Archived:Editing a schedule using RScheduler

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Overview

This code snippet shows how to create, disable, enable, and edit a condition-based schedule using the class `RScheduler`. When schedules are created, they are enabled by default. By disabling a schedule the scheduled tasks are not executed even if they become due. The `RScheduler` methods `EnableSchedule()` and `DisableSchedule()` are used to enable/disable the example schedule. There are separate methods for time-based and condition-based schedules with different parameters for editing schedules. The condition-based `EditSchedule()` is used for editing the schedule in this example.

This snippet can be self-signed.

MMP file

The following libraries are required:

```
LIBRARY schsvr.lib
```

Preconditions

ExampleTaskHandler.exe must be created before this code snippet can be executed. See Creating and registering a task handler with RScheduler.

Resource files

.rss

```
RESOURCE MENU_PANE r_schedulerexample_menu
    {
    items =
        {
        //...
        MENU_ITEM {command = EEditExample;             txt = "EditExample";},
        //...
        MENU_ITEM {command = EAknSoftkeyExit;          txt = "Exit";}
        };
    }
```

.hrh

```
enum TSchedulerExampleIds
    {
   //...
    EEditExample,
    //...
    };
```

Header file

```
#ifndef __SCHEDULEREXAMPLEAPPUI_H__
#define __SCHEDULEREXAMPLEAPPUI_H__

#include <csch_cli.h> // RScheduler
#include <schinfo.h>  // TSchedulerItemRef, TTaskInfo...

class CSchedulerExampleAppUi : public CAknAppUi
    {
    //...
public:
    void HandleCommandL(TInt aCommand);
    //...
private:
    void CreateConditionVariableL();

    void SetConditionVariableL(TInt aKeyValue);

    void DeleteConditionVariableL();

    TInt EnableOrDisableSchedule(RScheduler& aScheduler, TInt aScheduleId, TBool aDoEnable);

    TInt CreateInitialConditionScheduleWithTaskL(
                                            TSchedulerItemRef& aSchedulerItem,
                                            RScheduler& aScheduler,
                                            TInt aKeyId, TInt aExpectedValue,
```


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```
                                                const TTsTime& aDefaultRunTime
                                                );



    //...
private:

    RScheduler iScheduler;
};

#endif // __SCHEDULEREXAMPLEAPPUI_H__
```

Source file

```
#include <e32property.h>

const TUid KExampleUid = TUid::Uid(0xE0060BBB); //UID3 from .mmp file
const TInt KExampleKey = 1;

void CSchedulerExampleAppUi::ConstructL()
    {
    //...
    User::LeaveIfError(iScheduler.Connect());

    _LIT(KExampleTaskHandlerExe, "ExampleTaskHandler.exe");
    TFileName exampleHandler(KExampleTaskHandlerExe);

    User::LeaveIfError(iScheduler.Register(exampleHandler, CActive::EPriorityStandard));
    }

CSchedulerExampleAppUi::~CSchedulerExampleAppUi()
    {

    //...
    iScheduler.Close();

    DeleteConditionVariableL();
    }

void CSchedulerExampleAppUi::HandleCommandL(TInt aCommand)
  {
  TBuf<100> Text1; //first line of dialog text
  TBuf<100> Text2; //second line of dialog text

  switch(aCommand)
    {
    case EEikCmdExit:
    case EAknSoftkeyExit:
      Exit();
      break;
//...
    case EEditExample:
      {
      TInt err(KErrNone);

      CreateConditionVariableL();
      TSchedulerItemRef tempRef;

      TTsTime defaultTime;
      TTime time;
      time.HomeTime();
      time = time.operator+(TTimeIntervalMonths(1));
      defaultTime.SetLocalTime( time );

      err = CreateInitialConditionScheduleWithTaskL(tempRef, iScheduler,
KExampleKey, 1, defaultTime );

      //disable the schedule
      err = EnableOrDisableSchedule(iScheduler, tempRef.iHandle, EFalse);

      //set condition variable to trigger the example task
      SetConditionVariableL(1);

      //NOTE: nothing happens because the schedule is disabled!
      //User::After(1000*1000*2);

      //set condition variable not to trigger the example task
      SetConditionVariableL(2);

      //enable the schedule again
      err = EnableOrDisableSchedule(iScheduler, tempRef.iHandle, ETrue);

      if(err == KErrNone)
        Text1.Append(_L("Schedule is enabled!"));

