

# Kölner Phonetik

In a German speaking environment, you need a language phonetic search implementation which is different from Oracles default [soundex](#) implementation.

We use the Oracle PL/SQL implementation of "Kölner Phonetik" below.

```
CREATE OR REPLACE PACKAGE PCK_PHONETIK AS
/*
|| $Header: $
||
|| Name      : PKG_PHONETIK
|| Aufgabe:  An implementation of "Koelner Phonetik"
|| Autor   : 13.02.2017, Jan Schreiber
||
*/

FUNCTION GET_CODE (
    I_STRING          IN VARCHAR2)
RETURN VARCHAR2;
END PCK_PHONETIK;
/

CREATE OR REPLACE PACKAGE BODY PCK_PHONETIK AS
/*-----
||
|| 2017.02.13 Jan Schreiber: An implementation of "Koelner Phonetik".
|| 2017.02.14 Jan Schreiber: Renamed to PCK_PHONETIK
|| 2917.02.16 Jan Schreiber: Aligned with Java class ColognePhonetic
||
*/-----
/*
This work is based on Andy Theilers github package: https://github.com/deezaster/germanphonetic
and Carsten Czarskis APEX implementation: https://apex.oracle.com/pls/apex/germancommunities/apexcommunity/tipp/1502/index.html
and the Java Commons 1.7 implementation ColognePhonetics from: http://archive.apache.org/dist/commons/codec/source/commons-codec-1.7-src.tar.gz

Source code: https://wiki.loopback.org/confluence/x/HoDR
*/
function soundex_ger (strword IN VARCHAR2,
                    intlen IN NUMBER DEFAULT 255)
return VARCHAR2 is

    word varchar2(255);
    wordlen number;
    checklen number;
    code varchar2(255);
    phoneticcode varchar2(255);
    intX number;

begin

    if intlen is null
    then
        checklen := 255;
    else
        checklen := intlen;
    end if;

    Word := lower(substr(strWord,0,checkLen));
    if length(Word) < 1 then return 0; end if;
    Word := REGEXP_REPLACE(
    REPLACE(
        REPLACE(
            Translate(Word, 'vwjyääöüéëêääç', 'ffiaoueeeeaac'),
            'ph', 'f'),
            'ß', 'ss'),
```

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    '['^a-zA-Z]', Null);
wordlen := length(word);
if wordlen = 1
then
    word := word || ' ' ;
end if;

if substr(word,1,1) = 'c'
then
    case
    when substr(word,2,1) in ('a','h','k','l','o','q','r','u','x') then
        Code := '4';
    else
        Code := '8';
    end case;
    intX := 2;
else
    intX := 1;
end if;

while intX <= wordlen loop
    case
    when substr(word,intX,1) in ('a','e','i','o','u') then
        code := code || '0';
    when substr(word,intX,1) = 'b' or substr(word,intX,1) = 'p' then
        code := code || '1';
    when substr(word,intX,1) = 'd' or substr(word,intX,1) = 't' then
        if intX < wordlen then
            case
            when substr(word,intX+1,1) in ('c','s','z') then
                code := code || '8';
            else
                code := code || '2';
            end case;
        else
            code := code || '2';
        end if;
    when substr(word,intX,1) = 'f' then
        code := code || '3';
    when substr(word,intX,1) in ('g','k','q') then
        code := code || '4';
    when substr(word,intX,1) = 'c' then
        if intX < wordlen then
            case
            when substr(word,intX+1,1) in ('a','h','k','o','q','u','x') then
                case
                when substr(word,intX-1,1) = 's' or substr(word,intX-1,1) = 'z' then
                    code := code || '8';
                else
                    code := code || '4';
                end case;
            else
                code := code || '8';
            end case;
        else
            code := code || '8';
        end if;
    when substr(word,intX,1) = 'x' then
        if intX > 1 then
            case
            when substr(word,intX-1,1) in ('c','k','x') then
                code := code || '8';
            else
                code := code || '48';
            end case;
        else
            code := code || '48';
        end if;
    when substr(word,intX,1) = 'l' then
        code := code || '5';
    when substr(word,intX,1) = 'm' or substr(word,intX,1) = 'n' then

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        code := code || '6';
    when substr(word,intX,1) = 'r' then
        code := code || '7';
    when substr(word,intX,1) = 's' or substr(word,intX,1) = 'z' then
        code := code || '8';
    else
        code := code;
    end case;

    intX := intX + 1;
end loop;

phoneticcode := translate(regexp_replace(code, '(.)\1+', '\1'), '1234567890', '123456789');

if substr(code,1,1) = '0'
then
    phoneticcode := '0' || phoneticcode;
end if;
return phoneticcode;

end soundex_ger;

function get_code
(i_string IN VARCHAR2)
return VARCHAR2
is
    len number;
    i number;
    k number;
    in_string varchar2(4000);
    out_string varchar2(4000);
    key_length constant number := 4;
begin
    i := 1;
    out_string := null ;
    in_string := regexp_replace(substr(translate(i_string,'.-;',' '),1,4000), '([\[:cntrl:]]|(^t)', ' ');
    len := length(in_string) ;
    while i <= len loop
        k := InStr(in_string, ' ', i);
        case
            when (k = i) then
                i := i +1;
            when (k > i) then
                out_string := trim(out_string || ' ' || substr(soundex_ger(substr(in_string, i, k-i)),1,key_length)) ;
                i := k+1 ;
            when (k = 0) then
                out_string := trim(out_string || ' ' || substr(soundex_ger(substr(in_string, i)),1,key_length)) ;
                i := len +1;
            end case;
        end loop;
    return out_string;
end get_code;
END PCK_PHONETIK;
/

```

The implementation table used is build on the article in German Wikipedia mentioned above:

Letter	Context	Code
A, E, I, J, O, U, Y		0
H		-
B		1
P	not before H	1
D, T	not before C, S, Z	2

F, V, W		3
P	before H	3
G, K, Q		4
C	in Anlaut before A, H, K, L, O, Q, R, U, X	4
C	before A, H, K, O, Q, U, X , but not behind S, Z	4
X	not behind C, K, Q	48
L		5
M, N		6
R		7
S, Z		8
C	behind S, Z	8
C	in Anlaut, but not before A, H, K, L, O, Q, R, U, X	8
C	not before A, H, K, O, Q, U, X	8
D, T	before C, S, Z	8
X	after C, K, Q	8