Project tasks

In this example we will create a application used for managing Project tasks. It's composed of two forms, the first one contains three tabs and from these tabs we can create projects, subprojects and task groups. The second form is composed of two tabs, the first one is for creating tasks and the second one for tasks search within selected criteria.
If we create a project, subproject or a task group using the first form, it will automatically save this item to the database "projecttask.db" and refresh the combo box items in the second form. Second form combo boxes are filled in with data from the database also. Forming of a new task will insert data into the "task" table of database.

```
base:="projecttask.db"
```

Name of the database file we are working with

```
w:=widget(0 , "Create Project")
set size(w , 650 , 200)
```

Creates a widget and sets it's size

```
projname:=database query(base , "SELECT Name FROM project ORDER BY Name ASC")
```

Creates a query string that will be executed in the function, **database query**

We want to determine the names of projects from a database

```
w1:=widget(0 , "Project")
set size(w1 , 600 , 100)
l11:=label(w1 , "Project Name")
set pos(l11 , 230 , 30)
li11:=line text box(w1 , "")
set pos(li11 , 230 , 50)

b1:=button(w1 , "Create Project")
set pos(b1 , 270 , 90)
```

```
w2:=widget(0 , "Subproject")
set size(w12 , 600 , 100)
l21:=label(w2 , "Select Project")
set pos(l21 , 130 , 30)
li21:=combo box(w2 , projname)
set pos(li21 , 130 , 50)
l22:=label(w2 , "Subproject Name")
set pos(l22 , 300 , 30)
li22:=line text box(w2 , "")
set pos(li22 , 300 , 50)

b2:=button(w2 ,  "Create Subproject")
set pos(b2 , 270 , 90)
```

Creates the widget for the project and subproject tabs

```
w3 := widget(0 , "Tast Group")
set pos(w3 , 600 , 100)
l31 := label(w3 , "Select Project")
set pos(l31 , 100 , 30)
li31 := combo box(w3 , projname)
set pos(li31 , 100 , 50)
```

Creates the widget for the task group tab

```
qq1 := "SELECT subproject.Name FROM subproject INNER JOIN project ON project.ID = "
qq1 += "subproject.proj_id WHERE project.Name = '" + widget value(li31) + "'"
subprojname := database query(base , qq1)
```