      CArrayFixFlat<TTaskSchedulerCondition>* conditions =
new (ELeave) CArrayFixFlat<TTaskSchedulerCondition>(1);

      CleanupStack::PushL(conditions);
      TTaskSchedulerCondition newCondition;
      newCondition.iCategory    = KExampleUid;
      newCondition.iKey         = KExampleKey;
      newCondition.iState       = 2;
      newCondition.iType        = TTaskSchedulerCondition::EEquals;
      conditions->AppendL(newCondition);

      //edit condition schedule to trigger the example task when
      //condition variable equals to state 2
      err = iScheduler.EditSchedule(tempRef.iHandle, *conditions, defaultTime);

      if(err == KErrNone)
        Text2.Append(_L("Schedule is edited!"));

      CEikonEnv::Static()->InfoWinL(Text1, Text2);

      //Task Scheduler launches the example task...

      CleanupStack::PopAndDestroy(conditions);
      }
      break;
```


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```
    default:
      //Panic(ESchedulerExampleUi);
      break;
      }
  }


void CSchedulerExampleAppUi::CreateConditionVariableL()
  {
  TInt ret = RProperty::Define(KExampleUid, KExampleKey, RProperty::EInt);

  if (ret != KErrAlreadyExists)
    {
    User::LeaveIfError(ret);
    }
  }

void CSchedulerExampleAppUi::SetConditionVariableL(TInt aKeyValue)
  {
  TInt ret = RProperty::Set(KExampleUid, KExampleKey, aKeyValue);

  User::LeaveIfError(ret);
  }

void CSchedulerExampleAppUi::DeleteConditionVariableL()
  {
  TInt ret = RProperty::Delete(KExampleUid, KExampleKey);

  if (ret != KErrNotFound)
    {
    User::LeaveIfError(ret);
    }
  }

TInt CSchedulerExampleAppUi::EnableOrDisableSchedule(
                                        RScheduler& aScheduler,
                                        TInt aScheduleId,
                                        TBool aDoEnable
                                        )
  {
  TInt ret(KErrNone);

  if(aDoEnable)
    {
    ret = aScheduler.EnableSchedule(aScheduleId);
    }
  else
    {
    ret = aScheduler.DisableSchedule(aScheduleId);
    }

  return ret;
  }

TInt CSchedulerExampleAppUi::CreateInitialConditionScheduleWithTaskL(
                        TSchedulerItemRef& aSchedulerItem,
                        RScheduler& aScheduler,
                        TInt aKeyId, TInt aTriggerValue,
                        const TTsTime& aDefaultRunTime
                      )
    {
    TInt ret(KErrNone);

    aSchedulerItem.iName = _L("Edit Schedule Example");

    CArrayFixFlat<TTaskSchedulerCondition>* conditions =
new (ELeave) CArrayFixFlat<TTaskSchedulerCondition>(1);
    CleanupStack::PushL(conditions);

    TTaskSchedulerCondition condition;
    condition.iCategory     = KExampleUid;
    condition.iKey          = aKeyId;
    condition.iState        = aTriggerValue;
    condition.iType         = TTaskSchedulerCondition::EEquals;
    conditions->AppendL(condition);

    ret = aScheduler.CreatePersistentSchedule(aSchedulerItem, *conditions, aDefaultRunTime);

    if (ret == KErrNone)
      {
      TTaskInfo taskInfo;
      taskInfo.iTaskId = 0;
      taskInfo.iName = _L("ExampleTask4");
      taskInfo.iPriority = 2;
      taskInfo.iRepeat = 0;
      HBufC* data = _L("ExampleData4").AllocLC();

      // schedule the example task
      ret = aScheduler.ScheduleTask(taskInfo, *data, aSchedulerItem.iHandle);
      CleanupStack::PopAndDestroy(); // data
      }
    else
      {
      //Creating persistent schedule failed, do something...
      }

    CleanupStack::PopAndDestroy(conditions);

    return ret;
    }
```

Postconditions

The condition-based schedule with one example task has been created and the task execution is triggered using the Publish and Subscribe mechanism after the schedule is enabled and edited.

See also

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- Creating and registering a task handler with RScheduler
- Archived:Creating persistent and transient schedules with RScheduler
- Archived:Creating a condition-based schedule with RScheduler
- Archived:Getting schedule and task info using RScheduler
- Archived:Getting schedule and task count using RScheduler
- Archived:Deleting schedules and tasks using RScheduler

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