setoff(Exams))*

*Exams = (year, city)*

1. Write a query in Xpath on the DTD of exercise 2(last one) to list all skill types in Emp.
2. Write a query in Xquery on the XML representation in Figure 3.1 to find the total balance, across all accounts, at each branch.
3. Write the following queries in Xquery, assuming the DTD from exercise 2.

A Find the name of all employees who have a child who has a birthday in March.

B Find those employees who took an examination for the skill type “typing” in the city “Dayton”

C List all skill types in Emp.

Using Postsqlgre to finish the operation above.