

## MEDII DE PROIECTARE SI PROGRAMARE – LABORATOR 2

### 1. Calculul unei resurse de tip resursa financiara

Vom considera resursele financiare ale unei persoane fizice.

Pas 1 Schema bazei de date:

Tabela ce descrie intrari de resurse financiare:

Incasari (IdInc, DataInc, IdRF, Cantitate, IdFurnizor)

Incasari	
Field Name	Data Type
IdInc	AutoNumber
DataInc	Date/Time
IdRF	Number
Cantitate	Currency
IdFurnizor	Number

Incasari					
IdInc	DataInc	IdRF	Cantitate	IdFurnizor	
4	2/5/2020	2	150.00	2	
5	2/10/2020	1	2,500.00	1	
6	2/11/2020	1	60.00	5	
7	2/12/2020	3	20.00	3	
8	2/12/2020	4	10.00	3	

Tabela ce descrie iesiri de resurse financiare

Plati ( IdPI, DataPI, IdRF, Cantitate, IdBeneficiar)

Plati	
Field Name	Data Type
IdPI	AutoNumber
DataPI	Date/Time
IdRF	Number
Cantitate	Currency
IdBeneficiar	Number

Plati					
IdPI	DataPI	IdRF	Cantitate	IdBeneficiar	
31	2/6/2020	1	40.00	1	
32	2/6/2020	4	300.00	6	
33	2/7/2020	1	60.00	2	
34	2/8/2020	3	200.00	3	
35	2/9/2020	4	150.00	4	
36	2/10/2020	2	100.00	5	

Tabela ce descrie starea initiala a resursei:

StocInitial(Data, IdRF, Cantitate)

StocInitial	
Field Name	Data Type
Data	Date/Time
IdRF	Number
Cantitate	Currency

StocInitial		
Data	IdRF	Cantitate
2/1/2020	1	3,000.00
2/1/2020	2	300.00
2/1/2020	3	5,000.00
2/1/2020	4	600.00

Tabela ce descrie tipurile de resurse:

RF(IdRF, DRF, Moneda)

RF	
Field Name	Data Type
IdRF	AutoNumber
DRF	Short Text
Moneda	Short Text

RF		
IdRF	DRF	Moneda
1	Numerar1	RON
2	Numerar2	EURO
3	ContBRC	RON
4	ContBT	EURO

Tabele ce descriu agenti, entitati ce pot afecta resursele:

Furnizori(IdFurnizor, DFurnizor)

Beneficiari(IdBeneficiar, DBeneficiar)

Furnizori	
Field Name	Data Type
IdFurnizor	AutoNumber
DFurnizor	Short Text

Furnizori	
IdFurnizor	DFurnizor
1	Salariu
2	Inchiriere
3	Dobanzi
4	Imprumut
5	Meditatii

Beneficiari	
Field Name	Data Type
IdBeneficiar	AutoNumber
DBeneficiar	Short Text

Beneficiari	
IdBenefic	DBeneficiar
1	Alimente
2	Combustibil
3	Intretinere
4	Rata credit
5	Restituire imprumut
6	Excursii

Alte tabele

Operatii(IdOperatie, DOperatie)

Operatii	
Field Name	Data Type
IdOperatie	Number
DOperatie	Text

Operatii	
IdOperatie	DOperatie
1	Stoc Initial
2	Incasari
3	Plati
4	Stoc Final

Tabele ce descriu starea curenta a resursei (se calculeaza )

Stoc (IdRF, Cantitate)

Stoc	
Field Name	Data Type
IdRF	Number
Cantitate	Currency

Tabela de manevra, necesara calculului stocului:

