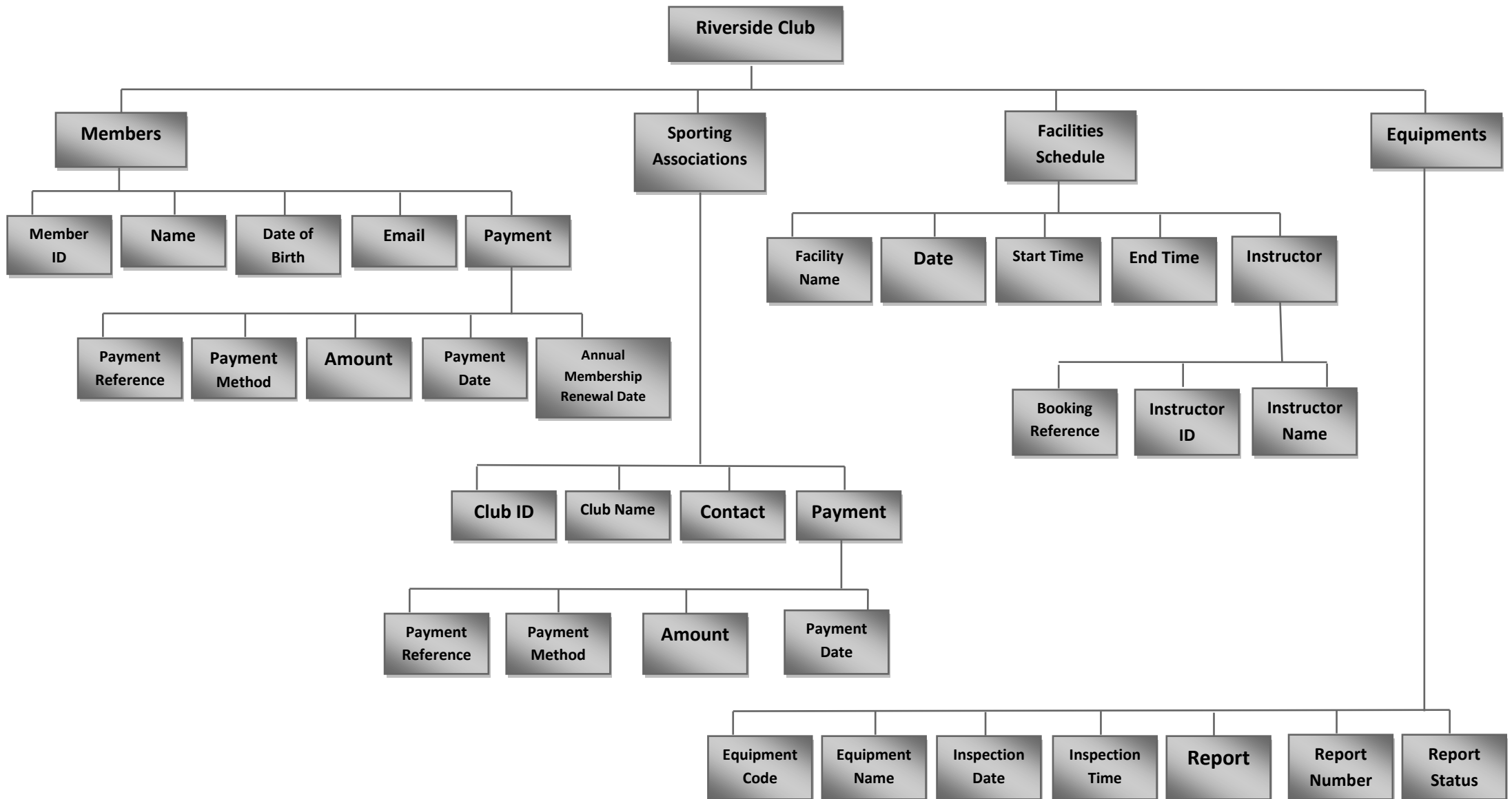


XML Schematic (diagram)



