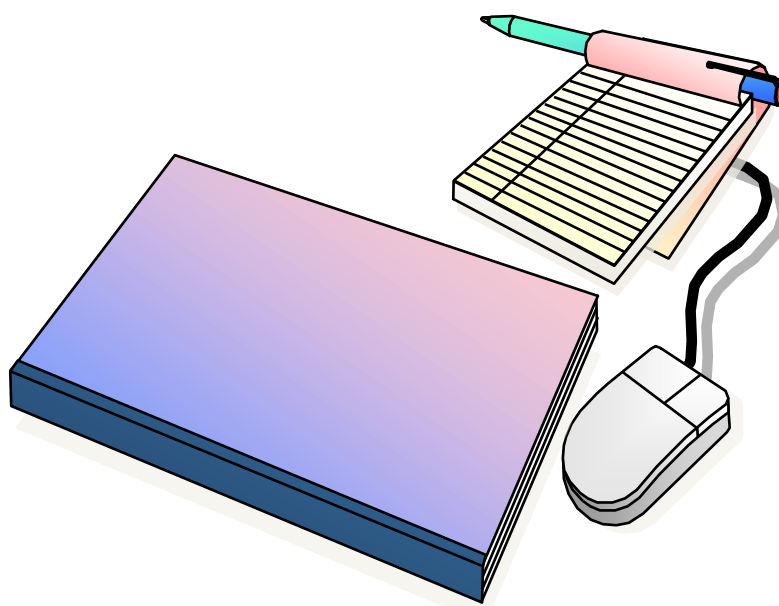


Lösningar - COBOL



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Övning 2 – COBOL single SQL

Uppgift 1 – Include

```

000100 Identification Division.
000200 Program-Id. OVN21.
000300 Data Division.
000400 Working-Storage Section.
000500*-----
000600* Lägg in INCLUDE av SQL-areor
000700*-----
000800     Exec SQL
000900         Include SQLCA
001000     End-Exec.
001100
001200 Procedure Division.
001300     Display '-->> Programmet startar...'
001400     Display '-->> Programmet avslutar...'
001500
001600     GoBack
001700     .
001800*-----
001900 End Program OVN21.
002000*-----

```

Uppgift 2 –SQL Select

```

000100 Identification Division.
000200 Program-Id. OVN22.
000300 Data Division.
000400 Working-Storage Section.
000500*-----
000600* Lägg in INCLUDE av SQL-areor
000700* och beskrivningar.
000800*-----
000900     Exec SQL
001000         Include SQLCA
001100     End-Exec.
001200
001300 01 SQL-Data.
001400     05 WS-Datum           Pic X(10).
001500     05 WS-Tid            Pic X(10).
001600     05 WS-SQLCODE       Pic +(09).
001700
001800
001900 Procedure Division.
002000     Display '-->> Programmet startar...'
002100     Perform Hamta-Datum-Tid
002200     Perform Visa-Datum-Tid
002300     Display '-->> Programmet avslutar...'
002400
002500     GoBack
002600     .
002700*-----
002800 Hamta-Datum-Tid.
002900*-----

```

```
003000      Exec SQL
003100          Select
003200              CURRENT DATE,
003300              CURRENT TIME
003400          Into
003500              :WS-Datum,
003600              :WS-Tid
003700          From
003800              SYSIBM.SYSDUMMY1
003900      End-Exec
004000          .
004100*-----
004200 Visa-Datum-Tid.
004300*-----
004400      Display '-->> Datum : ' WS-Datum
004500      Display '-->> Tid   : ' WS-Tid
004600          .
004700*-----
004800 End Program OVN22.
004900*-----
```

Övning 3 – COBOL CURSOR

Uppgift 1 – Include

```

000100 Identification Division.
000200 Program-Id. OVN31.
000300 Data Division.
000400 Working-Storage Section.
000500*-----
000600* Lägg in INCLUDE av SQL-areor
000700* och beskrivningar.
000800*-----
000900     Exec SQL
001000         Include SQLCA
001100     End-Exec.
001200
001300     Exec SQL
001400         Include DRYCK
001500     End-Exec.
001600
001700     Exec SQL
001800         Include PRIS
001900     End-Exec.
002000
002100 01 SQL-Data.
002200     05 WS-Datum         Pic X(10).
002300     05 WS-Tid          Pic X(10).
002400     05 WS-SQLCODE     Pic +(09).
002500
002600
002700 Procedure Division.
002800     Display '-->> Programmet startar...'
002900     Perform Hamta-Datum-Tid
003000     Perform Visa-Datum-Tid
003100     Display '-->> Programmet avslutar...'
003200
003300     GoBack
003400     .
003500*-----
003600 Hamta-Datum-Tid.
003700*-----
003800     Exec SQL
003900         Select
004000             CURRENT DATE,
004100             CURRENT TIME
004200         Into
004300             :WS-Datum,
004400             :WS-Tid
004500         From
004600             SYSIBM.SYSDUMMY1
004700     End-Exec
004800     .
004900*-----
005000 Visa-Datum-Tid.
005100*-----
005200     Display '-->> Datum : ' WS-Datum
005300     Display '-->> Tid   : ' WS-Tid
005400     .
005500*-----

```

```

005600 End Program OVN31.
005700*-----

```

Uppgift 2 – Parameterdatum

```

000100 Identification Division.
000200 Program-Id. OVN32.
000300 Data Division.
000400 Working-Storage Section.
000500*-----
000600* Lagg in INCLUDE av SQL-areor
000700* och beskrivningar.
000800*-----
000900     Exec SQL
001000         Include SQLCA
001100     End-Exec.
001200
001300     Exec SQL
001400         Include DRYCK
001500     End-Exec.
001600
001700     Exec SQL
001800         Include PRIS
001900     End-Exec.
002000
002100 01 SQL-Data.
002200     05 WS-Datum         Pic X(10).
002300     05 WS-Tid          Pic X(10).
002400     05 WS-SQLCODE     Pic +(09).
002500
002600 01 SysinData.
002700     05 WS-Parameter-Datum Pic X(10).
002800
002900
003000 Procedure Division.
003100     Display '-->> Programmet startar... '
003200     Perform Hamta-Datum-Tid
003300     Perform Hamta-Parameter-Datum
003400     Perform Visa-Datum-Tid
003500     Display '-->> Programmet avslutar... '
003600
003700     GoBack
003800     .
003900*-----
004000 Hamta-Datum-Tid.
004100*-----
004200     Exec SQL
004300         Select
004400             CURRENT DATE,
004500             CURRENT TIME
004600         Into
004700             :WS-Datum,
004800             :WS-Tid
004900         From
005000             SYSIBM.SYSDUMMY1
005100     End-Exec
005200     .
005300*-----

