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| Subject | [21746][HQEIS] Qisda EIS Mobile AR Aging Data Collection and Web Service | | Doc.: |  | | Rev. | V1.0 |
|  | | | Release Date: | 2017/5/31 | | Revision Status: | |
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| Approved By: | | Reviewed By: | | | Prepared By: | | |
| PM Head / | | SD / | | | PM / Alan Chen | | |
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Change History

As to the revised document: the latest revised content is written in blue font, while the yellow background means the waiting confirm status. And the double strikethrough represents the deleting content.

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Author | Version | Comment |
| 2017/5/31 | Alan Chen | V1.0 | First Release |

# Introduction

|  |  |
| --- | --- |
| Project Name: | [21746][HQEIS] Qisda EIS Mobile AR Aging Data Collection and Web Service |
| Project Code: | 21746 |
| Project Description: | Qisda EIS Mobile AR Aging Data Collection and Web Service |
| Project Background: |  |
| Project User: | BI20 |
| Project Owner: | Alan.Chen |

# System Flow

# Purpose & Scope

為我們將開發Qisda EIS Mobile，第一個功能是AR Aging的相關資訊，因此需要先從Qisda拉原始資料進到BENQDW中。之後再透過類似BenQ EIS Mobile的方式提供QPlay相關資料。因此這次的需求需要開發一個Request，設定成每天晚間進行的Job，透過Database Link抓取資料，並寫入新增的Table中。

# Function Description

## [BENQDW]新增Table：EIS\_QISDA\_ARA\_AGINGDATA，並從Qisda的Oracle DB收集Overdue的資料

BENQDW將新增一個Table: EIS\_QISDA\_ARA\_AGINGDATA來收集資料，欄位如下：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LVL | ARODPX | RCUST | CNME | ***RINVC*** | RREF | RIDTE | RDDTE | PAYDATE | OVER1 | OVER15 | OVER45 | OVER75 | RREM | RCAMT | RCURR | FAC\_CUS | TYPE | OWNER | AGED\_DATE | PROCESS\_DATE |

QISDA的Oracle DB提供了兩個View：V\_SMS\_OVERDUE與V\_SMS\_OVERDUE\_CSD。以上黑色的欄位都完全來自於這兩個View。這兩個View寫進EIS\_QISDA\_ARA\_AGINGDATA的邏輯如下：

1. Request中應該有個日期參數，決定這次寫入的內容是以哪個日期作為AGED\_DATE寫入的，默認是trunc(sysdate)，但萬一跑失敗隔天重跑時，有必要可讓PM手動調整為trunc(sysdate-1)。
2. Request啟動時，先將符合日期參數的現有資料刪除，再進行寫入動作，避免資料重複。
3. select \* from V\_SMS\_OVERDUE，寫進所有黑色欄位，並將TYPE寫進值 ‘BU’，AGED\_DATE以日期參數用年月日格式寫入，PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
4. select \* from V\_SMS\_OVERDUE\_CSD，寫進所有黑色欄位，並將TYPE寫進值 ‘CSD’，AGED\_DATE以日期參數用年月日格式寫入，PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
5. 每筆資料對應的OWNER值透過以下方式取得：

|  |
| --- |
| **select** sname **from**  ( **SELECT** bilsih.ihinvn,**decode**(zsc.zprf,**null**,ech\_s.chenus, **trim**(**substr**(zint,1,20))) **AS** sname  **FROM** bilsih, ech\_s,zsc  **WHERE** bilsih.ihsys = ech\_s.hord(+) **AND** zsc.zprf(+)=ech\_s.chenus  **AND** bilsih.ihinvn>10000000 **AND** ech\_s.hid(+)='CH'  **AND** ech\_s.hord(+) <> 0  **UNION**  **SELECT** **to\_number**(**trim**(dcnm.invno)) **AS** ihinvn, dcnefrm.efuser **AS** sname  **FROM** dcnm, dcnefrm  **WHERE** dcnm.dcnno=dcnefrm.enoteno **AND** dcnefrm.etype='D' **AND** dcnefrm.erid='EC') **where** ihinvn=**{RINVC}** |

## [BENQDW]新增Table：EIS\_QISDA\_ARA\_OUTSTAND，並從Qisda的Oracle DB收集Over Standing AR的資料

BENQDW將新增一個Table: EIS\_QISDA\_ARA\_OUTSTAND來收集資料，欄位如下：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LVL | ARODPX | RCUST | CNME | ***RINVC*** | RREF | RIDTE | RDDTE | PAYDATE | RREM | RCURR | FAC\_CUS | PREDAYS | OWNER | TYPE | AGED\_DATE | PROCESS\_DATE |

