SOFTWARE GEMS

```
--
-- PerformanceDBA for Mark/Sensor 110115
--
--      Outer Query: Report Alerts for report period
--
SELECT  [Location]    = Location.Name,
        [Sensor]      = AO.SensorNo,
        [DateTime]    = AO.ReadingDtm,
        [Type]        = AlertType.Name

    FROM  Alert,
          AlertType,
          Location,
          Sensor
    WHERE AO.AlertTypeCode = AlertType.AlertTypeCode
    AND   AO.LocationId    = Location.LocationId
    AND   AO.LocationId    = SO.LocationId
    AND   AO.SensorNo      = SO.SensorNo
    AND   SO.IsSwitch      = 0                    -- Value types only
    AND   AO.ReadingDtm   >= "2011.01.01 00:00"   -- Report start DTM
```

```
--
--      Outer Query: Report Alerts for report period
--
```

```
--
-- PerformanceDBA for Mark/Sensor 110115
--
--      Subquery (1) Derive Alert.Value
--
--      Syntax & operation tested on Sybase ASE 15.0.3
--
SELECT  [Location]   = Location.Name,
        [Sensor]     = AO.SensorNo,
        [DateTime]   = AO.ReadingDtm,
        [Type]       = AlertType.Name,

    ⓵  -- Alert.Value (1) select Reading that generated the Alert
        [AlertValue] = (SELECT Value
            FROM  ReadingValue                  -- Inner query, no alias reqd
            WHERE LocationId  = AO.LocationId    -- Correlate with Outer
            AND   SensorNo    = AO.SensorNo      -- straight join
            AND   ReadingDtm  = AO.ReadingDtm
            )
FROM    Alert       AO,                         -- Alert in Outer query
        AlertType,
        Location,
        Sensor      SO                          -- Sensor in Outer query
WHERE AO.AlertTypeCode = AlertType.AlertTypeCode
AND    AO.LocationId    = Location.LocationId
AND    AO.LocationId    = SO.LocationId
AND    AO.SensorNo      = SO.SensorNo
AND    SO.IsSwitch      = 0                      -- Value types only
AND    AO.ReadingDtm   >= "2011.01.01 00:00"    -- Report start DTM
```
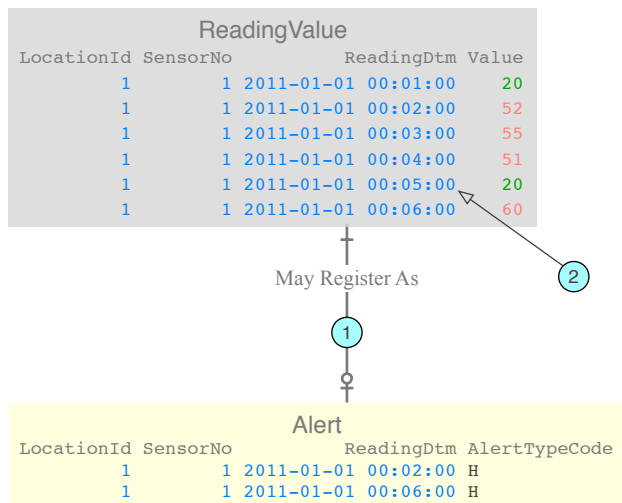
SOFTWARE GEMS

```
--
-- PerformanceDBA for Mark/Sensor 110120
--
--      Subquery (2) Derive Alert.EndDtm
--
--      Syntax & operation tested on Sybase ASE 15.0.3
--
SELECT  [Location]   = Location.Name,
        [Sensor]     = AO.SensorNo,
        [DateTime]   = AO.ReadingDtm,
        [Type]       = AlertType.Name,
```

①
```
        -- Alert.Value (1) select Reading that generated the Alert
        [AlertValue] = (SELECT Value
            FROM  ReadingValue                -- Inner query, no alias reqd
            WHERE LocationId  = AO.LocationId  -- Correlate with Outer
            AND   SensorNo    = AO.SensorNo    -- straight join
            AND   ReadingDtm  = AO.ReadingDtm
            ),
```

