

A. Baza de date nenormalizata

1. Se incarca baza_test în server-ul MySql

2. SELECT * FROM inregistrare i; valori

3. Se noteaza timpii de acces la informatii :

"x rows fetched in y s (z s)" ~0.0020s

4. Se face selectie SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL';

"x rows fetched in y s (z s)" ~0.0037s

5. Se face selectie SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL' AND Amb='Lada';

"x rows fetched in y s (z s)" ~0.0041s

6. Se face selectie SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL' AND Amb='Lada' AND Tip='Refrigerat';

"x rows fetched in y s (z s)" ~0.0050s

7. Se face selectie SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL' AND Amb='Lada' AND Tip='Refrigerat' AND Prod='ARIPi';

"x rows fetched in y s (z s)" ~0.0090s

8. Ordonare dupa data SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL' AND Amb='Lada' AND Tip='Refrigerat' AND Prod='ARIPi' ORDER BY `Data` DESC;

"x rows fetched in y s (z s)" ~0.0113s

9. Se adauga indecsi. Se verifica in Mysql Administrator efectul.

Mysql Administrator Data: 1.5M, Index: 1.3M

10. Se reface ultima selectie SELECT * FROM inregistrare i WHERE Dest='AGRICOLA INTERNATIONAL' AND Amb='Lada' AND Tip='Refrigerat' AND Prod='ARIPi' ORDER BY `Data` DESC;

"x rows fetched in y s (z s)" ~0.0030s

B. Se incarca baza de date normalizata

11. Se reface ultima selectie SELECT * FROM inregistrare i WHERE Destinatie= 23 AND Ambalaj= 3 AND Tip_Produs=1 AND Produs=20 ORDER BY `Data` DESC;

"x rows fetched in y s (z s)" ~0.0079s

12. Se adauga indecsi. Se verifica in Mysql Administrator efectul.

Mysql Administrator Data: 1.5M, Index: 0.9M

13. Se reface ultima selectie SELECT * FROM inregistrare i WHERE Destinatie= 23 AND Ambalaj= 3 AND Tip_Produs=1 AND Produs=20 ORDER BY `Data` DESC;

"x rows fetched in y s (z s)" ~0.0057s

14. Timpul de comunicare

"x rows fetched in y s (z s)" ~0.0121s (0.0057s)

15. Se limiteaza cantitatea de date la minimul necesar SELECT ID_INREGISTRARE,`Data`,`Net` FROM inregistrare i WHERE Destinatie = 23 AND Ambalaj = 3 AND Tip_Produs = 1 AND Produs = 20 ORDER BY `Data` DESC;

"x rows fetched in y s (z s)" ~0.0042s (0.0023s)

C. Asamblare rezultate in baza de date normalizata

16. Adunarea datelor prezente inițial în baza de date nenormalizata.

```
SELECT inr.`ID_INREGISTRARE`,inr.`Data`,inr.`Data_Lucru`,inr.`Lot`,l.`Data` AS data_lot,l.`Numar` AS
numar_lot, inr.`Brut`,inr.`Net`,a.`Nume` AS nume_amb, a.`Scurt` AS scurt_amb, t.`Nume` AS nume_tip,
t.`Scurt` AS scurt_tip, p.`Nume` AS nume_prod, p.`Scurt` AS scurt_prod, b.`Nume` AS scurt_ben,
b.`Complet` AS nume_ben, d.`Nume` AS scurt_dest, d.`Adresa` AS nume_dest
FROM `inregistrare` AS inr
LEFT JOIN `lot` AS l ON (inr.`Lot`=l.`ID_LOT`)
LEFT JOIN `ambalaj` AS a ON (inr.`Ambalaj`=a.`ID_AMBALAJ`)
LEFT JOIN `tip_produs` AS t ON (inr.`Tip_Produs`=t.`ID_TIP`)
LEFT JOIN `produs` AS p ON (inr.`Produs`=p.`ID_PRODUS`)
LEFT JOIN `destinatie` AS d ON (inr.`Destinatie`=d.`ID_DESTINATIE`)
LEFT JOIN `beneficiar` AS b ON (d.`Beneficiar`=b.`ID_BENEFICIAR`)
ORDER BY `Data` DESC LIMIT 10
```

Fara index

"x rows fetched in y s (z s)" ~0.0121s (0.0190s)

Cu index

"x rows fetched in y s (z s)" ~0.0108s (0.0007s)

