

xquery version "1.0";

(: xquery1: for each user list the post he has on the wall

replies to these posts

replies to replies - represent 2 levels down :)

```
<ul>
{
  let $nl := "&#10;";
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  {data($nl)} {data($u/FirstName)}. {data($u/LastName)} has the posts:
  {
    for $p in doc("BookfaceDB.xml") /DB/Posts/Post
    where $u/@UserID = $p/OwnerID
    return
    <ul>
    -"{data($p/Content)}"
    {
      for $c in doc("BookfaceDB.xml") /DB/Comments/Comment
      where $p/@PostID = $c/PostID
      return
      <ul>
      {
        for $u1 in doc("BookfaceDB.xml") /DB/Users/User
        where $c/OwnerID = $u1/@UserID
        return
        <ul>
        reply by {data($u1/FirstName)}. {data($u1/LastName)}: "{data($c/Content)}"
        {
          for $cc in doc("BookfaceDB.xml") /DB/CComments/CComment
          where $c/@CommentID = $cc/CommentID
          return
          <ul>
          {
            for $u2 in doc("BookfaceDB.xml") /DB/Users/User
            where $cc/OwnerID = $u2/@UserID
            return
            <ul>
            reply to {data($u1/FirstName)}. {data($u1/LastName)}'s comment
            by {data($u2/FirstName)}. {data($u2/LastName)}: {data($cc/Content)}
            </ul>
          }
        }
      }
    }
  }
}
```

```
    </ul>
  }
  </ul>
}
</ul>
}
</ul>
}
```

xquery version "1.0";

(: xquery2: for each user list the posts he liked
the other users who also liked that post :)

```
<ul>
{
  let $nl := "&#10;"
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  {$nl} {data($u/FirstName)}.{data($u/LastName)} likes the posts:
  {
    for $pl in doc("BookfaceDB.xml") /DB/PostLikes/PostLike
    where $u/@UserID = $pl/OwnerID
    return
    <ul>
    {
      for $p in doc("BookfaceDB.xml") /DB/Posts/Post
      where $pl/PostID = $p/@PostID
      return
      <ul>
      {
        for $u1 in doc("BookfaceDB.xml") /DB/Users/User
        where $p/OwnerID = $u1/@UserID
        return
        <ul>
        -"{data($p/Content)}" on {data($u1/FirstName)}.{data($u1/LastName)} 's
```

wall, also liked by:

```

    {
      for $pl1 in doc("BookfaceDB.xml") /DB/PostLikes/PostLike
      where $pl/PostID = $pl1/PostID
      return
      <ul>
      {
        for $u2 in doc("BookfaceDB.xml") /DB/Users/User
        where $pl1/OwnerID = $u2/@UserID
        return
        <ul>
        {data($u2/FirstName)}.{data($u2/LastName)}
        </ul>
      }
    }
  </ul>
}
}
```

```
    </ul>
  }
  </ul>
}
</ul>
}
</ul>
}
```

```
xquery version "1.0";
```

```
(: xquery3: find the user with the highest number of friends :)
```

```
<ul>
{
  let $nl := "&#10;"
  let $maxf := max(for $u in doc("BookfaceDB.xml") /DB/Users/User
                    return
                    <ul>
                    {
                      let $fs := for $f in doc("BookfaceDB.xml")
/DB/Friends/Friend
                                where $u/@UserID =
                                $f/OwnerID
                                return $f
                      return count($fs)
                    }
                    </ul>
)
  return
  <ul>
  {
    for $u in doc("BookfaceDB.xml") /DB/Users/User
    return
    <ul>
    {
      let $fs := for $f in doc("BookfaceDB.xml") /DB/Friends/Friend
                                where $u/@UserID =
                                $f/OwnerID
                                return $f
      return
      if (count($fs) eq $maxf)
      then
        <ul>
        {
          {data($u/FirstName)} {data($u/LastName)} has {data($maxf)} friends.
        }
        </ul>
      else ()
    }
    </ul>
  }
  </ul>
}
</ul>
```

```
xquery version "1.0";
```