②
```
        -- End range DTM (2) select *next* DTM where Value is *within-range*
        [EndDtm]     = ( SELECT ISNULL( MIN(ReadingDtm), AO.ReadingDtm)
            FROM  ReadingValue
            WHERE LocationId  = AO.LocationId
            AND   SensorNo    = AO.SensorNo
            AND   ReadingDtm >  AO.ReadingDtm  -- start range DTM
            AND   Value       <= SO.UpperLimit -- End range Value
            )
FROM    Alert      AO,                         -- Alert in Outer query
        AlertType,
        Location,
        Sensor     SO                          -- Sensor in Outer query
WHERE AO.AlertTypeCode = AlertType.AlertTypeCode
AND   AO.LocationId     = Location.LocationId
AND   AO.LocationId     = SO.LocationId
AND   AO.SensorNo       = SO.SensorNo
AND   SO.IsSwitch       = 0                    -- Value types only
AND   AO.ReadingDtm    >= "2011.01.01 00:00"   -- Report start DTM
```

ReadingValue

LocationId	SensorNo	ReadingDtm	Value
1	1	2011-01-01 00:01:00	20
1	1	2011-01-01 00:02:00	52
1	1	2011-01-01 00:03:00	55
1	1	2011-01-01 00:04:00	51
1	1	2011-01-01 00:05:00	20
1	1	2011-01-01 00:06:00	60

May Register As

① ②

Alert

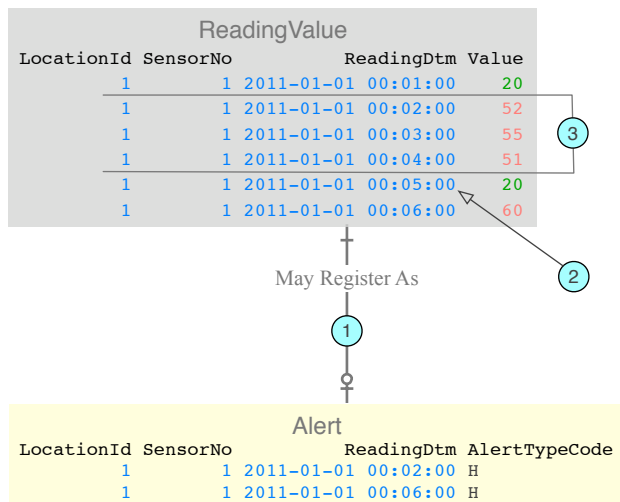| LocationId	SensorNo	ReadingDtm	AlertTypeCode
1	1	2011-01-01 00:02:00	H
1	1	2011-01-01 00:06:00	H

SOFTWARE GEMS

```
--
-- PerformanceDBA for Mark/Sensor 110120
--
--      Subquery (3) Derive Alert.PeakValue
--
--      Syntax & operation tested on Sybase ASE 15.0.3
--
SELECT  [Location]   = Location.Name,
        [Sensor]     = AO.SensorNo,
        [DateTime]   = AO.ReadingDtm,
        [Type]       = AlertType.Name,

    ①  -- Alert.Value (1) select Reading that generated the Alert
        [AlertValue] = (SELECT Value
            FROM  ReadingValue                  -- Inner query, no alias reqd
            WHERE LocationId  = AO.LocationId    -- Correlate with Outer
            AND   SensorNo    = AO.SensorNo      -- straight join
            AND   ReadingDtm  = AO.ReadingDtm
            ),

    ③  -- Alert.PeakValue (3) select max value within Alert duration
        [PeakValue]  = ( SELECT MAX(Value)
            FROM  ReadingValue
            WHERE LocationId  = AO.LocationId
            AND   SensorNo    = AO.SensorNo
            AND   ReadingDtm >= AO.ReadingDtm    -- Start range DTM

        ②  -- End range DTM (2) select *next* DTM where Value is *within-range*
            AND   ReadingDtm < ( SELECT ISNULL( MIN(ReadingDtm), AO.ReadingDtm)
                FROM  ReadingValue
                WHERE LocationId  = AO.LocationId
                AND   SensorNo    = AO.SensorNo
                AND   ReadingDtm >  AO.ReadingDtm   -- start range DTM
                AND   Value       <= SO.UpperLimit  -- End range Value
                )
            )
    FROM  Alert      AO,                         -- Alert in Outer query
          AlertType,
          Location,
          Sensor     SO                          -- Sensor in Outer query
    WHERE AO.AlertTypeCode = AlertType.AlertTypeCode
    AND   AO.LocationId    = Location.LocationId
    AND   AO.LocationId    = SO.LocationId
    AND   AO.SensorNo      = SO.SensorNo
    AND   SO.IsSwitch      = 0                    -- Value types only
    AND   AO.ReadingDtm   >= "2011.01.01 00:00"  -- Report start DTM
```