```

```
005400 Hamta-Parameter-Datum.
005500*-----
005600     Accept WS-Parameter-Datum From SYSIN
005700     .
005800*-----
005900 Visa-Datum-Tid.
006000*-----
006100     Display '-->> Datum   : ' WS-Datum
006200     Display '-->> Tid     : ' WS-Tid
006300     Display '-->> Pdatum  : ' WS-Parameter-Datum
006400     .
006500*-----
006600 End Program OVN32.
006700*-----
```

Uppgift 3 – Prislista

```
000100 Identification Division.
000200 Program-Id. OVN33.
000300 Data Division.
000400 Working-Storage Section.
000500*-----
000600* Lagg in INCLUDE av SQL-areor
000700* och beskrivningar.
000800*-----
000900     Exec SQL
001000         Include SQLCA
001100     End-Exec.
001200
001300     Exec SQL
001400         Include DRYCK
001500     End-Exec.
001600
001700     Exec SQL
001800         Include PRIS
001900     End-Exec.
002000
002100     Exec SQL
002200         DECLARE PRISER CURSOR FOR
002300             SELECT
002400                 D.DRYCKNR,
002500                 D.DRYCKNAMN,
002600                 P.VOLYM,
002700                 P.PRIS,
002800                 P.PRDATUM
002900             FROM
003000                 UTB00.DRYCK D JOIN UTB00.PRIS P
003100                 ON D.DRYCKNR = P.DRYCKNR
003200             WHERE
003300                 (P.DRYCKNR, P.VOLYM, P.PRDATUM) IN
003400                 (SELECT
003500                     P2.DRYCKNR,
003600                     P2.VOLYM,
003700                     MAX(P2.PRDATUM)
003800                 FROM
003900                     UTB00.PRIS P2
```

```

004000          WHERE
004100          P2.PRDATUM <= :WS-Sysin-Datum
004200          GROUP BY
004300          P2.DRYCKNR
004400          ,P2.VOLYM)
004500          ORDER BY D.DRYCKNR, P.VOLYM
004600      End-Exec.
004700
004800 01 SQL-Data.
004900     05 WS-Datum      Pic X(10).
005000     05 WS-Tid       Pic X(10).
005100     05 WS-SQLCODE   Pic +(09).
005200
005300 01 SysinData.
005400     05 WS-Sysin-Datum Pic X(10).
005500
005600 01 Display-Rad.
005700     05 D-Drycknr     Pic 9(05).
005800     05              Pic X(02) Value Space.
005900     05 D-Drycknamn Pic X(25).
006000     05              Pic X(02) Value Space.
006100     05 D-Volym      Pic 9(05).
006200     05              Pic X(02) Value Space.
006300     05 D-Pris       Pic 9(05).
006400     05              Pic X(02) Value Space.
006500     05 D-Prdatum   Pic X(10).
006600
006700 01 Vilkoren        Pic X(08) Value Space.
006800     88 Klar         Value 'Klar'.
006900
007000
007100 Procedure Division.
007200     Display '-->> Programmet startar...'
007300     Perform Hamta-Datum-Tid
007400     Perform Hamta-Sysin-Datum
007500     Perform Visa-Datum-Tid
007600     Perform SQL-Oppna-Cursor
007700     Perform SQL-Fetch-Cursor Until Klar
007800     Display '-->> Programmet avslutar...'
007900
008000     GoBack
008100     .
008200*-----*
008300 Hamta-Datum-Tid.
008400*-----*
008500     Exec SQL
008600     Select
008700         CURRENT DATE,
008800         CURRENT TIME
008900     Into
009000         :WS-Datum,
009100         :WS-Tid
009200     From
009300         SYSIBM.SYSDUMMY1
009400     End-Exec
009500     .
009600*-----*
009700 Hamta-Sysin-Datum.
009800*-----*
009900     Accept WS-Sysin-Datum From SYSIN
010000     .
010100*-----*

```



```
010200 SQL-Öppna-Cursor.
010300*-----
010400     Exec SQL
010500         OPEN PRISER
010600     End-Exec
010700     .
010800*-----
010900 SQL-Fetch-Cursor.
011000*-----
011100     Exec SQL
011200         FETCH PRISER
011300         INTO
011400             :DCLDRYCK.DRYCKNR,
011500             :DCLDRYCK.DRYCKNAMN,
011600             :DCLPRIS.VOLYM,
011700             :DCLPRIS.PRIS,
011800             :DCLPRIS.PRDATUM
011900     End-Exec
012000
012100     Evaluate SQLCODE
012200         When 0
012300             Perform Display-Rader
012400         When 100
012500             Set Klar to True
012600         When Other
012700             Perform SQL-Fel
012800     End-Evaluate
012900     .
013000*-----
013100 Stang-Cursor.
013200*-----
013300     Exec SQL
013400         CLOSE PRISER
013500     End-Exec
013600     .
013700*-----
013800 Display-Rader.
013900*-----
014000     Move Drycknr     in DclDryck to D-Drycknr
014100     Move Drycknamn  in DclDryck to D-Drycknamn
014200     Move Volym       in DclPris  to D-Volym
014300     Move Pris        in DclPris  to D-Pris
014400     Move Prdatum    in DclPris  to D-Prdatum
014500     Display Display-Rad
014600     .
014700*-----
014800 Visa-Datum-Tid.
014900*-----
015000     Display '-->> Datum   : ' WS-Datum
015100     Display '-->> Tid     : ' WS-Tid
015200     Display '-->> Pdatum  : ' WS-Sysin-Datum
015300     Display Space
015400     .
015500*-----
015600 SQL-Fel.
015700*-----
015800     Move SQLCODE to WS-SQLCODE
015900     Display '*** SQL-Fel ***'
016000     Display 'SQLCODE   : ' WS-SQLCODE
016100     Display 'SQLSTATE  : ' SQLSTATE
016200     Display 'SQLMedd   : ' SQLERRMC(1:SQLERRML)
016300     Move 99 to Return-Code
```

```
016400      Set Klar to True
016500      .
016600*-----
016700 End Program OVN33.
016800*-----
```