Document Type Definition – DTD

```
<!DOCTYPE riversideClub [  
  
  <!ELEMENT riversideClub( members, sporting-associations, facilities-  
    schedule, equipments)>  
  
  <!ELEMENT members (member-id , name, date-of-birth, Email, payment)>  
  
  <!ELEMENT member-id (#PCDATA)>  
  
  <!ELEMENT name (#PCDATA)>  
  
  <!ELEMENT date-of-birth (#PCDATA)>  
  
  <!ELEMENT email (#PCDATA)>  
  
  <!ELEMENT payment( payment-reference, payment-method, amount, payment-  
    date, annual-membership-renewal-date)>  
  
  <!ELEMENT payment-reference (#PCDATA)>  
  
  <!ELEMENT payment-method (#PCDATA)>  
  
  <!ELEMENT amount (#PCDATA)>  
  
  <!ELEMENT payment-date (#PCDATA)>  
  
  <!ELEMENT annual-membership-renewal-date (#PCDATA)>  
  
  <! ELEMENT sporting-associations (club-id, club-name, contact, payment)>  
  
  <!ELEMENT club-id (#PCDATA)>  
  
  <!ELEMENT club-name (#PCDATA)>  
  
  <!ELEMENT contact (#PCDATA)>  
  
  <!ELEMENT payment( payment-reference, payment-method, amount, payment-  
    date)>  
  
  <!ELEMENT payment-reference (#PCDATA)>  
  
  <!ELEMENT payment-method (#PCDATA)>  
  
  <!ELEMENT amount (#PCDATA)>  
  
  <!ELEMENT payment-date (#PCDATA)>  
  
  <! ELEMENT facilities-schedule (facility-name, date, start-time, end-time,  
    ( instructor?))>  
  
  <!ELEMENT facility-name (#PCDATA)>
```

```
<!ELEMENT date (#PCDATA)>
<!ELEMENT start-time (#PCDATA)>
<!ELEMENT end-time (#PCDATA)>
<!ELEMENT instructor (booking-reference, instructor-id, instructor-name)>
<!ELEMENT booking-reference (#PCDATA)>
<!ELEMENT instructor-id (#PCDATA)>
<!ELEMENT instructor-name (#PCDATA)>
<! ELEMENT equipments (equipment-code, equipment-name, inspection-date,
inspection-time, report, report-number, report-status )>
<!ELEMENT equipment-code (#PCDATA)>
<!ELEMENT equipment-name (#PCDATA)>
<!ELEMENT inspection-date (#PCDATA)>
<!ELEMENT inspection-time (#PCDATA)>
<!ELEMENT report (#PCDATA)>
<!ELEMENT report-number (#PCDATA)>
<!ELEMENT report-status (#PCDATA)>
    ]>
```