QISDA的Oracle DB提供了兩個View：V\_SMS\_OUTSTD與V\_SMS\_OUTSTD\_CSD。以上黑色的欄位都完全來自於這兩個View。這兩個View寫進EIS\_QISDA\_ARA\_OUTSTAND的邏輯如下：

1. Request中應該有個日期參數，決定這次寫入的內容是以哪個日期作為AGED\_DATE寫入的，默認是trunc(sysdate)，但萬一跑失敗隔天重跑時，有必要可讓PM手動調整為trunc(sysdate-1)。
2. Request啟動時，先將符合日期參數的現有資料刪除，再進行寫入動作，避免資料重複。
3. select \* from V\_SMS\_OUTSTD，寫進所有黑色欄位，並將TYPE寫進值 ‘BU’，AGED\_DATE以日期參數用年月日格式寫入，PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
4. select \* from V\_SMS\_OUTSTD\_CSD，寫進所有黑色欄位，並將TYPE寫進值 ‘CSD’，AGED\_DATE以日期參數用年月日格式寫入，PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
5. 每筆資料對應的OWNER值透過以下方式取得：

|  |
| --- |
| **select** sname **from**  ( **SELECT** bilsih.ihinvn,**decode**(zsc.zprf,**null**,ech\_s.chenus, **trim**(**substr**(zint,1,20))) **AS** sname  **FROM** bilsih, ech\_s,zsc  **WHERE** bilsih.ihsys = ech\_s.hord(+) **AND** zsc.zprf(+)=ech\_s.chenus  **AND** bilsih.ihinvn>10000000 **AND** ech\_s.hid(+)='CH'  **AND** ech\_s.hord(+) <> 0  **UNION**  **SELECT** **to\_number**(**trim**(dcnm.invno)) **AS** ihinvn, dcnefrm.efuser **AS** sname  **FROM** dcnm, dcnefrm  **WHERE** dcnm.dcnno=dcnefrm.enoteno **AND** dcnefrm.etype='D' **AND** dcnefrm.erid='EC') **where** ihinvn=**{RINVC}** |

## [BENQDW]新增Table：EIS\_QISDA\_CUSTOMER，並從Qisda的Oracle DB收集Customer Credit的資料

BENQDW將新增一個Table: EIS\_QISDA\_CUSTOMER來收集資料，欄位如下：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CUFAC | CCUST | CNME | CUEXD | CUCRM | PROCESS\_DATE |

寫進EIS\_QISDA\_CUSTOMER的邏輯如下：

1. Request不需要參數，每次運行時都把原有的記錄全部刪除，再全部寫入。
2. PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
3. 每筆資料對應的OWNER值透過以下方式取得：

|  |
| --- |
| **SELECT** ordcuc.cufac, rcm.ccust, rcm.cnme, ordcuc.cuexd, ordcuc.cucrm  **FROM** ordcuc, rcm  **WHERE** cucus = ccust |

## [BENQDW]新增Table：EIS\_QISDA\_ARA\_AUTHORITY，並從Qisda的Oracle DB收集AR Authority的資料

BENQDW將新增一個Table: EIS\_QISDA\_ARA\_AUTHORITY來收集資料，欄位如下：

|  |  |  |
| --- | --- | --- |
| SNMGRP | SNMNAME | PROCESS\_DATE |

寫進EIS\_QISDA\_ARA\_AUTHORITY的邏輯如下：

1. Request不需要參數，每次運行時都把原有的記錄全部刪除，再全部寫入。
2. PROCESS\_DATE以寫入時間的年月日時分秒格式寫入。
3. 資料透過以下方式取得：

|  |
| --- |
| **select** **distinct** SNMGRP, **replace**(SNMNAME, ' ' ,'.') **as** SNMNAME **from** snmmem  **order** **by** SNMGRP, SNMNAME |

## [BENQDW]新增Table：EIS\_WS\_QISDA\_AR\_AGING，參考4.6和4.7的呈現事先準備好資料

EIS\_WS\_QISDA\_AR\_AGING

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **FACILITY** | **TYPE** | **CUSTOMER** | **OWNER** | **AGED\_DATE** | **WEEK** | **OVER\_1\_15\_INV** | **OVER\_16\_45\_INV** | **OVER\_46\_75\_INV** | **OVER\_76\_INV** | **MAX\_DUE\_DAYS\_INV** | **OVER\_1\_15\_CM** | **OVER\_16\_45\_CM** | **OVER\_46\_75\_CM** | **OVER\_76\_CM** | **MAX\_DUE\_DAYS\_CM** |