Creates a query that returns the subprojects names from a selected project

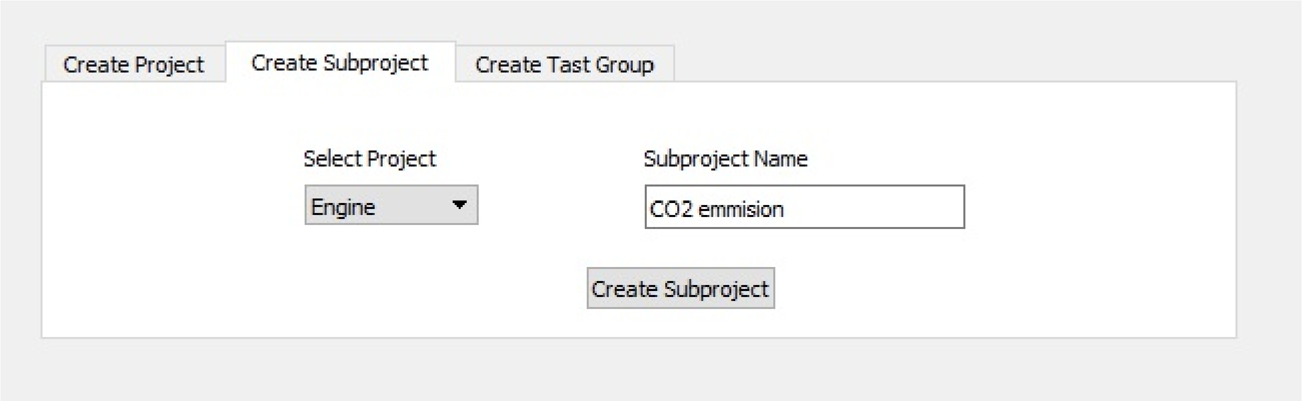
```
on event(li31 , reload())
```

On the change of li31 choice, run the function, reload()

```
l32 := label(w3 , "Select Subproject")
set pos(l32 , 230 , 30)
li32 := combo box(w3 , subprojname)
set pos(li32 , 230 , 50)
l33 := label(w3 , "Task Group Name")
set pos(l33 , 350 , 30)
li33 := line text box(w3 , "")
set pos(li33 , 350 , 50)
b3 := button(w3 , "Create Task Group")
set pos(b3 , 270 , 90)
```

```
reload( )
{
    qq2 := "SELECT subproject.Name FROM subproject INNER JOIN project ON project.ID = "
    qq2 += "subproject.proj_id WHERE project.Name = '" + widget value(li31) + "'"
    subproj := database query(base , qq2)
    if(is undefined(subproj))
    {
        set widget value(li32 , "")
    }
    else
    {
        set widget value(li32 , subproj)
    }
}
```

```
tab11 := tab widget( w , [ "Create Project"      , [ w1
                           "Create Subproject"       w2
                           "Create Tast Group" ]    w3 ] )
set pos(tab11 , 20 , 20)
set size(tab11 , 600 , 150)
```



Select Project: Engine

Subproject Name: CO2 emmision

```
ww := widget(0 , "Tasks")
set size(ww , 650 , 550)
w4 := widget(0 , "Create Task")
set size(w4 , 600 , 450)
l41 := label(w4 , "Select Project")
set pos(l41 , 70 , 30)
li41 := combo box(w4 , projname)
```

Creates the widget for tasks tabs

```
set pos(li41 , 70 , 50)
qq3 := "SELECT subproject.Name FROM subproject INNER JOIN project ON project.ID = "
qq3 += "subproject.proj_id WHERE project.Name = '" + widget value(li41) + "'"
subprojn := database query(base , qq3)
```

Creates a query that returns subprojects names from the selected project

```
on event(li41 , reload1( ))
l42 := label(w4 , "Select Subproject")
set pos(l42 , 240 , 30)
li42 := combo box(w4 , subprojn)
set pos(li42 , 240 , 50)
l43 := label(w4 , "Select Task Group")
set pos(l43 , 400 , 30)
```

Creates query that returns the task project names from the selected subproject

```
qq6 := "SELECT dgroup.Name FROM dgroup INNER JOIN subproject ON subproject.ID = "
qq6 += "dgroup.subproj_id WHERE subproject.Name = '" + widget value(li42) + "'"
groupnn := database query(base , qq6)

on event(li42 , reload2( ))
```

```
li43:=combo box(w4 , groupnn)
set pos(li43 , 400 , 50)
set size(li43 , 120 , 20)
```

```
g1:=group box(w4 , "Task")
set pos(g1 , 50 , 100)
set size(g1 , 500 , 300)
l44:=label(w4 , "Name")
set pos(l44 , 80 , 130)
li44:=line text box(w4 , "")
set pos(li44 , 80 , 150)
l45:=label(w4 , "Team")
set pos(l45 , 280 , 130)
```

Creates a tasks group box

```
qq8:="SELECT Name FROM team ORDER BY Name ASC"
 teamn:=database query(base , qq8)
li45:=combo box(w4 , teamn)
set pos(li45 , 280 , 150)
```

Creates a query that returns the team names from the database for a list box populating

```
l46:=label(w4 , "Person")
set pos(l46 , 380 , 130)
qq9:="SELECT Name FROM person ORDER BY Name ASC"
personn:=database query(base , qq9)
li46:=combo box(w4 , personn)
set pos(li46 , 380 , 150)
```

Creates a query that returns the person's names from the database for a list box populating

```
l47:=label(w4 , "Start Date (YYYY-MM-DD)")
set pos(l47 , 100 , 200)
li47:=line text box(w4 , "")
set pos(li47 , 100 , 220)
l48:=label(w4 , "End Date (YYYY-MM-DD)")
set pos(l48 , 340 , 200)
li48:=line text box(w4 , "")
```