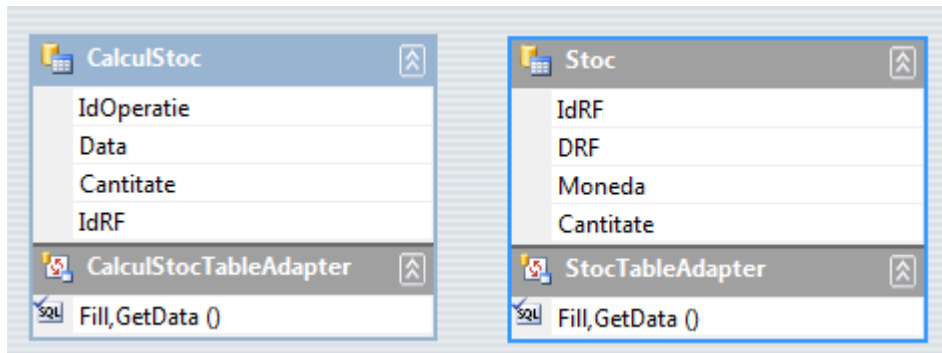
CalculStoc (IdOperatie, Data, IdRF, Cantitate)

CalculStoc	
Field Name	Data Type
IdOperatie	Number
Data	Date/Time
IdRF	Number
Cantitate	Currency

Observatii:

1. Tabelele CalculStoc nu are cheie primara.

## Pas 2. Proiectarea DataSet-ului



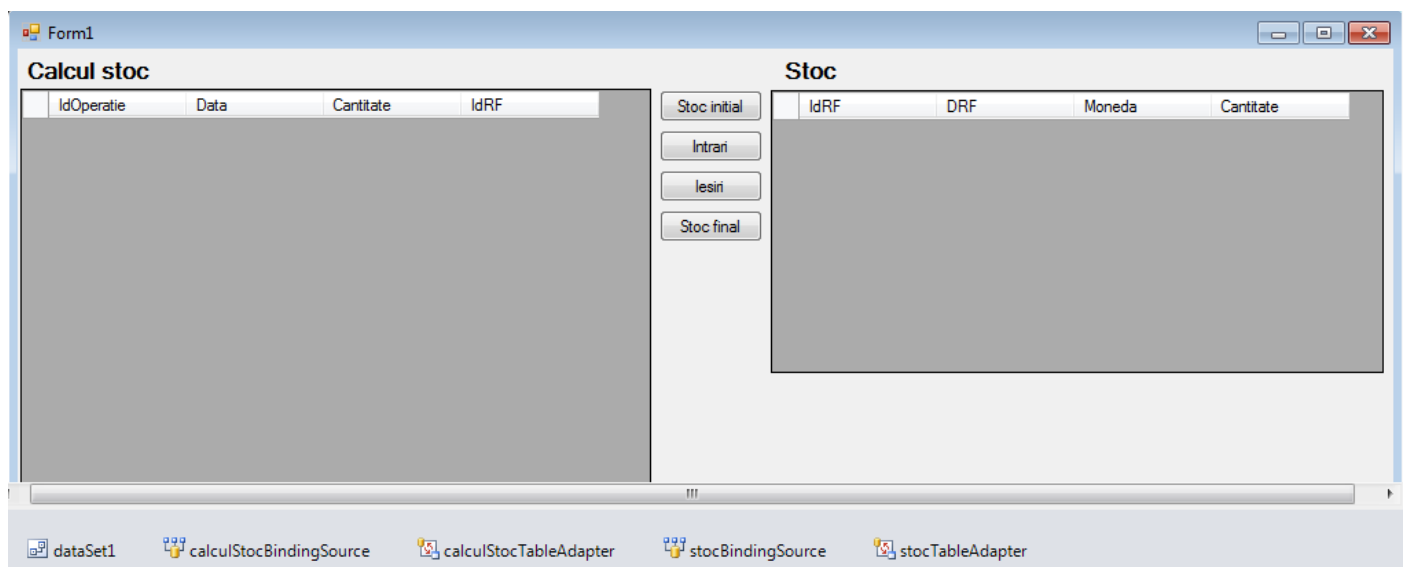
### Cererea SQL pt. StocTableAdapter :

```
SELECT    Stoc.IdRF, RF.DRF, RF.Moneda, Stoc.Cantitate
FROM      (Stoc LEFT OUTER JOIN
           RF ON Stoc.IdRF = RF.IdRF)
ORDER BY RF.DRF
```