(: xquery4: list all the connections up to three levels down of a user his friends
his friends' friends
their friends :)

```
<ul>
{
  let $nl := "&#10;";
  let $sp := "          ";
  let $sp1 := " ";
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  { $nl } {data($u/FirstName)}.{data($u/LastName)}'s friends:
  {
    for $f in doc("BookfaceDB.xml") /DB/Friends/Friend
    where $u/@UserID = $f/OwnerID
    return
    <ul>
    {
      for $u1 in doc("BookfaceDB.xml") /DB/Users/User
      where $f/UserID = $u1/@UserID
      return
      <ul>
      { $nl } {data($u1/FirstName)}.{data($u1/LastName)} { $nl } { $sp }
      {data($u1/FirstName)}.{data($u1/LastName)}'s friends:
      {
        for $f1 in doc ("BookfaceDB.xml") /DB/Friends/Friend
        where $u1/@UserID = $f1/OwnerID
        return
        <ul>
        {
          for $u2 in doc("BookfaceDB.xml") /DB/Users/User
          where $f1/UserID = $u2/@UserID
          return
          <ul>
          {data($u2/FirstName)}.{data($u2/LastName)},
          </ul>
        }
        </ul>
      }
      </ul>
    }
    their friends:
    {
```

```

for $ff1 in doc("BookfaceDB.xml") /DB/Friends/Friend
where $u1/@UserID = $ff1/OwnerID
return
<ul>
{
  for $uu2 in doc("BookfaceDB.xml") /DB/Users/User
  where $ff1/UserID = $uu2/@UserID
  return
  <ul>
  {
    for $ff in doc("BookfaceDB.xml") /DB/Friends/Friend
    where $u/@UserID = $ff/OwnerID
    return
    <ul>
    {
      for $uu1 in doc("BookfaceDB.xml") /DB/Users/User
      where $ff/UserID = $uu1/@UserID and $uu1/@UserID =
$uu2/@UserID

      return
      <ul>
      {data($uu1/FirstName)}.{data($uu1/LastName)}
      </ul>
    }
    </ul>
  }
  </ul>
}
</ul>
}
</ul>
}
</ul>
}
</ul>
}
</ul>
}
</ul>

```

```
xquery version "1.0";
```

(: xquery5: list all friends of a user
with their number of friends :)

```
<ul>
{
  let $nl := "&#10;"
  let $sp := " "
  let $sp1 := " "
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  { $nl } {data($u/FirstName)}.{data($u/LastName)}'s friends:
  {
    for $f in doc("BookfaceDB.xml") /DB/Friends/Friend
    where $u/@UserID = $f/OwnerID
    return
    <ul>
    {
      for $u1 in doc("BookfaceDB.xml") /DB/Users/User
      where $f/UserID = $u1/@UserID
      return
      <ul>
      { $nl } {data($u1/FirstName)}.{data($u1/LastName)} { $nl } { $sp }
      {data($u1/FirstName)}.{data($u1/LastName)} has
      {
        let $fs := for $f1 in doc ("BookfaceDB.xml") /DB/Friends/Friend
                     where $u1/@UserID = $f1/OwnerID
                     return $f1

        return
        <ul>
        {count($fs/UserID)} friends.
        </ul>
      }
    }
  }
  </ul>
}
</ul>
}
</ul>
}
```


xquery version "1.0";