Creates text boxes used for dates

```
set pos(li48 , 340 , 220)
```

```
l49 := label(w4 , "Complited")
set pos(l49 , 270 , 260)
li49 := double spin box(w4 , 0.0 , 100.0 , 0.1 , 0.0)
set pos(li49 , 270 , 280)
l410 := label(w4 , "Note")
set pos(l410 , 200 , 320)
li410 := text box(w4 , "")
set pos(li410 , 200 , 340)
set size(li410 , 210 , 50)
```

Creates a spin box and a text box for form

```
b4 := button(w4 , "Create Task")
set pos(b4 , 270 , 420)
on event(b4 , taskCr( ))
```

Creates a button and calls the function ,taskCr(), on submit

```
w5 := widget(0 , "Search Task")
set size(w5 , 600 , 450)
l51 := label(w5 , "Select Criteria")
set pos(l51 , 270 , 50)
```

Creates a widget for the search tab and customizes it

$$qlist := \begin{bmatrix} \text{"All tasks"} \\ \text{"Active tasks list"} \\ \text{"Tasks finished 50 percent or less"} \end{bmatrix}$$

$$col := \begin{bmatrix} \text{"Name"} \\ \text{"Team"} \\ \text{"Person"} \\ \text{"Start date"} \\ \text{"End date"} \\ \text{"Complited"} \\ \text{"Note"} \\ \vdots \end{bmatrix}$$

```
li51 := combo box(w5 , qlist)
set pos(li51 , 220 , 70)
set widget value(li51 , "")
```

$$stv := \begin{bmatrix} \text{""} & \text{""} & \text{""} & \text{""} & \text{""} & \text{""} & \text{""} \end{bmatrix}$$

```
tt := table create(stv , col^T)
tab := table widget(w5 , tt)
set pos(tab , 0 , 110)
set size(tab , 600 , 350)
```

