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Function library example

See the code snippet below for an example of a function library. For illustration purposes this code snippet contains only a handful of functions supported by the standard Date Function Library.

```
public class DateFunctionLibrary implements IFunctionLibrary
{
    supported date functions
    public static final StringDAY_OF_WEEK_FUNCTION="DAY_OF_WEEK";
    public static final StringCURRENT_YEAR_FUNCTION="CURRENT_YEAR";
    public DateFunctionLibrary()
    {
    }
    /**
     * @see IFunctionLibrary#getName()
     **/
    @Override
    public StringgetName()
    {
        return “DateFunctionLibrary”;
    }
    /**
     *@see IFunctionLibrary#hasFunction(String,int)
     */
    @Override
    public boolean hasFunction(StringfunctionName, int paramNmb)
    {
        if (paramNmb==0)
        {
            return functionName.equalsIgnoreCase (CURRENT_YEAR_FUNCTION);
        }
        else if (paramNmb==1)
        {
            return functionName.equalsIgnoreCase (DAY_OF_WEEK_FUNCTION);
            return false ;
        }
        /**
         * @see IFunctionLibrary#getAvailableFunctions()
         **/
        @Override
        public FunctionDescription[]getAvailableFunctions()
        {
            FunctionDescription[]results= new FunctionDescription[2];
            results[0]= new FunctionDescription(CURRENT_YEAR_FUNCTION,
                "Parameters: none\nReturn: current year as 4 digit Number");
            results[1]= new FunctionDescription(DAY_OF_WEEK_FUNCTION,
"Parameters: attribute of Date type or expression producing Date"+"\nReturn:
day of week of the provided date as Plain Text ('Monday', 'Tuesday' etc)");
            return results;
        }
        /**
         ** @see IFunctionLibrary#calculate(String,Object[],INodeHelper)
         **/
        public Objectcalculate(StringfunctionName,Object[]params,
INodeHelperhelper)
        {
            if (params== null ||params.length==0)
            {
                if (functionName.equalsIgnoreCase(CURRENT_YEAR_FUNCTION))
                {
                    Calendarcal=Calendar.getInstance();
                    cal.setTime(new Date ());
                    return new Integer(cal.get(Calendar.YEAR));
                }
            }
            else if (params!= null &&params.length==1)
            {
                // a single parameter must be of DateHolder type
                if (functionName.equalsIgnoreCase(DAY_OF_WEEK_FUNCTION))
                {
                    if (!(params[0] instanceof DateHolder))
                        return null ;
                    Datedate=TypeUtils.toDate((DateHolder)params[0]);
                    Calendarcal=Calendar.getInstance();
                    cal.setTime(date);
                    SimpleDateFormatsdf= new SimpleDateFormat("E");
                    return sdf.format(date);
                }
            }
            return null ;
        }
        /**
         ** @see IFunctionLibrary#toSQL(String,Collection,ISQLBuilderHelper)
         **/
        @Override
        public StringtoSQL(StringfunctionName,Collectionparameters,
ISQLBuilderHelpersqlHelper)
        throw Exception
        {
            IDatabaseClientInterfacedbi =sqlHelper.getDatabaseInterface();
            if (parameters== null ||parameters.size()==0)
            {
                if (dbi instanceof MySQLClientInterface)
                {
                    if (functionName.equalsIgnoreCase
(CURRENT_YEAR_FUNCTION))
                    {
                        return "YEAR(CURDATE())";
                    }
                }
                else if (dbi instanceof MSSQLServerClientInterface)
                {
                    if (functionName.equalsIgnoreCase
(CURRENT_YEAR_FUNCTION))
                    {
                        return "DATEPART (yy, GETDATE())";
                    }
                }
            }
            else if (parameters!= null &&parameters.size()==1)
            {
                Iteratoriter=parameters.iterator();
                IArithmeticNodearNode=(IArithmeticNode)iter.next();
                // representation of the argument
                StringdateArg=arNode.toSQL(sqlHelper);
                if (dateArg== null ||dateArg.length()==0)
                return ""; // the expression won't be calculated
            if (functionName.equalsIgnoreCase(DAY_OF_WEEK_FUNCTION))
            {
                if (sqlFlavour==CommonConstants.SQL_FLAVOUR_TSQL)
                    return "DATENAME(dw,"+dateArg+")";
                else if (sqlFlavour==CommonConstants.SQL_FLAVOUR_MYSQL)
                    return "DAYNAME("+dateArg+")";
            }
        }
        throw new UnsupportedSQLElementException(functionName);
    }
    /** @see IFunctionLibrary#getTypeClass(String,Collection)*/
    @Override
    public ClassgetTypeClass(StringfunctionName,Collectionparams)
    {
        return Integer. class ;
    }
    /** @see IFunctionLibrary#getRequiredFactPatterns(String,Collection)*/
    @Override
    public
HashSetgetRequiredFactPatterns(StringfunctionName,Collectionparams)
    {
        return null;
    }
}
```

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