## Function: Overdue Detail

1. 輸入參數：無，直接返回即時資料
2. 輸出資料集：

<Header>

|  |  |  |  |
| --- | --- | --- | --- |
| **FACILITY** | **TYPE** | **CUSTOMER** | **OWNER** |
| KL | BU | 60750 DELL GLOBAL B.V (SINGAPORE BRA | Elf.YT.Hsu |

<Detail>

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AGED\_DATE** | **WEEK** | **OVER\_1\_15\_INV** | **OVER\_16\_45\_INV** | **OVER\_46\_75\_INV** | **OVER\_76\_INV** | **OVER\_1\_15\_CM** | **OVER\_16\_45\_CM** | **OVER\_46\_75\_CM** | **OVER\_76\_CM** |
| 2017/5/24 | W23 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |
| 2017/5/17 | W22 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |
| 2017/5/10 | W21 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |
| 2017/5/03 | W20 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |
| 2017/4/27 | W19 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |
| 2017/5/20 | W18 | 10919659 | 10535611 | 10919659 | 10535611 | -10919659 | -10535611 | -10919659 | -10535611 |

1. 在之前的Request跑完後，從EIS\_QISDA\_ARA\_AGINGDATA抓取資料，在最外層的root下，Group by Customer與Type與Facility為Header，一一列出，每個Customer抓取對應的前六周資料，從訪問時間當下的最大日期(正常來說應該是sysdate或sysdate-1)開始，往前-7/-7/-7/-7/-7含當天共六筆記錄。針對四個AR Aging Bucket，加總後如果>0，則放進OVER\_XXXX\_INV欄位中；如果<0，則放進OVER\_XXXX\_CM欄位中。
2. WEEK請比對eis\_hq\_period，找出對應WWEEK。
3. Group by Customer與Type的情況下，如果Owner有多筆，則用分號隔開顯示。
4. 輸出字段中，Customer以CCUST + ‘ ‘ + CNME輸出。
5. 透過以下方法將以上的數字，轉換Currency為USD的金額

|  |
| --- |
| **select** x\_get\_exchg\_rate\_2('M',**{RCURR)**,'USD','MONTH',**{RIDTE}**) **from** dual |

1. 根據以上的欄位，將即時資料整理到兩個新Table：EIS\_WS\_QISDA\_AR\_AGING

## Function: AR Summary

1. 輸入參數：無，直接返回即時資料
2. 輸出資料集：

<Header>

無，只有一層

<Detail>

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **FACILITY** | **TYPE** | **CUSTOMER** | **OWNER** | **OVER\_1\_15\_INV** | **OVER\_16\_45\_INV** | **OVER\_46\_75\_INV** | **OVER\_76\_INV** | **MAX\_DUE\_DAYS\_INV** | **OVER\_1\_15\_CM** | **OVER\_16\_45\_CM** | **OVER\_46\_75\_CM** | **OVER\_76\_CM** | **MAX\_DUE\_DAYS\_CM** |
| KL | BU | 60750 DELL GLOBAL B.V (SINGAPORE BRA | Elf.YT.Hsu | 10919659 | 10535611 | 10919659 | 10535611 | 30 | -10919659 | -10535611 | -10919659 | -10535611 | 50 |

1. 資料來源同4.5，差別一只在於這邊只需要當天的資料，不需要六周。因此將4.5的Header和Line合併後，刪除AGED\_DATE和WEEK兩個欄位即可。
2. 差別二在於須新增兩個欄位：MAX\_DUE\_DAYS\_INV和MAX\_DUE\_DAYS\_CM，表示所有Invoice或Credit Memo中，Aged Date與RDDTE差距(DATEDIFF)天數中，最大的一筆。
3. Group by Customer與Type的情況下，如果Owner有多筆，則用分號隔開顯示。
4. 輸出字段中，Customer以CCUST + ‘ ‘ + CNME輸出。
5. 透過以下方法將以上的數字，轉換Currency為USD的金額

|  |
| --- |
| **select** x\_get\_exchg\_rate\_2('M',**{RCURR)**,'USD','MONTH',**{RIDTE}**) **from** dual |