Uppgift 4 – Prislista till fil

```
000100 Identification Division.
000200 Program-Id. OVN34.
000300 Environment Division.
000400 Input-Output Section.
000500 File-Control.
000600      Select Lista Assign to LISTDD
000700      Organization is Sequential
000800      Access is Sequential
000900      .
001000
001100 Data Division.
001200 File Section.
001300 FD Lista Recording Mode F.
001400 01 Listrad   Pic X(120).
001500
001600 Working-Storage Section.
001700      Exec SQL
001800      Include SQLCA
001900      End-Exec.
002000
002100      Exec SQL
002200      Include DRYCK
002300      End-Exec.
002400
002500      Exec SQL
002600      Include PRIS
002700      End-Exec.
002800
002900      Exec SQL
003000      DECLARE PRISER CURSOR FOR
003100      SELECT
003200          D.DRYCKNR,
003300          D.DRYCKNAMN,
003400          P.VOLYM,
003500          P.PRIS,
003600          P.PRDATUM
003700      FROM
003800          UTB00.DRYCK D JOIN UTB00.PRIS P
003900          ON D.DRYCKNR = P.DRYCKNR
004000      WHERE
004100          (P.DRYCKNR, P.VOLYM, P.PRDATUM) IN
004200          (SELECT
004300              P2.DRYCKNR,
004400              P2.VOLYM,
004500              MAX(P2.PRDATUM)
004600          FROM
004700              UTB00.PRIS P2
004800          WHERE
004900              P2.PRDATUM <= :WS-Sysin-Datum
005000          GROUP BY
```

```
005100          P2.DRYCKNR
005200          ,P2.VOLYM)
005300          ORDER BY D.DRYCKNR, P.VOLYM
005400      End-Exec.
005500
005600 01 WS-Data.
005700     05 WS-Sidnr      Pic 9(02) Value 0.
005800     05 WS-Radnr     Pic 9(02) Value 0.
005900         88 Radnr-Start      Value 0.
006000         88 Radnr-Max      Value 15.
006100
006200 01 SQL-Data.
006300     05 WS-Datum      Pic X(10).
006400     05 WS-Tid       Pic X(10).
006500     05 WS-SQLCODE   Pic +(09).
006600
006700 01 SysinData.
006800     05 WS-Sysin-Datum Pic X(10).
006900
007000 01 Prislista-Dryckrad.
007100     05 D-Drycknr     Pic 9(05).
007200     05              Pic X(03) Value Space.
007300     05 D-Drycknamn  Pic X(25).
007400     05              Pic X(02) Value Space.
007500     05 D-Volym      Pic 9(05).
007600     05              Pic X(02) Value Space.
007700     05 D-Pris       Pic 9(05).
007800     05              Pic X(02) Value Space.
007900     05 D-Prdatum   Pic X(10).
008000
008100 01 Prislista-Rubrik.
008200     05              Pic X(08) Value 'Drycknr'.
008300     05              Pic X(27) Value 'Drycknamn'.
008400     05              Pic X(07) Value 'Volym'.
008500     05              Pic X(07) Value 'Pris'.
008600     05              Pic X(12) Value 'Prisdatum'.
008700     05              Pic X(05) Value 'Sida:'.
008800     05 R-Sidnr    Pic Z(02).
008900
009000 01 Prislista-Slutrad.
009100     05              Pic X(30) Value 'S L U T på Prislista'.
009200
009300 01 Prislista-Skiljerad.
009400     05              Pic X(120) Value All '-'.
009500
009600 01 Vilkoren      Pic X(08) Value Space.
009700     88 Klar       Value 'Klar'.
009800
009900
010000 Procedure Division.
010100     Display '-->> Programmet startar...'
010200     Perform Initiera
010300     Perform SQL-Oppna-Cursor
010400     Perform SQL-Fetch-Cursor Until Klar
010500     Perform Avsluta
010600     Display '-->> Programmet avslutar...'
010700
010800     GoBack
010900     .
011000*-----
011100 Initiera.
011200*-----
```

```
011300      Open Output Lista
011400      Accept WS-Sysin-Datum From SYSIN
011500      .
011600*-----
011700      Avsluta.
011800*-----
011900      Perform Skriv-Prislista-Slutrad
012000      Close Lista
012100      .
012200*-----
012300      SQL-Oppna-Cursor.
012400*-----
012500      Exec SQL
012600          OPEN PRISER
012700      End-Exec
012800      .
012900*-----
013000      SQL-Fetch-Cursor.
013100*-----
013200      Exec SQL
013300          FETCH PRISER
013400          INTO
013500              :DCLDRYCK.DRYCKNR,
013600              :DCLDRYCK.DRYCKNAMN,
013700              :DCLPRIS.VOLYM,
013800              :DCLPRIS.PRIS,
013900              :DCLPRIS.PRDATUM
014000      End-Exec
014100
014200      Evaluate SQLCODE
014300          When 0
014400              Perform Skriv-Prislista-Rad
014500          When 100
014600              Set Klar to True
014700          When Other
014800              Perform SQL-Fel
014900      End-Evaluate
015000      .
015100*-----
015200      Stang-Cursor.
015300*-----
015400      Exec SQL
015500          CLOSE PRISER
015600      End-Exec
015700      .
015800*-----
015900      Skriv-Prislista-Rad.
016000*-----
016100      Evaluate True
016200          When WS-Sidnr = 0
016300              Perform Skriv-Prislista-Rubrik
016400          When Radnr-Max
016500              Perform Skriv-Prislista-Rubrik
016600              Set Radnr-Start to True
016700      End-Evaluate
016800      Perform Skriv-Prislista-Dryckrad
016900      .
017000*-----
017100      Skriv-Prislista-Rubrik.
017200*-----
017300          Add 1 to WS-Sidnr
017400          Move WS-Sidnr to R-Sidnr
```

```

017500      Write Listrad
017600              From Prislista-Rubrik
017700      Write Listrad
017800              From Prislista-Skiljerad
017900      .
018000*-----
018100      Skriv-Prislista-Dryckrad.
018200*-----
018300      Add 1 to WS-Radnr
018400      Move Drycknr   in DclDryck to D-Drycknr
018500      Move Drycknamn in DclDryck to D-Drycknamn
018600      Move Volym      in DclPris  to D-Volym
018700      Move Pris       in DclPris  to D-Pris
018800      Move Prdatum   in DclPris  to D-Prdatum
018900      Write Listrad From Prislista-Dryckrad
019000      .
019100*-----
019200      Skriv-Prislista-Slutrad.
019300*-----
019400      Write Listrad
019500              From Prislista-Skiljerad
019600      Write Listrad
019700              From Prislista-Slutrad
019800      .
019900*-----
020000      SQL-Fel.
020100*-----
020200      Move SQLCODE to WS-SQLCODE
020300      Display '*** SQL-Fel ***'
020400      Display 'SQLCODE   : ' WS-SQLCODE
020500      Display 'SQLSTATE   : ' SQLSTATE
020600      Display 'SQLMedd    : ' SQLERRMC(1:SQLERRML)
020700      Move 99 to Return-Code
020800      Set Klar to True
020900      .
021000*-----
021100      End Program OVN34.
021200*-----