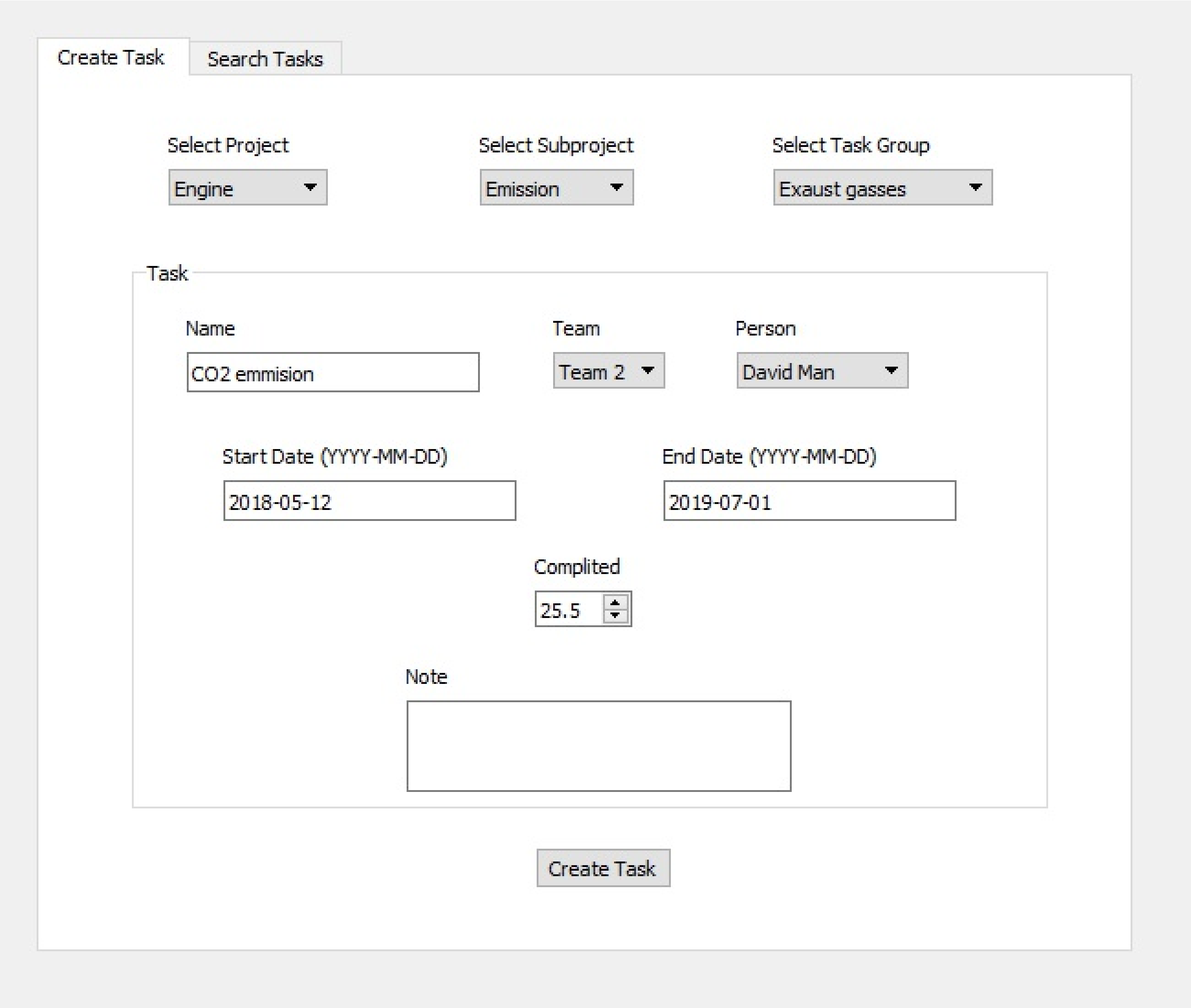
```
tab2 := tab widget(ww , ["Create Task" ; "Search Tasks"] , [w4 ; w5])
set pos(tab2 , 20 , 20)
set size(tab2 , 600 , 500)

reload1( )
{
    qq4 := "SELECT subproject.Name FROM subproject INNER JOIN project ON project.ID = "
    qq4 += "subproject.proj_id WHERE project.Name = '" + widget value(li41) + "'"
    subproj := database query(base , qq4)
    if(is undefined(subproj))
    {
        set widget value(li42 , "")
    }
    else
    {
        set widget value(li42 , subproj)
    }
    qq5 := "SELECT dgroup.Name FROM dgroup INNER JOIN subproject ON subproject.ID = "
    qq5 += "dgroup.subproj_id WHERE subproject.Name = '" + widget value(li42) + "'"
    tgroup := database query(base , qq5)
    if(is undefined(tgroup))
    {
        set widget value(li43 , "")
    }
    else
    {
        set widget value(li43 , tgroup)
    }
}
```

Function ,reload1(), is used to populate subprojects and tasks groups lists based on the selected option from the project list

```
reload2( )
{
    qq7 := "SELECT dgroup.Name FROM dgroup INNER JOIN subproject ON subproject.ID = "
    qq7 += "dgroup.subproj_id WHERE subproject.Name = '" + widget value(li42) + "'"
    tgroup := database query(base , qq7)
    if(is undefined(tgroup))
    {
        set widget value(li43 , "")
    }
    else
    {
        set widget value(li43 , tgroup)
    }
}
```

Function ,reload2(), is used to populate tasks groups lists based on the selected option from the subproject list

Main form
It has two tabs, one to create tasks from it and the other to search created tasks