## [BENQDW]新增Table：EIS\_WS\_QISDA\_AR\_OUTSTAND，參考4.9的呈現事先準備好資料

EIS\_WS\_QISDA\_AR\_OUTSTAND

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FACILITY** | **TYPE** | **CUSTOMER** | **OWNER** | **AGED\_DATE** | **DUE\_SOON\_INV** | **DUE\_SOON\_CM** |

## Function: Outstand Detail

1. 輸入參數：無，直接返回即時資料
2. 輸出資料集：

<Header>

無，只有一層

<Detail>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FACILITY** | **TYPE** | **CUSTOMER** | **OWNER** | **AGED\_DATE** | **DUE\_SOON\_INV** | **DUE\_SOON\_CM** |
| KL | BU | 60750 DELL GLOBAL B.V (SINGAPORE BRA | Elf.YT.Hsu | 2017/5/24 | 10919659 | 10535611 |

1. 在之前的Request跑完後，從EIS\_QISDA\_ARA\_OUTSTAND抓取資料，在最外層的root下，Group by Customer與Type與Facility為Header，一一列出，直接sum()。針對RREM，如果>0，則放進OVER\_XXXX\_INV欄位中；如果<0，則放進OVER\_XXXX\_CM欄位中。
2. Group by Customer與Type與Facility的情況下，如果Owner有多筆，則用分號隔開顯示。
3. 輸出字段中，Customer以CCUST + ‘ ‘ + CNME輸出。
4. 透過以下方法將以上的數字，轉換Currency為USD的金額

|  |
| --- |
| **select** x\_get\_exchg\_rate\_2('M',**{RCURR)**,'USD','MONTH',**{RIDTE}**) **from** dual |

1. 根據以上的欄位，將即時資料整理到兩個新Table：EIS\_WS\_QISDA\_AR\_OUTSTAND

## Function: Credit Expired Soon

1. 輸入參數：無，直接返回即時資料
2. 輸出資料集：

<Header>

無，只有一層

<Detail>

|  |  |  |  |
| --- | --- | --- | --- |
| **FACILITY** | **CUSTOMER** | **EXPIRED\_DATE** | **CREDIT\_LIIMIT** |
| KL | 60750 DELL GLOBAL B.V (SINGAPORE BRA | 2017/5/24 | 10919659 |

1. 從EIS\_QISDA\_CUSTOMER抓資料，但加上以下條件

|  |
| --- |
| **SELECT** ordcuc.cufac, rcm.ccust, rcm.cnme, ordcuc.cuexd, ordcuc.cucrm  **FROM** ordcuc, rcm  **WHERE** cucus = ccust  **AND** **TO\_DATE** (cuexd, 'YYYYMMDD') - **SYSDATE** <= 60  **AND** **TO\_DATE** (cuexd, 'YYYYMMDD') - **SYSDATE** > 0 |

1. 輸出字段中，Customer以CCUST + ‘ ‘ + CNME輸出。

## Function: User Authority

1. 輸入參數：
2. Account: Alan.Chen (NT Account)
3. 輸出資料集：

<Header>

無，只有一層

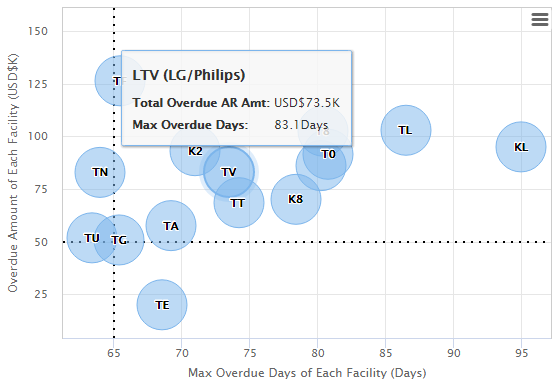
<Detail>

|  |
| --- |
| **FACILITY** |
| **K2** |
| **TL** |
| **KL** |

1. 直接從EIS\_QISDA\_ARA\_AUTHORITY抓資料

## APP Page: EIS Mobile Home

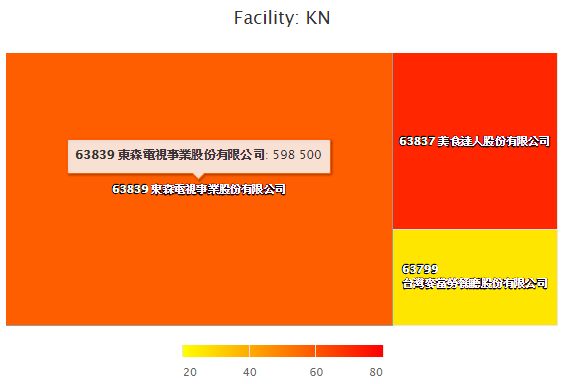
* + - * 1. 這一部分分成上下兩部分，最上面有BU和CSD兩個頁籤，分別針對 “4.7 Function: AR Summary”的輸出結果中，TYPE屬於BU和CSD的資料做篩選。
        2. 一開始有一句文字附註\*Credit Memo Excluded
        3. 接著是第一張泡泡圖：