```

Uppgift 5 – Prislista till fil,med brytning

```

000100      Identification Division.
000200      Program-Id. OVN35.
000300      Environment Division.
000400      Input-Output Section.
000500      File-Control.
000600          Select Lista Assign to LISTDD
000700              Organization is Sequential
000800              Access is Sequential
000900      .
001000
001100      Data Division.
001200      File Section.
001300      FD Lista Recording Mode F.
001400      01 Listrad   Pic X(120).
001500
001600      Working-Storage Section.
001700          Exec SQL

```

```

001800      Include SQLCA
001900      End-Exec.
002000
002100      Exec SQL
002200          Include DRYCK
002300      End-Exec.
002400
002500      Exec SQL
002600          Include PRIS
002700      End-Exec.
002800
002900      Exec SQL
003000          DECLARE PRISER CURSOR FOR
003100              SELECT
003200                  D.DRYCKNR,
003300                  D.DRYCKNAMN,
003400                  D.DSKOD,
003500                  P.VOLYM,
003600                  P.PRIS,
003700                  P.PRDATUM
003800              FROM
003900                  UTB00.DRYCK D JOIN UTB00.PRIS P
004000                  ON D.DRYCKNR = P.DRYCKNR
004100              WHERE
004200                  (P.DRYCKNR, P.VOLYM, P.PRDATUM) IN
004300                  (SELECT
004400                      P2.DRYCKNR,
004500                      P2.VOLYM,
004600                      MAX(P2.PRDATUM)
004700                  FROM
004800                      UTB00.PRIS P2
004900                  WHERE
005000                      P2.PRDATUM <= :WS-Sysin-Datum
005100                  GROUP BY
005200                      P2.DRYCKNR
005300                      ,P2.VOLYM)
005400              ORDER BY D.DSKOD, D.DRYCKNR,
005500              P.VOLYM
005500      End-Exec.
005600
005700 01 WS-Data.
005800     05 WS-Sidnr      Pic 9(02) Value 0.
005900     05 WS-Radnr     Pic 9(02) Value 0.
006000         88 Radnr-Start      Value 0.
006100         88 Radnr-Max       Value 55.
006200     05 WS-Old-Dskod  Pic X(02) Value Space.
006300
006400 01 SQL-Data.
006500     05 WS-Datum      Pic X(10).
006600     05 WS-Tid       Pic X(10).
006700     05 WS-SQLCODE   Pic +(09).
006800
006900 01 SysinData.
007000     05 WS-Sysin-Datum Pic X(10).
007100
007200 01 Prislsta-Dryckrad.
007300     05 D-Drycknr    Pic 9(05).
007400     05              Pic X(03) Value Space.
007500     05 D-Drycknamn Pic X(25).
007600     05              Pic X(02) Value Space.
007700     05 D-Volym     Pic 9(05).
007800     05              Pic X(02) Value Space.