D. Cautari Complexe

17. Aflarea numar/tip de ambalaje plecate la data 11.03.2008 spre destinatia "INTEREX Vaslui" (in vederea recuperarii lor)

```
SELECT inr.`Ambalaj`,inr.`Produs`,leg.`Tara`, SUM(leg.`Nr`) AS Val
      FROM `inregistrare` AS inr
LEFT JOIN `leg_inreg_tara` AS leg ON (inr.`ID_INREGISTRARE`=leg.`Inregistrare`)
WHERE inr.`Destinatie` = 100 AND inr.`Data_Lucru` = '2008-03-11'
GROUP BY leg.`Tara` ASC,inr.`Ambalaj` ASC,inr.`Produs` ASC WITH ROLLUP
```

Fara index

"x rows fetched in y s (z s)" ~0.0031s (0.1216s)

Cu index

"x rows fetched in y s (z s)" ~0.0045s (0.0012s)

18. Cantitatea totala de produse organizata pe tip produs, predata beneficiarilor intre 10.03.2008 și 18.03.2008. Organizare pe tip produs, total pentru fiecare beneficiar in parte

```
SELECT d.`Beneficiar`,inr.`Tip_Produs`,ROUND(SUM(inr.`Net`),2) AS Val
      FROM `inregistrare` AS inr
LEFT JOIN `destinatie` AS d ON (inr.`Destinatie`=d.`ID_DESTINATIE`)
WHERE inr.`Data_Lucru` BETWEEN '2008-03-10' AND '2008-03-18'
GROUP BY d.`Beneficiar` ASC,inr.`Tip_Produs` ASC WITH ROLLUP
```

Fara index

"x rows fetched in y s (z s)" ~0.0016s (0.0089s)

Cu index

"x rows fetched in y s (z s)" ~0.0016s (0.0092s)

19. Afisarea tarii totale si a modului de obtinere pentru fiecare cantarire.

```
SELECT Inregistrare, CONVERT(GROUP_CONCAT(l.Nr,'x',t.Greutate,'kg') USING latin1) AS Lista,
SUM(Nr*Greutate) AS total FROM leg_inreg_tara l
LEFT JOIN tara AS t ON (l.`Tara`=t.ID_TARA)
GROUP BY Inregistrare;
```

Fara index

"x rows fetched in y s (z s)" ~0.0822s (0.0167s)

Cu index

"x rows fetched in y s (z s)" ~0.0801s (0.0166s)

Cu index (Inregistrare,Tara)

"x rows fetched in y s (z s)" ~0.0921s (0.0091s)

20. Verificarea eventualelor erori

```
SELECT Inregistrare, SUM(Nr*Greutate) AS total,(i.Brut-i.Net) AS diferenta,  
ROUND(ABS(SUM(Nr*Greutate)-(i.Brut-i.Net)),4) AS eroare FROM leg_inreg_tara l  
LEFT JOIN tara AS t ON (l.`Tara`=t.ID_TARA)  
LEFT JOIN inregistrare AS i ON (l.`Inregistrare`=i.ID_INREGISTRARE)  
GROUP BY Inregistrare;
```

Cu index

"x rows fetched in y s (z s)" ~0.1340s (0.0093s)

```
SELECT ID_INREGISTRARE, (Brut-Net) AS diferenta, ROUND(ABS(suma_tara.total-Brut+Net),4) AS eroare  
FROM inregistrare AS i  
LEFT JOIN  
(SELECT Inregistrare, SUM(Nr*Greutate) AS total FROM leg_inreg_tara l  
LEFT JOIN tara AS t ON (l.`Tara`=t.ID_TARA) GROUP BY Inregistrare) AS suma_tara  
ON (suma_tara.`Inregistrare`=i.ID_INREGISTRARE)
```

Cu index

"x rows fetched in y s (z s)" ~3.3426s (0.3144s)

```
SELECT Inregistrare,total,ROUND(ABS(total-i.Brut+i.Net),4) AS eroare FROM (SELECT Inregistrare,  
SUM(Nr*Greutate) AS total FROM leg_inreg_tara l  
LEFT JOIN tara AS t ON (l.`Tara`=t.ID_TARA)  
GROUP BY Inregistrare) AS suma_tara  
LEFT JOIN inregistrare AS i ON (suma_tara.`Inregistrare`=i.ID_INREGISTRARE)
```

Cu index

"x rows fetched in y s (z s)" ~0.0498s (0.0336s)