### Cererea SQL pt. calculStocTableAdapter :

```
SELECT    IdOperatie, Data, IdRF, Cantitate
FROM      CalculStoc
ORDER BY IdOperatie, Data
```

## Pas 3. Proiectarea form-ului



## Pas 4. Implementare

Resurse necesare:

```
using System.Data.OleDb;
```

Variabile locale clasei Form1:

```
private OleDbConnection con =new OleDbConnection();
private OleDbCommand cmd = new OleDbCommand();
```

Metode eveniment:

```
private void Form1_Load(object sender, EventArgs e) {

    //Configurez obiectele conexiune si comanda
    con.ConnectionString = calculStocTableAdapter.Connection.ConnectionString;
    cmd.Connection = con;

    //Sterg continut tabele CalculStoc si Stoc
    con.Open();
    cmd.CommandText = "Delete * from CalculStoc";
    cmd.ExecuteNonQuery();

    cmd.CommandText = "Delete * from Stoc";
    cmd.ExecuteNonQuery();

    con.Close();

    this.calculStocTableAdapter.Fill(this.dataSet1.CalculStoc);
    this.stocTableAdapter.Fill(this.dataSet1.Stoc);
}

private void btnStocInitial_Click(object sender, EventArgs e){
    con.Open();

    //Stoc Initial
    cmd.CommandText = "Insert into CalculStoc(IdOperatie, Data, IdRF, Cantitate) " +
        "Select 1,Data, IdRF, Cantitate " +
        "From StocInitial";

    try { cmd.ExecuteNonQuery(); }
    catch (Exception ex) { MessageBox.Show(ex.Message); }
    con.Close();

    //Incarc dataTable-ul CalculStoc
    dataSet1.CalculStoc.Clear();
    calculStocTableAdapter.Fill(this.dataSet1.CalculStoc);
}

private void btnIntrari_Click(object sender, EventArgs e) {
    // Intrari
    con.Open();

    cmd.CommandText = "Insert into CalculStoc(IdOperatie, Data, IdRF, Cantitate) " +
        "Select 2,DataInc as Data, IdRF, Cantitate " +
        "From Incasari";
    try { cmd.ExecuteNonQuery(); }
    catch (Exception ex) { MessageBox.Show(ex.Message); }
    con.Close();

    //Incarc dataTable-ul CalculStoc
    dataSet1.CalculStoc.Clear();
    calculStocTableAdapter.Fill(this.dataSet1.CalculStoc);
}

private void btnIesiri_Click(object sender, EventArgs e) {
    //Iesiri
    con.Open();
    cmd.CommandText = "Insert into CalculStoc(IdOperatie, Data, IdRF, Cantitate) " +
        "Select 3,DataPl as Data, IdRF, -Cantitate " +
        "From Plati";
    try { cmd.ExecuteNonQuery(); }
    catch (Exception ex) { MessageBox.Show(ex.Message); }
    con.Close();

    //Incarc dataTable-ul CalculStoc
    dataSet1.CalculStoc.Clear();
}
```

```

        calculStocTableAdapter.Fill(this.dataSet1.CalculStoc);
    }

    private void btnStocFinal_Click(object sender, EventArgs e) {
        con.Open();

        // Calculez totaluri pe Cantitate si grupez pe IdProdus
        // inserez rezultatul in tabela Stoc
        cmd.CommandText = "INSERT INTO Stoc ( IdRF, Cantitate ) " +
            "SELECT IdRF, Sum(CalculStoc.Cantitate) AS Cantitate " +
            "FROM CalculStoc GROUP BY CalculStoc.IdRF";

        cmd.ExecuteNonQuery();

        //Stoc final

        cmd.CommandText = "INSERT INTO CalculStoc ( IdOperatie, IdRF, Cantitate, Data ) " +
            "SELECT 4, CalculStoc.IdRF, Sum(CalculStoc.Cantitate) AS Cantitate, now() " +
            "FROM CalculStoc GROUP BY CalculStoc.IdRF";
        cmd.ExecuteNonQuery();

        con.Close();

        //Incarc dataTable-ul CalculStoc si Stoc
        dataSet1.CalculStoc.Clear();
        calculStocTableAdapter.Fill(this.dataSet1.CalculStoc);

        dataSet1.Stoc.Clear();
        stocTableAdapter.Fill(this.dataSet1.Stoc);
    }
}