Select Project: Engine

Select Subproject: Emission

Select Task Group: Exaust gasses

Task

Name: CO2 emmision

Team: Team 2

Person: David Man

Start Date (YYYY-MM-DD): 2018-05-12

End Date (YYYY-MM-DD): 2019-07-01

Complited: 25.5

Note:

```
taskCr( )
{
    tm := "SELECT team.ID FROM team WHERE team.Name = '" + widget value(li45) + "'"
    tm1 := database query(base , tm)
    per := "SELECT person.ID FROM person WHERE person.Name = '" + widget value(li46) + "'"
    per1 := database query(base , per)
    gr := "SELECT dgroup.ID FROM dgroup WHERE dgroup.Name = '" + widget value(li43) + "'"
    gr1 := database query(base , gr)
    qq10 := "INSERT INTO 'task' (Name, team_id, person_id, start_date, end_date, completed"
    qq10 += ", note, group_id) VALUES ('" + widget value(li44) + "', '" + tm1 + "', '" + per + "', '"
    qq10 += widget value(li47) + "', '" + widget value(li48) + "', '" + widget value(li49) + "', '"
    qq10 += widget value(li410) + "', '" + gr1 + "')"
    database query(base , qq10)
    set tooltip(li44 , widget value(li44))
    set tooltip(li47 , widget value(li47))
    set tooltip(li48 , widget value(li48))
    set tooltip(li49 , widget value(li49))
    set tooltip(li410 , widget value(li410))
    set widget value(li44 , "")
    set widget value(li47 , "")
    set widget value(li48 , "")
    set widget value(li49 , 0.0)
    set widget value(li410 , "")
}
```

Function ,reload2(), is used to populate tasks groups lists based on the selected option from the subproject list

```
on event(b1 , insertProj( ))

insertProj( )
{
    qq20 := "SELECT project.Name FROM project WHERE project.Name = '" + widget value(li11)
    qq20 += "'"
    prov1 := database query(base , qq20)
    qq21 := "INSERT INTO project (Name) VALUES ('" + widget value(li11) + "')"
    if(is undefined(prov1))
    {
        database query(base , qq21)
        qqq := "SELECT Name FROM project ORDER BY Name ASC"
        projn := database query(base , qqq)
        set widget value(li21 , projn)
        set widget value(li31 , projn)
        set widget value(li41 , projn)
        set tooltip(li11 , widget value(li11))
        set widget value(li11 , "")
    }
    else
    {
        message box("Create Project" , "Project with the same name already exists!")
    }
}
```

Function insertProj() is used to insert a project in a database by the pressing the button

```
on event(b2 , insertSubproj())

insertSubproj( )
{
    qq30 := "SELECT subproject.Name FROM subproject WHERE subproject.Name = '"
    qq30 += widget value(li22) + "'"
    prov2 := database query(base , qq30)
    qq31 := "SELECT project.ID FROM project WHERE project.Name = '"
    qq31 += widget value(li21) + "'"
    projID := database query(base , qq31)
    qq32 := "INSERT INTO subproject (Name, proj_id) VALUES ('" + widget value(li22) + "', "
    qq32 += projID + ")"
    if(is undefined(prov2))
    {
        database query(base , qq32)
        qqq := "SELECT Name FROM project ORDER BY Name ASC"
        projn := database query(base , qqq)
        set widget value(li31 , projn)
        set widget value(li41 , projn)
        set tooltip(li22 , widget value(li22))
        set widget value(li22 , "")
    }
    else
    {
        message box("Create Subproject" , "Subproject with the same name already exists!")
    }
}
```

Function insertSubproj() is used to insert a subproject in a database by pressing the button

```
on event(b3 , insertGroup())
insertGroup( )
{
    qq40 := "SELECT dgroup.Name FROM dgroup WHERE dgroup.Name = '" + widget value(li33)
    qq40 += "'"
    prov3 := database query(base , qq40)
    qq41 := "SELECT ID FROM subproject WHERE Name = '" + widget value(li32) + "'"
    subprojID := database query(base , qq41)
    qq42 := "INSERT INTO dgroup (Name, subproj_id) VALUES ('" + widget value(li33) + "', "
    qq42 += subprojID + ")"
    if(is undefined(prov3))
    {
        database query(base , qq42)
        qqq := "SELECT Name FROM project ORDER BY Name ASC"
        taskn := database query(base , qqq)
        set widget value(li41 , taskn)
        set tooltip(li33 , widget value(li33))
        set widget value(li33 , "")
    }
    else
    {
        message box("Create Task Group" , "Task group with the same name already exists!")
    }
}
```