(: xquery6: Construct the mailbox of a given user: list all emails with Message ID, Date, Subject, Sender and Receivers
number of replies to each message :)

```
<ul>
{
  let $nl := "&#10;";
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  {$nl} {data($u/FirstName)}.{data($u/LastName)} has the message: {$nl} Sent Email:
  {
    for $m in doc("BookfaceDB.xml") /DB/Messages/Message
    where $u/@UserID = $m/SenderID
    return
    <ul>
    {$nl} MessageID: {data($m/@MessageID)} {$nl} Subject: {data($m/Subject)} {$nl}
    Content: "{data($m/Content)}" {$nl} Date: {data($m/DateTime)} {$nl} Sender:
    {data($u/FirstName)}.{data($u/LastName)} {$nl} Receiver:
    {
      for $mr in doc("BookfaceDB.xml") /DB/MessageReceivers/MessageReceiver
      where $m/@MessageID = $mr/MessageID
      return
      <ul>
      {
        for $u1 in doc("BookfaceDB.xml") /DB/Users/User
        where $mr/ReceiverID = $u1/@UserID
        return
        <ul>
        {data($u1/FirstName)}.{data($u1/LastName)},
        </ul>
      }
    </ul>
  }
  </ul>
}
{
  let $mcs := for $mc in doc("BookfaceDB.xml") /DB/MComments/MComment
               where $m/@MessageID = $mc/MessageID
               return $mc

  return
  <ul>
  {$nl} It has {count($mcs/@MCommentID)} replies.
  </ul>
}
```

```

    }
  </ul>
}
{$nl} Inbox:
{
  for $mr in doc("BookfaceDB.xml") /DB/MessageReceivers/MessageReceiver
  where $u/@UserID = $mr/ReceiverID
  return
  <ul>
  {
    for $m in doc("BookfaceDB.xml") /DB/Messages/Message
    where $mr/MessageID = $m/@MessageID
    return
    <ul>
    {
      for $u1 in doc("BookfaceDB.xml") /DB/Users/User
      where $m/SenderID = $u1/@UserID
      return
      <ul>
      {$nl} MessageID: {data($m/@MessageID)} {$nl} Subject:
      {data($m/Subject)} {$nl} Content: "{data($m/Content)}" {$nl} Date: {data($m/DateTime)} {$nl}
      Sender: {data($u1/FirstName)}.{data($u1/LastName)} {$nl} Receiver:
      {
        for $mr1 in doc("BookfaceDB.xml")
/DB/MessageReceivers/MessageReceiver
        where $m/@MessageID = $mr1/MessageID
        return
        <ul>
        {
          for $u2 in doc("BookfaceDB.xml") /DB/Users/User
          where $mr1/ReceiverID = $u2/@UserID
          return
          <ul>
          {data($u2/FirstName)}.{data($u2/LastName)},
          </ul>
          }
        </ul>
      }
    }
  }
  {
    let $mcs := for $mc in doc("BookfaceDB.xml")
/DB/MComments/MComment
    where $m/@MessageID = $mc/MessageID
    return $mc
  }
  return

```

```
        <ul>
        { $nl } It has {count($mcs/@MCommentID)} replies.
        </ul>
    }
    </ul>
}
</ul>
}
</ul>
}
</ul>
}
```

```
xquery version "1.0";
```

(: xquery7: produce a summary listing of revenue generated by a particular user
list the set of products bought buy a user and their total :)

```
<ul>
{
  let $nl := "&#10;"
  for $u in doc("BookfaceDB.xml") /DB/Users/User
  return
  <ul>
  { $nl } { data($u/FirstName) }. { data($u/LastName) }'s purchase list:
  {
    for $t in doc("BookfaceDB.xml") /DB/Transactions/Transaction
    where $u/@UserID = $t/OwnerID
    return
    <ul>
    {
      for $a in doc("BookfaceDB.xml") /DB/Advertisements/Advertisement
      where $t/AdvertisementID = $a/@AdvertisementID
      return
      <ul>
      { $nl } ItemName: { data($a/ItemName) } { $nl } Type: { data($a/Type) } { $nl }
      Company: { data($a/Company) } { $nl } UnitPrice: { data($a/UnitPrice) } { $nl } Number of Units:
      { data($t/NumberOfUnits) } { $nl } Date: { data($t/DateTime) }
      </ul>
    }
  </ul>
}
}
{
  let $r := for $t in doc("BookfaceDB.xml") /DB/Transactions/Transaction
            where $u/@UserID = $t/OwnerID
            return for $a in doc("BookfaceDB.xml")
                  /DB/Advertisements/Advertisement
                  where $t/AdvertisementID = $a/@AdvertisementID
                  return $t/NumberOfUnits*$a/UnitPrice

  return
  <ul>
  { $nl } Total revenue: { sum($r) }
  </ul>
}
</ul>
}
```