1. 製作方式請參考以下Highcharts的Demo：

<https://www.highcharts.com/demo/bubble> 或 <https://www.highcharts.com/demo/bubble-3d>

1. 上圖中的虛線不須顯示。
2. 資料來源搭配 “4.7 Function: AR Summary”的輸出結果，泡泡中的文字以FACILITY顯示，X軸取FACILITY+TYPE為Group的條件下，所有記錄中MAX\_DUE\_DAYS\_INV的最大值；Y軸取FACILITY+TYPE為Group的條件下，所有記錄OVER\_1\_15\_INV+OVER\_16\_45\_INV+OVER\_46\_75\_INV+OVER\_76\_INV的加總值；泡泡大小不設定值，請找個適合大小的固定值即可。
   * + - 1. 接著是第二張樹形圖：



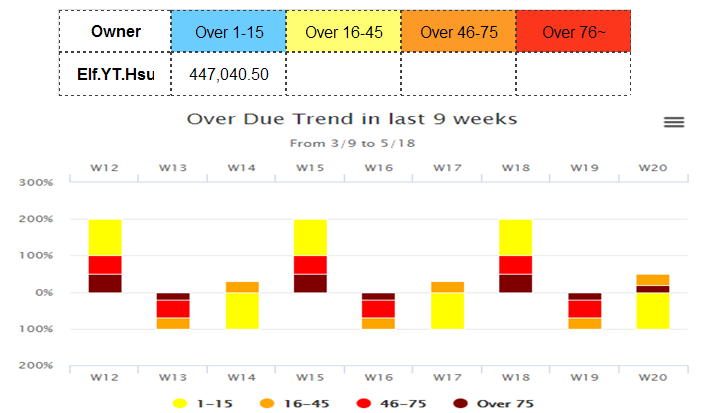
1. 製作方式請參考以下Highcharts的Demo：

<https://www.highcharts.com/demo/treemap-coloraxis>

1. 一進入EIS Mobile Home的時候不會顯示這張圖，等用戶點選第一張泡泡圖中的Facility後，透過特定Facility篩選得出的結果，顯示樹形圖。之前在網路上有看過這種互動式Highcharts的製作：<https://www.youtube.com/watch?v=d7X8UoOLfYM>
2. 色軸從黃到紅以0到75為端點。
3. 上圖的字型請改個易讀的字型顯示。
4. 資料來源搭配 “4.7 Function: AR Summary”的輸出結果，透過單一Facility的篩選後，方塊中的文字以**CUSTOMER**顯示，方塊大小取該CUSTOMER，OVER\_1\_15\_INV+OVER\_16\_45\_INV+OVER\_46\_75\_INV+OVER\_76\_INV的加總值；方塊顏色取該CUSTOMER的MAX\_DUE\_DAYS\_INV值。
5. 上圖的Tooltip目前是以OVER\_1\_15\_INV+OVER\_16\_45\_INV+OVER\_46\_75\_INV+OVER\_76\_INV的加總值顯示，如果可以做到，請試著用以下的格式顯示：

|  |
| --- |
| 63839 東森電視事業股份有限公司  Over 1-15 :USD$ 498,500  Over 16-45: USD$ 100,000  Over 46-75: USD$ 0  Over 76-: USD$ 0 |