```

```
007900      05 D-Pris          Pic 9(05).
008000      05              Pic X(02) Value Space.
008100      05 D-Prdatum      Pic X(10).
008200
008300 01 Prislista-Rubrik.
008400      05              Pic X(08) Value 'Drycknr'.
008500      05              Pic X(27) Value 'Drycknamn'.
008600      05              Pic X(07) Value 'Volym'.
008700      05              Pic X(07) Value 'Pris'.
008800      05              Pic X(12) Value 'Prisdatum'.
008900      05              Pic X(05) Value 'Sida:'.
009000      05 R-Sidnr      Pic Z(02).
009100
009200 01 Prislista-Dsnamn.
009300      05              Pic X(06) Value '-->> ('.
009400      05 Dskod        Pic X(02).
009500      05              Pic X(04) Value ')'.
009600      05 Dsnamn      Pic X(40).
009700
009800 01 Prislista-Slutrad.
009900      05              Pic X(30) Value 'S L U T på Prislista'.
010000
010100 01 Prislista-Skiljerad.
010200      05              Pic X(120) Value All '-'.
010300
010400 01 Prislista-Tomrad.
010500      05              Pic X(120) Value Space.
010600
010700 01 Vilkoren          Pic X(08) Value Space.
010800      88 Klar          Value 'Klar'.
010900
011100 Procedure Division.
011200      Display '-->> Programmet startar...'
011300      Perform Initiera
011400      Perform SQL-Oppna-Cursor
011500      Perform SQL-Fetch-Cursor Until Klar
011600      Perform Avsluta
011700      Display '-->> Programmet avslutar...'
011800
011900      GoBack
012000      .
012100*-----
012200 Initiera.
012300*-----
012400      Open Output Lista
012500      Accept WS-Sysin-Datum From SYSIN
012600      .
012700*-----
012800 Avsluta.
012900*-----
013000      Perform Skriv-Prislista-Slutrad
013100      Close Lista
013200      .
013300*-----
013400 SQL-Oppna-Cursor.
013500*-----
013600      Exec SQL
013700          OPEN PRISER
013800      End-Exec
013900      .
014000*-----
014100 SQL-Fetch-Cursor.
```

```
014200*-----
014300      Exec SQL
014400          FETCH PRISER
014500          INTO
014600              :DCLDRYCK.DRYCKNR,
014700              :DCLDRYCK.DRYCKNAMN,
014800              :DCLDRYCK.DSKOD,
014900              :DCLPRIS.VOLYM,
015000              :DCLPRIS.PRIS,
015100              :DCLPRIS.PRDATUM
015200      End-Exec
015300
015400      Evaluate SQLCODE
015500          When 0
015600              Perform Skriv-Prislista-Rad
015700          When 100
015800              Set Klar to True
015900          When Other
016000              Perform SQL-Fel
016100      End-Evaluate
016200      .
016300*-----
016400      Stang-Cursor.
016500*-----
016600      Exec SQL
016700          CLOSE PRISER
016800      End-Exec
016900      .
017000*-----
017100      Skriv-Prislista-Rad.
017200*-----
017300      Evaluate True
017400          When WS-Sidnr = 0
017500              Perform Skriv-Prislista-Rubrik
017600              Perform Skriv-Prislista-Dsnamn
017700          When WS-Old-Dskod Not = Dskod in DclDryck
017800              Perform Skriv-Prislista-Rubrik
017900              Perform Skriv-Prislista-Dsnamn
018000          When Radnr-Max
018100              Perform Skriv-Prislista-Rubrik
018200              Set Radnr-Start to True
018300      End-Evaluate
018400      Perform Skriv-Prislista-Dryckrad
018500      .
018600*-----
018700      Skriv-Prislista-Rubrik.
018800*-----
018900      Add 1 to WS-Sidnr
019000      Move WS-Sidnr to R-Sidnr
019100      Write Listrad
019200          From Prislista-Tomrad
019300      Write Listrad
019400          From Prislista-Rubrik
019500      Write Listrad
019600          From Prislista-Skiljerad
019700      .
019800*-----
019900      Skriv-Prislista-Dryckrad.
020000*-----
020100      Add 1 to WS-Radnr
020200      Move Drycknr in DclDryck to D-Drycknr
020300      Move Drycknamn in DclDryck to D-Drycknamn
```



```
020400      Move Volym      in DclPris  to D-Volym
020500      Move Pris      in DclPris  to D-Pris
020600      Move Prdatum   in DclPris  to D-Prdatum
020700      Write Listrad  From Prislista-Dryckrad
020800      .
020900*-----
021000      Skriv-Prislista-Dsnamn.
021100*-----
021200      Exec SQL
021300          Select
021400              Dsnamn
021500          Into
021600              :Prislista-Dsnamn.Dsnamn
021700          From
021800              UTB00.DRSLAG
021900          Where
022000              Dskod = :DclDryck.Dskod
022100      End-Exec
022200      If SQLCODE = +100
022300          Move '*** I/U ***' to Dsnamn
022310              in Prislista-Dsnamn
022400      End-If
022500      Move Dskod in DclDryck to WS-Old-Dskod
022600          Dskod in Prislista-Dsnamn
022700      Write Listrad from Prislista-Tomrad
022800      Write Listrad from Prislista-Dsnamn
022900      .
023000*-----
023100      Skriv-Prislista-Slutrad.
023200*-----
023300      Write Listrad
023400          From Prislista-Skiljerad
023500      Write Listrad
023600          From Prislista-Slutrad
023700      .
023800*-----
023900      SQL-Fel.
024000*-----
024100      Move SQLCODE to WS-SQLCODE
024200      Display '*** SQL-Fel ***'
024300      Display 'SQLCODE : ' WS-SQLCODE
024400      Display 'SQLSTATE : ' SQLSTATE
024500      Display 'SQLMedd : ' SQLERRMC(1:SQLERRML)
024600      Move 99 to Return-Code
024700      Set Klar to True
024800      .
024900*-----
025000      End Program OVN35.
025100*-----
```