XML file structure instantiated

```
<?xml version="1.0" encoding="UTF-8"?>
<Riverside-Club>
  <members>
    <member-id>54886656</member-id>
    <name>Jack Walsh</name>
    <date-of-birth>1992-08-01</date-of-birth>
    <email>jackwalsh@yopmail.com</email>
    <payment>
      <payment-reference>P0020290</payment-reference>
      <payment-method>cash</payment-method>
      <amount>200</amount>
      <payment-date>2015-02-03</payment-date>
      <annual-membership-renewal-date>2016-02-03</annual-membership-renewal-date>
    </payment>
  </members>
  <members>
    <member-id>54886657</member-id>
    <name>Helen Brown</name>
    <date-of-birth>1995-09-25</date-of-birth>
    <email>Helen.Brown@yopmail.com</email>
    <payment>
      <payment-reference>P0020288</payment-reference>
      <payment-method>payment by card</payment-method>
      <amount>200</amount>
      <payment-date>2015-01-31</payment-date>
      <annual-membership-renewal-date>2016-01-31</annual-membership-renewal-date>
    </payment>
  </members>
  <members>
    <member-id>54886658</member-id>
    <name>Patricia Walsh</name>
    <date-of-birth>2000-05-18</date-of-birth>
    <email>patriciawalsh@yopmail.com</email>
    <payment>
      <payment-reference>P0020289</payment-reference>
      <payment-method>cash</payment-method>
      <amount>200</amount>
      <payment-date>2015-01-03</payment-date>
    </payment>
  </members>
</Riverside-Club>
```

```
<annual-membership-renewal-date>2016-01-03</annual-membership-renewal-date>
<payment>
</members>
<sporting-associations>
  <club-id>C015</club-id>
  <club-name>Galway Sports Club</club-name>
  <contact-details>0871519785</contact-details>
  <payment>
    <payment-reference>P0020291</payment-reference>
    <payment-method>payment by card </payment-method>
    <amount>500</amount>
    <payment-date>2015-06-30</payment-date>
  </payment>
</sporting-associations>
<facilities-schedule>
  <facility-name>squash.room2</facility-name>
  <date>2015-11-20</date>
  <start-time>13:00</start-time>
  <end-time>14:00</end-time>
  <instructor>
    <booking-reference>B000005831</booking-reference>
    <instructor-id>I0168</instructor-id>
    <instructor-name>Brenda Healy</instructor-name>
  </instructor>
</facilities-schedule>
<Equipments>
  <equipment-code>E458712</equipment-code>
  <equipment-name>tennis court net</equipment-name>
  <inspection-date>2015-03-15</inspection-date>
  <inspection-time>15:30</inspection-time>
  <report>Net in Tennis court number 1 needs maintenance</report>
  <report-number>R006844</report-number>
  <report-status>repaired</report-status>
</Equipments>
</Riverside-Club>
```

XPath Queries

Query1:

/Riverside Club/members/member id

```
<?xml version="1.0" encoding="UTF-8"?>
<Member id>54886656</member id>
<Member id>54886657</member id>
<Member id>54886658</member id>
```

Query2:

/Riverside Club/(members|sporting associations)/payment/amount

```
<?xml version="1.0" encoding="UTF-8"?>
<amount>200</amount>
<amount>200</amount>
<amount>200</amount>
<amount>500</amount>
```

Query3:

/Riverside Club/members[1]/member id

```
<?xml version="1.0" encoding="UTF-8"?>
<Member id>54886656</member id>
```

Query4:

//payment reference

```
<?xml version="1.0" encoding="UTF-8"?>
<payment reference>P0020290</payment reference>
<payment reference>P0020288</payment reference>
<payment reference>P0020289</payment reference>
<payment reference>P0020291</payment reference>
```

Query5:

/Riverside Club/instructor

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

```
<booking reference>B000005831</booking reference>
<instructor id>I0168</instructor id>
<instructor name>Brenda Healy</instructor name>
```

Query6:

//equipment/equipment code | //equipment/equipment name

```
<?xml version="1.0" encoding="UTF-8"?>
<equipment code>E458712</equipment code>
<equipment name>tennis court net</equipment name>
```

Query7:

/Riverside Club/members[last()]/email

```
<?xml version="1.0" encoding="UTF-8"?>
<email>patriciawalsh@yopmail.com</email>
```

Query8:

/Riverside Club/facilities schedule/facility name | //payment date

```
<?xml version="1.0" encoding="UTF-8"?>
<facility name>squash.room2</facility name>
<payment date>2015-02-03</payment date>
<payment date>2015-01-31</payment date>
<payment date>2015-01-03</payment date>
<payment date>2015-06-30</payment date>
```

Query9:

/Riverside Club/members/name [* = "Jack Walsh"]

```
<?xml version="1.0" encoding="UTF-8"?>
<name>Jack Walsh</name>
```

Query10:

/Riverside Club/members[not (name = "Jack Walsh")]

```
<?xml version="1.0" encoding="UTF-8"?>
<name>Helen Brown</name>
```

<name>Patricia Walsh</name>