ReadingValue

LocationId	SensorNo	ReadingDtm	Value
1	1	2011-01-01 00:01:00	20
1	1	2011-01-01 00:02:00	52
1	1	2011-01-01 00:03:00	55
1	1	2011-01-01 00:04:00	51
1	1	2011-01-01 00:05:00	20
1	1	2011-01-01 00:06:00	60

③
②

May Register As

①

Alert

LocationId	SensorNo	ReadingDtm	AlertTypeCode
1	1	2011-01-01 00:02:00	H
1	1	2011-01-01 00:06:00	H

Sensor/Alert Report
Acknowledged Set

```
--
-- PerformanceDBA for Mark/Sensor 110120
--
--      Subquery (4) Acknowledged Set, Subquery (5) Actioned Set
--
--      Syntax & operation tested on Sybase ASE 15.0.3
--
SELECT  [Location]   = Location.Name,
        [Sensor]     = AO.SensorNo,
        [DateTime]   = AO.ReadingDtm,
        [Type]       = AlertType.Name,

   ①   -- Alert.Value (1) select Reading that generated the Alert
        [AlertValue] = (SELECT Value
            FROM  ReadingValue                  -- Inner query, no alias reqd
            WHERE LocationId  = AO.LocationId    -- Correlate with Outer
            AND   SensorNo    = AO.SensorNo      -- straight join
            AND   ReadingDtm  = AO.ReadingDtm
            ),

   ③   -- Alert.PeakValue (3) select max value within Alert duration
        [PeakValue]  = ( SELECT MAX(Value)
            FROM  ReadingValue
            WHERE LocationId  = AO.LocationId
            AND   SensorNo    = AO.SensorNo
            AND   ReadingDtm >= AO.ReadingDtm       -- Start range DTM

      ②   -- End range DTM (2) select *next* DTM where Value is *within-range*
            AND   ReadingDtm < ( SELECT ISNULL( MIN(ReadingDtm), AO.ReadingDtm)
                FROM  ReadingValue
                WHERE LocationId  = AO.LocationId
                AND   SensorNo    = AO.SensorNo
                AND   ReadingDtm > AO.ReadingDtm    -- start range DTM
                AND   Value       <= SO.UpperLimit  -- End range Value
                )
            )
FROM    Alert      AO,                       -- Alert in Outer query
        AlertType,
        Location,
        Sensor     SO                        -- Sensor in Outer query
WHERE AO.AlertTypeCode = AlertType.AlertTypeCode
AND   AO.LocationId     = Location.LocationId
AND   AO.LocationId     = SO.LocationId
AND   AO.SensorNo       = SO.SensorNo
AND   SO.IsSwitch       = 0                   -- Value types only
AND   AO.ReadingDtm    >= "2011.01.01 00:00"  -- Report start DTM

④ -- exclude Acknowledged (4) select Acknowledged rows
AND   NOT EXISTS (SELECT 1
      FROM  Acknowledgement
      WHERE LocationId  = AO.LocationId
      AND   SensorNo    = AO.SensorNo
      AND   ReadingDtm  = AO.ReadingDtm
      )

⑤ -- exclude Actioned (5) select Actioned rows
AND   NOT EXISTS (SELECT 1
      FROM  Action
      WHERE LocationId  = AO.LocationId
      AND   SensorNo    = AO.SensorNo
      AND   ReadingDtm  = AO.ReadingDtm
      )
```