Övning 4 – COBOL INSERT

Uppgift 1 – Kontroll av indata

```
000100 Identification Division.
000200 Program-Id. OVN41.
000300 Environment Division.
000400 Input-Output Section.
000500 File-Control.
000600     Select DATAIN Assign to DATADD
000700         Organization is Sequential
000800         Access is Sequential
000900     .
001000 Data Division.
001100
001200 File Section.
001300 FD Datain Recording Mode F.
001400 01 Datain-Post Pic X(80).
001500
001600 Working-Storage Section.
001700     Exec SQL
001800         Include SQLCA
001900     End-Exec
002000     .
002100     Exec SQL
002200         Include DRYCK
002300     End-Exec
002400     .
002500     Exec SQL
002600         Include PRIS
002700     End-Exec
002800     .
002900 01 WS-Datain-Post.
003000     05 WS-In-Drycknr           Pic 9(05).
003100     05                       Pic X(06).
003200     05 WS-In-Volym           Pic 9(04).
003300     05                       Pic X(05).
003400     05 WS-In-Pris           Pic 9(04).
003500     05                       Pic X(05).
003600     05 WS-In-Prdatum       Pic X(10).
003700
003800 01 Villkor           Pic 9(01) Value 0.
003900     88 Klar           Value 1.
004000
004100 01 SQL-Data.
004200     05 WS-SQLCODE   Pic +(09).
004300
004400
004500 Procedure Division.
004600     Display '-->> Programmet startar...'
004700     Perform Oppna-Datain
004800     Perform Laes-Datain Until Klar
004900     Perform Stang-Datain
005000     Display '-->> Programmet avslutar...'
005100
005200     GoBack
005300     .
005400*-----
005500 Oppna-Datain.
```

```
005600*-----
005700      Open Input DATAIN
005800      Display '-->> Datain öppnad...'
005900      .
006000*-----
006100      Laes-Datain.
006200*-----
006300      Read DATAIN Into WS-Datain-Post
006400          At End
006500              Set Klar to True
006600          Not At End
006700              Perform Behandla-Datain-Post
006800      End-Read
006900      .
007000*-----
007100      Behandla-Datain-Post.
007200*-----
007300
007400      Move WS-In-Drycknr to Drycknr in Dcldryck
007500
007600      Exec SQL
007700          Select
007800              Drycknamn
007900          Into
008000              :Drycknamn
008100          From
008200              UTB00.DRYCK
008300          Where
008400              Drycknr = :Dcldryck.Drycknr
008500      End-Exec
008600
008700      Evaluate SQLCODE
008800          When 0
008900              Continue
009000          When 100
009100              Display '*** Fel Drycknr: '
009110                          WS-In-Drycknr
009200          When Other
009300              Perform SQL-Fel
009400      End-Evaluate
009500      .
009600*-----
009700      Stang-Datain.
009800*-----
009900      Close Datain
010000      Display '-->> Datain stängd...'
010100      .
010200*-----
010300      SQL-Fel.
010400*-----
010500      Move SQLCODE to WS-SQLCODE
010600      Display '*** SQL-Fel ***'
010700      Display 'SQLCODE : ' WS-SQLCODE
010800      Display 'SQLSTATE : ' SQLSTATE
010900      Display 'SQLMedd : ' SQLERRMC(1:SQLERRML)
011000      Move 99 to Return-Code
011100      Set KLAR to True
011200      .
011300*-----
011400      End Program OVN41.
011500*-----
```

Uppgift 2 – INSERT av godkända rader

```
000100 Identification Division.
000200 Program-Id. OVN42.
000300 Environment Division.
000400 Input-Output Section.
000500 File-Control.
000600     Select DATAIN Assign to DATADD
000700     Organization is Sequential
000800     Access is Sequential
000900     .
001000 Data Division.
001100
001200 File Section.
001300 FD Datain Recording Mode F.
001400 01 Datain-Post Pic X(80).
001500
001600 Working-Storage Section.
001700     Exec SQL
001800     Include SQLCA
001900     End-Exec
002000     .
002100     Exec SQL
002200     Include DRYCK
002300     End-Exec
002400     .
002500     Exec SQL
002600     Include PRIS
002700     End-Exec
002800     .
002900 01 WS-Datain-Post.
003000 05 WS-In-Drycknr Pic 9(05).
003100 05                               Pic X(06).
003200 05 WS-In-Volym   Pic 9(04).
003300 05                               Pic X(05).
003400 05 WS-In-Pris   Pic 9(04).
003500 05                               Pic X(05).
003600 05 WS-In-Prdatum Pic X(10).
003700
003800 01 Villkor           Pic 9(01) Value 0.
003900 88 Klar              Value 1.
004000
004100 01 SQL-Data.
004200 05 WS-SQLCODE       Pic +(09).
004300 05 WS-Antal-Rader  Pic 9(04) Value 0.
004400
004500
004600 Procedure Division.
004700     Display '-->> Programmet startar... '
004800     Perform Oppna-Datain
004900     Perform Laes-Datain Until Klar
005000     Perform Stang-Datain
005100     Display '-->> ' WS-Antal-Rader
005110                ' rader behandlade '
005200     Display '-->> Programmet avslutar... '
005300
005400     GoBack
005500     .
```

```
005600*-----
005700 Oppna-Datain.
005800*-----
005900     Open Input DATAIN
006000     Display '-->> Datain öppnad...'
006100     .
006200*-----
006300 Laes-Datain.
006400*-----
006500     Read DATAIN Into WS-Datain-Post
006600     At End
006700     Set Klar to True
006800     Not At End
006900     Perform Behandla-Datain-Post
007000     End-Read
007100     .
007200*-----
007300 Behandla-Datain-Post.
007400*-----
007500
007600     Add 1 to WS-Antal-Rader
007700     Move WS-In-Drycknr to Drycknr in Dcldryck
007800
007900     Exec SQL
008000         Select
008100             Drycknamn
008200         Into
008300             :Drycknamn
008400         From
008500             UTB00.DRYCK
008600         Where
008700             Drycknr = :Dcldryck.Drycknr
008800     End-Exec
008900
009000     Evaluate SQLCODE
009100         When 0
009200             Perform SQL-Insert-Pris
009300         When 100
009400             Display '*** Fel Drycknr: '
009410                 WS-In-Drycknr
009500         When Other
009600             Display '*** Annat fel vid Select '
009610                 WS-In-Drycknr
009700             Perform SQL-Fel
009800     End-Evaluate
009900     .
010000*-----
010100 SQL-Insert-Pris.
010200*-----
010400     Move Ws-In-Volym to Volym in DclPris
010500     Move Ws-In-Pris to Pris in DclPris
010600     Move Ws-In-Prdatum to Prdatum in DclPris
010700     Exec SQL
010800     Insert
010900         Into UTB00.Pris
011000     Values
011100         (:Dcldryck.Drycknr,
011200         :Volym,
011300         :Pris,
011400         Date(:Prdatum))
011500     End-Exec
011600
```

```
011700 Evaluate SQLCODE
011800     When 0
011900*         Display '+++ Drycknr : ' Ws-In-Drycknr
012000*         ' nytt prisdatum ' Ws-In-Prdatum
012100     Continue
012200     When Other
012300         Perform SQL-Fel
012400     End-Evaluate
012500     .
012600*-----
012700 Stang-Datain.
012800*-----
012900     Close Datain
013000     Display '-->> Datain stängd...'
013100     .
013200*-----
013300 SQL-Fel.
013400*-----
013500     Move SQLCODE to WS-SQLCODE
013600     Display '*** SQL-Fel ***'
013700     Display 'SQLCODE : ' WS-SQLCODE
013800     Display 'SQLSTATE : ' SQLSTATE
013900     Display 'SQLMedd : ' SQLERRMC(1:SQLERRML)
014000     Move 99 to Return-Code
014100     Set KLAR to True
014200     .
014300*-----
014400 End Program OVN42.
014500*-----
```