Function insertGroup() is used to insert a task group into a database by pressing the button

```
firstOp( )
{
    qqq1 := "SELECT task.Name as 'Task', team.Name as 'Team',  person.Name as 'Person', "
    qqq1 += "task.start_date as 'Start Date', task.end_date as 'End Date', task.completed as "
    qqq1 += "'Completed', task.note as 'Note', project.Name as 'Project', subproject.Name as "
    qqq1 += "'Subproject', dgroup.Name as 'Task Group' FROM task  INNER JOIN team ON "
    qqq1 += "team.ID = task.team_id INNER JOIN person ON person.ID = task.person_id "
    qqq1 += "INNER JOIN dgroup ON dgroup.ID = task.group_id INNER JOIN  project ON "
    qqq1 += "project.ID = dgroup.proj_id INNER JOIN subproject ON subproject.ID = "
    qqq1 += "dgroup.subproj_id"
    val1 := database query(base , qqq1)
    return(val1)
}
```

```
secondOp( )
{
    qqq2 := "SELECT task.Name as 'Tast', team.Name as 'Team',  person.Name as 'Person', "
    qqq2 += "task.start_date as 'Start Date', task.end_date as 'End Date', task.completed as "
    qqq2 += "'Completed', task.note as 'Note', project.Name as 'Project', subproject.Name as "
    qqq2 += "'Subproject', dgroup.Name as 'Task Group' FROM task  INNER JOIN team ON "
    qqq2 += "team.ID = task.team_id INNER JOIN person ON person.ID = task.person_id "
    qqq2 += "INNER JOIN dgroup ON dgroup.ID = task.group_id INNER JOIN  project ON "
    qqq2 += "project.ID = dgroup.proj_id INNER JOIN subproject ON subproject.ID = "
    qqq2 += "dgroup.subproj_id WHERE date('now') BETWEEN date(task.start_date) AND"
    qqq2 += " date(task.end_date)"
    val2 := database query(base , qqq2)
    return(val2)
}
```

```
thirdOp( )
{
    qqq3 := "SELECT task.Name as 'Tast', team.Name as 'Team',  person.Name as 'Person', "
    qqq3 += "task.start_date as 'Start Date', task.end_date as 'End Date', task.completed as "
    qqq3 += "'Completed', task.note as 'Note', project.Name as 'Project', subproject.Name as "
    qqq3 += "'Subproject', dgroup.Name as 'Task Group' FROM task  INNER JOIN team ON "
    qqq3 += "team.ID = task.team_id INNER JOIN person ON person.ID = task.person_id "
    qqq3 += "INNER JOIN dgroup ON dgroup.ID = task.group_id INNER JOIN  project ON "
    qqq3 += "project.ID = dgroup.proj_id INNER JOIN subproject ON subproject.ID = "
    qqq3 += "dgroup.subproj_id WHERE task.completed < 50"
    val3 := database query(base , qqq3)
    return(val3)
}
```

Functions firstOp(), secondOp() and thirdOp() are used to return data from a database by pressing the button

We used them on Search Tasks tab when one of the three predefined criteria is selected

```
on event(li51 , search())

search( )
{
    if(widget value(li51) == "All tasks")
    {
        set widget value(tab , firstOp())
    }
    else if(widget value(li51) == "Active tasks list")
    {
        set widget value(tab , secondOp())
    }
    else if(widget value(li51) == "Tasks finished 50 percent or less")
    {
        set widget value(tab , thirdOp())
    }
    else
    {
        set widget value(tab , tt)
    }
}
```

Function search() calls the functions firstOp(), secondOp() and thirdOp() based on a selected list option

When one of the three predefined criteria is selected these functions return the data from database