Documentation Pandora ERP system.

2. Accounts and access control.

Description operation accounts table.

Accounts:

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-----------------+------------------------+-----------+----------+------------------------------
 accountID       | integer                |           | not null |
 aanhef          | character varying(8)   |           |          | ''::character varying
 voornaam        | character varying(30)  |           |          | ''::character varying
 tussenvoegsel   | character varying(10)  |           |          | ''::character varying
 achternaam      | character varying(50)  |           |          | ''::character varying
 postcode        | character varying(6)   |           |          | ''::character varying
 huisnummer      | character varying(5)   |           |          |
 telnr           | character varying(10)  |           |          |
 toevoeging      | character varying(8)   |           |          | ''::character varying
 email           | character varying(255) |           |          |
 password        | character varying(255) |           |          |
 account_created | character varying(10)  |           |          |
 account_count   | integer                |           |          |
 geboortedatum   | character varying(10)  |           |          |
 p1              | character varying(8)   |           |          | 10111100
 p2              | character varying(8)   |           |          | '00000000'::character varying
 p3              | character varying(8)   |           |          | '00000000'::character varying
 p4              | character varying(8)   |           |          | '00000000'::character varying
 p5              | character varying(8)   |           |          | '00000000'::character varying
 p6              | character varying(8)   |           |          | '00000000'::character varying
 p7              | character varying(8)   |           |          | '00000000'::character varying
 p8              | character varying(8)   |           |          | '00000000'::character varying
 p9              | character varying(8)   |           |          | '00000000'::character varying
 p10             | character varying(8)   |           |          | '00000000'::character varying
 p11             | character varying(8)   |           |          | '00000000'::character varying
 p12             | character varying(8)   |           |          | '00000000'::character varying
 p13             | character varying(8)   |           |          | '00000000'::character varying
 p14             | character varying(8)   |           |          | '00000000'::character varying
 p15             | character varying(8)   |           |          | '00000000'::character varying
 p16             | character varying(8)   |           |          | '00000000'::character varying
Indexes:
    "accounts_pkey" PRIMARY KEY, btree ("accountID")
Referenced by:
    TABLE "loonbetalingen" CONSTRAINT "account.accountID_fkey" FOREIGN KEY ("accountID") REFERENCES accounts("accountID")
    TABLE "lev_accounts" CONSTRAINT "accounts_accountID" FOREIGN KEY ("accountID") REFERENCES accounts("accountID")
    TABLE "klanten" CONSTRAINT "accounts_accountID_fkey" FOREIGN KEY ("accountID") REFERENCES accounts("accountID")
    TABLE "werknemers" CONSTRAINT "accounts_accountID_fkey" FOREIGN KEY ("accountID") REFERENCES accounts("accountID")
    TABLE "koper_accounts" CONSTRAINT "accounts_accountID_fkey" FOREIGN KEY ("accountID") REFERENCES accounts("accountID")
```

Above a screenshot of the table with its connections.

We will explain the fields accountID, email, password, postcode, huisnummer, account_created, account_count, geboortedatum, and the fields p1 – p16. The rest will be known.

accountID: The primary key off the table and also one possibility to logon. It's also possible to logon with the email address. The accountID is an 11 check weight number, which begins with a 1 and is 9 positions.
Email: second possibility to logon.
Password: The password is encrypted with argon2. The password must be at least 8 positions. It would be a small effort to extend this with for instance 2 numbers or special signs and so on.
The postcode and house number is used by the module postcode and the tables postcodes, straat en plaats.
With the postcode 4 numbers and 2 capital letters and the house number the street and residence are looked up. It's the Dutch postcode table.
Account_created: the date the account is created. The format is yyyy-mm-dd
Account_count: number of times the account logon the system.
Date of birth. Format yyyy-mm-dd
The fields p1 – p16 serve to give entrance to certain menus or submenus.
The data consists of 8 positions of zeros or ones.

The thirst position stand for access to main menu. 0 = no access, 1 = access.
If the main menu is 0 the whole menu is disabled and greyed out. The submenu lines are disabled and greyed out if the interpretation according to competences are 0.
The menu items are:
p1 up to and including p16:
The indexes 0 for the menus are:
p1[0]-accounts, p2[0]-suppliers) p3[0]-employees, p4[0]-purchase, p5[0]-sales, p6[0]-warehouse, p7[0]-works internally, p8[0]-works externally, p9[0]-calculation works internally, p10[0],calculation works externally, p11[0]-payroll administration), p12[0]-accountancy,p13[0]-inventory management, p14[0]-management information, p15[0]-maintenance), p16[0]-reprint forms).
The indexes of the data positions 1 towards 7 stands for:
This positions are only accessible then the thirst position has been activated (menu item).
p(x)x[1] = special access (sensitive information or strictly personal)
p(x)x[2] = ordering (purchase or sales)
p(x)x[3] = input new item
p(x)x[4] = change item
p(x)x[5] = print items
p(x)x[6] = request / query
p(x)x[7] = level
where (x)x stands for 1 - 16

With the last menu item reprint forms, only the menu is enabled / disabled
The possibility to print forms are linked via the other main menus.
If the main menu is accessible for the user but the submenu item is not, the submenu items are greyed out and not accessible.
The permissions to menus and submenus can be set, by an authorized person in the menu maintenance – mutate authorizations.

For extra secured items a 2 step verification is necessary. It it obligatory to set both the “special” authorization and the normal authorization (ordering, insert, modify, request, printing or query).

These items are:
Menu ‘Works externally’ – ‘9. Parameters Services’,
Menu ‘Payroll administration’ – ‘8. Parameters Hours' – ‘9. Parameters Wages' –
‘10. Parameters Periods-Wages',
Menu ‘Accounting’ – '8. Parameters Finance'
Menu ‘Management Information’ – '5. Parameters Graphs',
Menu ‘Maintenance’ – ‘1. Mutate authorizations' – '4. Parameters System'

Furthermore, a two-step verification has been set up for sublevel menu items so it’s possible to set disabled items in certain submenu’s. The two step verification is the “level” authorization (7th position) and the normal authorization (ordering, insert, modify, request, printing or query).
This item is:
Menu ‘Purchase’ - '4. Ordering / view orders equipment'

The authorizations in the remaining menu items must be set according to following list:
The list consists of 15 sections representing 15 menus.
The positions within the section represents the menu lines.

The number of this positions represent the authorization.
When it's set in maintenance Mutate authorizations the authorization is granted, when it's unset authorization is denied.
For instance:
Section 1 represent the first menu, section 2 represent the second menu and so on.
The first position in the section represent access to menu.
The second position in the section represent the 1st menu line and so on.
The number of the position represent the authorization.

1 = Special
2 = Ordering
3 = Insert
4 = Modify
5 = Printing
6 = Query
7 = Level

([0, 4, 6, 2, 2, 5],[0, 3, 4, 6, 1],[0, 1, 4, 6, 6],[0, 3, 4, 3, 7, 6, 6, 6],[0, 3, 4, 6, 1, 6],\
[0, 3, 4, 6, 4, 5, 1, 6, 3, 6],[0, 3, 4, 6, 3, 5, 3],[0, 3, 4, 6, 2, 6, 3, 3, 3, 1],\
[0, 3, 4, 6, 3, 6, 3, 6, 1, 1],[0, 4, 4, 6, 3, 6, 3, 6, 1, 1],[0, 6, 2, 1, 6, 3, 4, 1, 1, 1, 1],\
[0, 6, 6, 2, 6, 2, 5, 6, 1, 6],[0, 2, 1, 1, 1],[0, 1, 6, 6, 6, 1],[0, 1, 3, 3, 1, 4],[0])

Default permissions are set when creating an account.
These permissions are:
Insert own account from the main logon screen, change own account, ordering online products, request your (own) order overviews, printing (own) invoices.
The accounts can be linked to employees, sales (the employees of the sale company) or Purchase (the employees of the purchasing company). This accounts can only access there own company data.
Default the account is linked to clients. Specific for information about payments.

When calling the program modules from het main menu one or more parameters are included. The main parameter is the email address of the user who is logged on. The purpose of this parameter is to remain access control by returning to the main menu with this parameter, so the authorizations can be set, without logging in again. Furthermore several parameters are set by calling certain modules for next purposes:

1. Starting same modules with a routing parameter for different work departments, so the modules acts different.
   Example menu sales view online orders The buttons print packing slip and print invoice are disabled with this entrance.
   By menu warehouse is button print backing slip enabled and by menu accounting is button print invoices enabled.
2. Starting a module with parameters and returning for executing the module with functions which changed values are held by the system. A good example here is data transaction hours by menus Internal works and external works.
   Here the last changed work number and account number is held by the system. Also the state of the button Transaction is colored red if a transaction fail and colored green if a transaction is successful.
   In this modules urenMutaties.py and urenImutaties.py also totals of worked and budgeted hours

per discipline are showed, with there concerning discipline for consumption hours usage information. (hours monitoring)

3. Starting a module with a parameter for writing and reading in different database tables by different menu entries.
   Example here is item call by menus Internal works and external works..