```

## Executie:

### 1. Initial

### 2. Dupa click pe butonul Stoc initial

IdOperatie	Data	Cantitate	IdRF
1	2/1/2020	600	4
1	2/1/2020	5000	3
1	2/1/2020	300	2
1	2/1/2020	3000	1

### 3. Dupa click pe butonul Intrari

Form1

**Calcul stoc**

IdOperatie	Data	Cantitate	IdRF
1	2/1/2020	600	4
1	2/1/2020	5000	3
1	2/1/2020	300	2
1	2/1/2020	3000	1
2	2/5/2020	150	2
2	2/10/2020	2500	1
2	2/11/2020	60	1
2	2/12/2020	10	4
2	2/12/2020	20	3

**Stoc**

IdRF	DRF	Moneda	Cantitate
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Stoc initial  
Intrari  
Iesiri  
Stoc final

### 4. Dupa click pe butonul Iesiri

Form1

**Calcul stoc**

IdOperatie	Data	Cantitate	IdRF
1	2/1/2020	5000	3
1	2/1/2020	300	2
1	2/1/2020	3000	1
2	2/5/2020	150	2
2	2/10/2020	2500	1
2	2/11/2020	60	1
2	2/12/2020	10	4
2	2/12/2020	20	3
3	2/6/2020	-300	4
3	2/6/2020	-40	1
3	2/7/2020	-60	1
3	2/8/2020	-200	3
3	2/9/2020	-150	4
3	2/10/2020	-100	2

**Stoc**

IdRF	DRF	Moneda	Cantitate
------	-----	--------	-----------

Stoc initial  
Intrari  
Iesiri  
Stoc final

### 5. Dupa click pe butonul Stoc final

Form1

**Calcul stoc**

IdOperatie	Data	Cantitate	IdRF
2	2/10/2020	2500	1
2	2/11/2020	60	1
2	2/12/2020	10	4
2	2/12/2020	20	3
3	2/6/2020	-300	4
3	2/6/2020	-40	1
3	2/7/2020	-60	1
3	2/8/2020	-200	3
3	2/9/2020	-150	4
3	2/10/2020	-100	2
4	9/12/2008 1:48 ...	160	4
4	9/12/2008 1:48 ...	5460	1
4	9/12/2008 1:48 ...	350	2
4	9/12/2008 1:48 ...	4820	3

**Stoc**

IdRF	DRF	Moneda	Cantitate
3	ContBRC	RON	4820
4	ContBT	EURO	160
1	Numerar1	RON	5460
2	Numerar2	EURO	350

Stoc initial  
Intrari  
Iesiri  
Stoc final

## Teme

1. Implementati aplicatia data
2. Realizati un form care sa contina doua grid-uri Calcul stoc si Stoc, fara butoane, dar care sa filtreze Calcul stoc cu id-ul materialului curent din Stoc.

Grid-ul Stoc va contine doar coloanele:

DRF (Redenumit Resursa), Cantitate (Redenumit Suma) si Moneda

Grid-ul Calcul Stoc va contine doar coloanele:

DOperatie (Redenumit Operatie), Data, Cantitate (Redenumit Suma)

3. Dezvoltati o aplicatie care sa contina functii de vizualizare si actualizare pt.

Agenti (Furnizori, Beneficiari)

Evenimente (Incasari, Plati)

Arhiva resursa (StocInitial)

Tip resursa (RF)

si functii de calcul si vizualizare resursa (Stoc, CalculStoc)