Uppgift 3 – INSERT med felhantering

```
000100 Identification Division.
000200 Program-Id. OVN43.
000300 Environment Division.
000400 Input-Output Section.
000500 File-Control.
000600     Select DATAIN Assign to DATADD
000700         Organization is Sequential
000800         Access is Sequential
000900     .
001000 Data Division.
001100
001200 File Section.
001300 FD Datain Recording Mode F.
001400 01 Datain-Post Pic X(80).
001500
001600 Working-Storage Section.
001700     Exec SQL
001800         Include SQLCA
001900     End-Exec
002000     .
002100     Exec SQL
002200         Include DRYCK
002300     End-Exec
```

```
002400      .
002500      Exec SQL
002600          Include PRIS
002700      End-Exec
002800      .
002900 01 WS-Datain-Post.
003000     05 WS-In-Drycknr Pic 9(05).
003100     05                               Pic X(06).
003200     05 WS-In-Volym   Pic 9(04).
003300     05                               Pic X(05).
003400     05 WS-In-Pris    Pic 9(04).
003500     05                               Pic X(05).
003600     05 WS-In-Prdatum Pic X(10).
003700
003800 01 Villkor          Pic 9(01) Value 0.
003900     88 Klar          Value 1.
004000
004100 01 SQL-Data.
004200     05 WS-SQLCODE    Pic +(09).
004300
004400 01 Raknare.
004500     05 Antal-Rader   Pic 9(04) Value 0.
004600     05 Antal-Dublett Pic 9(04) Value 0.
004700     05 Antal-Insert  Pic 9(04) Value 0.
004800     05 Antal-FelDrycknr Pic 9(04) Value 0.
004900     05 Antal-AnnatFel Pic 9(04) Value 0.
005000
005100
005200 Procedure Division.
005300     Display '-->> Programmet startar... '
005400     Perform Oppna-Datain
005500     Perform Laes-Datain Until Klar
005600     Perform Stang-Datain
005700     Perform Skriv-Inforader
005800     Display '-->> Programmet avslutar... '
005900
006000     GoBack
006100     .
006200 *-----
006300 Oppna-Datain.
006400 *-----
006500     Open Input DATAIN
006600     Display '-->> Datain öppnad... '
006700     .
006800 *-----
006900 Laes-Datain.
007000 *-----
007100     Read DATAIN Into WS-Datain-Post
007200     At End
007300     Set Klar to True
007400     Not At End
007500     Perform Behandla-Datain-Post
007600     End-Read
007700     .
007800 *-----
007900 Behandla-Datain-Post.
008000 *-----
008100     Add 1 to Antal-Rader
008200     Move WS-In-Drycknr to Drycknr in Dcldryck
008300
008400     Exec SQL
008500     Select
```

```
008600         Drycknamn
008700         Into
008800         :Drycknamn
008900         From
009000         UTB00.DRYCK
009100         Where
009200         Drycknr = :Dcldryck.Drycknr
009300     End-Exec
009400
009500     Evaluate SQLCODE
009600         When 0
009700             Perform SQL-Insert-Pris
009800         When 100
009900             Display '*** Fel Drycknr: '
009910                 WS-In-Drycknr
010000             Add 1 to Antal-FelDrycknr
010100         When Other
010200             Perform SQL-Fel
010300     End-Evaluate
010400     .
010500*-----
010600 SQL-Insert-Pris.
010700*-----
010800
010900     Move Ws-In-Volym to Volym in DclPris
011000     Move Ws-In-Pris to Pris in DclPris
011100     Move Ws-In-Prdatum to Prdatum in DclPris
011200     Exec SQL
011300     Insert
011400         Into UTB00.Pris
011500     Values
011600         (:Dcldryck.Drycknr,
011700         :Volym,
011800         :Pris,
011900         Date(:Prdatum))
012000     End-Exec
012100
012200     Evaluate SQLCODE
012300         When 0
012400             Add 1 to Antal-Insert
012500         When 100
012600             Display '*** Fel Drycknr: '
012610                 WS-In-Drycknr
012700         When -803
012800             Display '*** Dublett : ' WS-Datain-Post
012900             Add 1 to Antal-Dublett
013000         When Other
013100             Add 1 to Antal-AnnatFel
013200             Perform SQL-Fel
013300     End-Evaluate
013400     .
013500*-----
013600 Stang-Datain.
013700*-----
013800     Close Datain
013900     Display '-->> Datain stängd...'
014000     .
014100*-----
014200 Skriv-Inforader.
014300*-----
014400     Display '-----'
014500     Display 'A N T A L      Behandlade rader : '
```



```
014600          Antal-Rader
014700      Display '          Korrekta Insert      : '
014800          Antal-Insert
014900      Display '          Dubletter           : '
015000          Antal-Dublett
015100      Display '          Felaktiga Drycknr : '
015200          Antal-FelDrycknr
015300      Display '          Andra fel           : '
015400          Antal-AnnatFel
015500      Display '-----'
015600          .
015700*-----
015800 SQL-Fel.
015900*-----
016000      Move SQLCODE to WS-SQLCODE
016100      Display '*** SQL-Fel ***'
016200      Display 'SQLCODE : ' WS-SQLCODE
016300      Display 'SQLSTATE : ' SQLSTATE
016400      Display 'SQLMedd : ' SQLERRMC(1:SQLERRML)
016500      Move 99 to Return-Code
016600      Set KLAR to True
016700          .
016800*-----
016900 End Program OVN43.
017000*-----
```