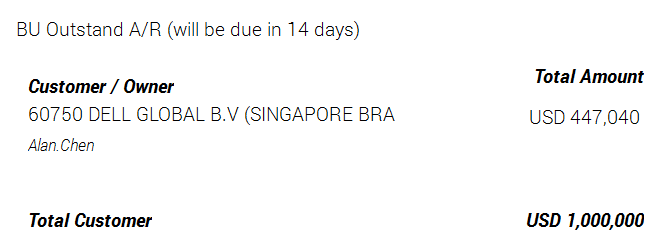
## APP Page: Overdue



* + - * 1. 資料來源搭配 “4.6 Function: Overdue Detail”的輸出結果，展開前的概觀部分，Customer以Header中的Customer值顯示。Total Overdue在不勾 “Credit Memo Included”的條件下，以Detail中最大日期的OVER\_1\_15\_INV + OVER\_16\_45\_INV + OVER\_46\_75\_INV + OVER\_76\_INV的總和值顯示；Total Overdue在勾選 “Credit Memo Included”的條件下，以Detail中最大日期的OVER\_1\_15\_INV + OVER\_16\_45\_INV + OVER\_46\_75\_INV + OVER\_76\_INV + OVER\_1\_15\_CM + OVER\_16\_45\_CM + OVER\_46\_75\_CM + OVER\_76\_CM的總和值顯示。
        2. WoW Trend是用以下Hicharts的Sparline功能呈現，如果無法整合進目前的畫面呈現中，請告訴我：<https://www.highcharts.com/demo/sparkline>
        3. WoW Trend Y軸的值在不勾 “Credit Memo Included”的條件下，以Detail中的OVER\_1\_15\_INV + OVER\_16\_45\_INV + OVER\_46\_75\_INV + OVER\_76\_INV的總和值顯示；在勾選 “Credit Memo Included”的條件下，以Detail中的OVER\_1\_15\_INV + OVER\_16\_45\_INV + OVER\_46\_75\_INV + OVER\_76\_INV + OVER\_1\_15\_CM + OVER\_16\_45\_CM + OVER\_46\_75\_CM + OVER\_76\_CM的總和值顯示；X軸以六周由最早到最新，自左至右排列。
        4. 展開後的細部資料含趨勢部分，表格部分以Detail中最大日期的記錄顯示，圖表部分，Y軸在不勾 “Credit Memo Included”的條件下，透過堆疊的方式由上到下分別為OVER\_1\_15\_INV、OVER\_16\_45\_INV、OVER\_46\_75\_INV、OVER\_76\_INV共四個序列；在勾選 “Credit Memo Included”的條件下，正向透過堆疊的方式由上到下分別為OVER\_1\_15\_INV、OVER\_16\_45\_INV、OVER\_46\_75\_INV、OVER\_76\_INV共四個序列，負向透過堆疊的方式由下到上分別為OVER\_1\_15\_CM、OVER\_16\_45\_CM、OVER\_46\_75\_CM、OVER\_76\_CM共四個序列。
        5. 承上，堆疊直方圖請參考Highcharts的Bar with negative stack：<https://www.highcharts.com/demo/bar-negative-stack>
        6. 上圖為示意圖，確切我們只會提供六周的資料 (Overdue Trend in last six weeks)。Y軸標題為Overdue Amount (USD)，X軸不須標題。四個正向序列的顏色請參考表格的藍、黃、橘、紅；負向的部分以淺藍、淺黃、淺橘、淺紅呈現。

## APP Page: Overdue Soon

資料來源搭配 “4.9 Function: Outstand Detail”的輸出結果，Total Amount以DUE\_SOON\_INV顯示，其他欄位都很直覺就不贅述。



## APP Page: Expired Soon

資料來源搭配 “4.10 Function: Credit Expired Soon”的輸出結果，Total Amount以DUE\_SOON\_INV顯示，其他欄位都很直覺就不贅述。

## APP權限控管

比照之前的BenQ EIS Mobile，以User Name訪問 “4.11 Function: User Authority”的Web Service，Web Service會返回一組該用戶可以訪問的Facility列表。這是全域的參數，每個頁面都必須用這些Facility篩選出結果。

# File Structure Description

[Comment] Description of database schema design

## Database Object List

[Comment] database object list, such as: table, view , store procedure

|  |  |  |
| --- | --- | --- |
| Object Name | Type | Database Name |
|  |  |  |

## Entity-Relation Chart

[Suggestion] using Microsoft Visio

## Table Layout

# Non-Functional Requirements

## Hardware & Software Requirements

[Comment] Description of recommended hardware and software configuration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hardware | CPU | Memory | Hard-disk | Others (etc. Net status…) |
| Client |  |  |  |  |
| AP Server |  |  |  |  |
| DB Server |  |  |  |  |
| … |  |  |  |  |
| Software | OS, Application Requirement | | | |
| Client |  | | | |
| AP Server |  | | | |
| DB Server |  | | | |
| … |  | | | |

## Performance Requirements

[Comment] Description of system performance index, such as page loading speed，responding of user operation，Interfaces of interactive system，Job/Service runtime

[Suggestion] default page loading speed within 3 seconds

|  |  |  |
| --- | --- | --- |
| Manual | Test Datum Quantity | Expected Performance (s) |
|  |  |  |

# Others