Övning 5 – COBOL DELETE

Uppgift 1 – DELETE med felhantering

```
000100 Identification Division.
000200 Program-Id. OVN51.
000300 Environment Division.
000400 Input-Output Section.
000500 File-Control.
000600     Select DATAIN Assign to DATADD
000700         Organization is Sequential
000800         Access is Sequential
000900     .
001000 Data Division.
001100
001200 File Section.
001300 FD Datain Recording Mode F.
001400 01 Datain-Post Pic X(80).
001500
001600 Working-Storage Section.
001700     Exec SQL
001800         Include SQLCA
001900     End-Exec
002000     .
002100     Exec SQL
002200         Include DRYCK
002300     End-Exec
002400     .
002500     Exec SQL
002600         Include PRIS
002700     End-Exec
002800     .
002900 01 WS-Datain-Post.
003000     05 WS-In-Drycknr Pic 9(05).
003100     05                               Pic X(06).
003200     05 WS-In-Volym   Pic 9(04).
003300     05                               Pic X(05).
003400     05 WS-In-Pris    Pic 9(04).
003500     05                               Pic X(05).
003600     05 WS-In-Prdatum Pic X(10).
003700
003800 01 Villkor          Pic 9(01) Value 0.
003900     88 Klar          Value 1.
004000
004100 01 SQL-Data.
004200     05 WS-SQLCODE    Pic +(09).
004300
004400 01 Raknare.
004500     05 Antal-Rader   Pic 9(04) Value 0.
004600     05 Antal-DeleteFel Pic 9(04) Value 0.
004700     05 Antal-Delete   Pic 9(04) Value 0.
004800     05 Antal-FelDrycknr Pic 9(04) Value 0.
004900     05 Antal-AnnatFel Pic 9(04) Value 0.
005000
005100
005200 Procedure Division.
005300     Display '-->> Programmet startar...'
005400     Perform Oppna-Datain
005500     Perform Laes-Datain Until Klar
```

```
005600 Perform Stang-Datain
006300 Display '-->> Programmet avslutar...'
006400 Perform Skriv-Summering
006500
006600 GoBack
006700 .
006800*-----
006900 Oppna-Datain.
007000*-----
007100 Open Input DATAIN
007200 Display '-->> Datain öppnad...'
007300 .
007400*-----
007500 Laes-Datain.
007600*-----
007700 Read DATAIN Into WS-Datain-Post
007800 At End
007900 Set Klar to True
008000 Not At End
008100 Perform Behandla-Datain-Post
008200 End-Read
008300 .
008400*-----
008500 Behandla-Datain-Post.
008600*-----
008700 Add 1 to Antal-Rader
008800 Move WS-In-Drycknr to Drycknr in Dcldryck
008900
009000 Exec SQL
009100 Select
009200 Drycknamn
009300 Into
009400 :Drycknamn
009500 From
009600 UTB00.DRYCK
009700 Where
009800 Drycknr = :Dcldryck.Drycknr
009900 End-Exec
010000
010100 Evaluate SQLCODE
010200 When 0
010300 Perform SQL-Delete-Pris
010400 When 100
010500 Display '*** Fel Drycknr: '
010510 WS-In-Drycknr
010600 Add 1 to Antal-FelDrycknr
010700 When Other
010800 Add 1 to Antal-AnnatFel
010900 Perform SQL-Fel
011000 End-Evaluate
011100 .
011200*-----
011300 SQL-Delete-Pris.
011400*-----
011500
011600 Move Ws-In-Drycknr to Drycknr in DclPris
011700 Move Ws-In-Prdatum to Prdatum in DclPris
011800 Move Ws-In-Volym to Volym in DclPris
011900 Exec SQL
012000 Delete
012100 From UTB00.Pris
012200 Where
```

```

012300      Drycknr = :Dclpris.Drycknr
012400      And
012500      Prdatum = Date(:Dclpris.Prdatum)
012600      And
012700      Volym   = :Dclpris.Volym
012800      End-Exec
012900
013000      Add 1 to Antal-Rader
013100      Evaluate SQLCODE
013200      When 0
013300          Add 1 to Antal-Delete
013400      When 100
013500          Display '*** Fel vid DELETE '
013600              WS-Datain-Post
013700          Add 1 to Antal-DeleteFel
013800      When Other
013900          Display '*** Annat fel      '
014000              WS-Datain-Post
014100          Add 1 to Antal-AnnatFel
014200          Perform SQL-Fel
014300      End-Evaluate
014400      .
014500*-----
014600      Stang-Datain.
014700*-----
014800          Close Datain
014900          Display '-->> Datain stängd...'
015000      .
015100*-----
015200      Skriv-Summering.
015300*-----
015400      Display '-----'
015500      Display 'A N T A L      Behandlade rader : '
015600          Antal-Rader
015700      Display '                Korrekta Delete : '
015800          Antal-Delete
015900      Display '                Felaktiga Delete : '
016000          Antal-DeleteFel
016100      Display '                Felaktiga Drycknr : '
016200          Antal-FelDrycknr
016300      Display '                Andra fel      : '
016400          Antal-AnnatFel
016500      Display '-----'
016600      .
016700*-----
016800      SQL-Fel.
016900*-----
017000      Move SQLCODE to WS-SQLCODE
017100      Display '*** SQL-Fel ***'
017200      Display 'SQLCODE : ' WS-SQLCODE
017300      Display 'SQLSTATE : ' SQLSTATE
017400      Display 'SQLMedd : ' SQLERRMC(1:SQLERRML)
017500      Move 99 to Return-Code
017600*      Set KLAR to True
017700      .
017800*-----
017900      End Program OVN51.
018000*-----

```

