主題 5：報表工具 JasperReports

介紹

JasperReports是由Java為發展核心所開發，可以支援多種形式應用程式產生動態報表，

例如J2EE 或 Java Web Application， 可以產生PDF、HTML、Word、Excel、OpenOffice、ODT與XML等多種報表格式。

經過下方四個過程就能快速產出report

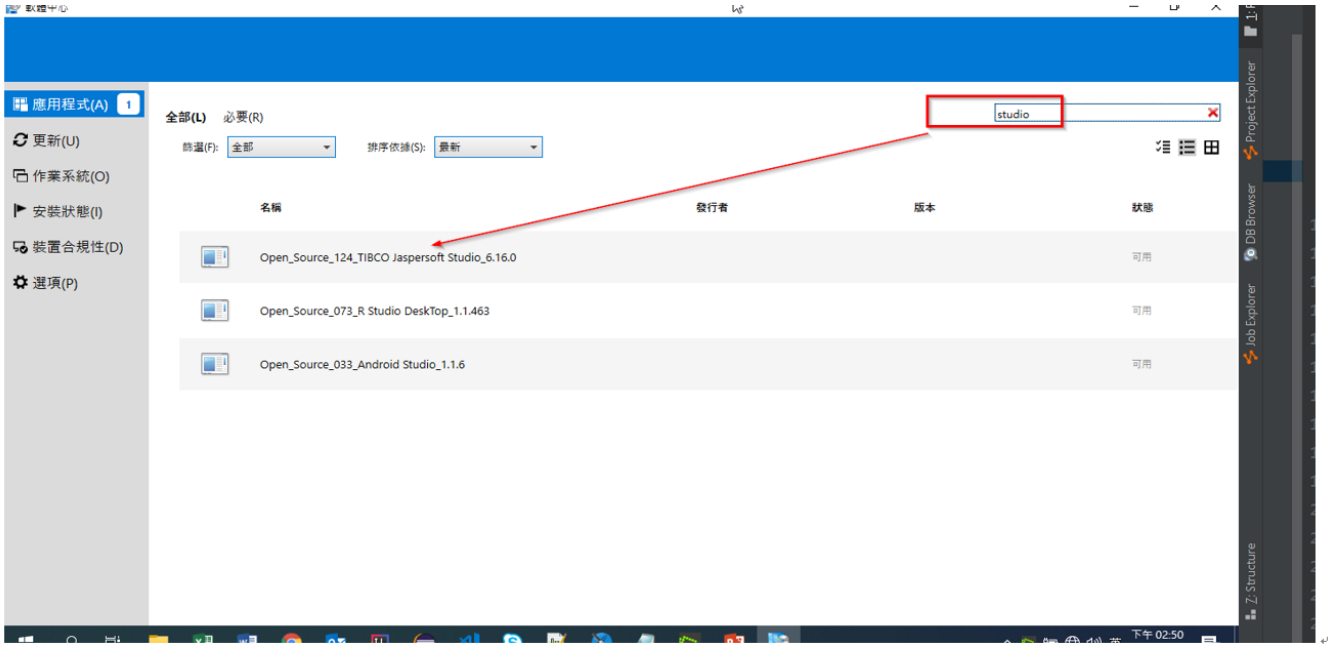
1. **報表設計**
2. **編譯報表設計**
3. **報表裝填（Filling Report）**
4. **導出報表**

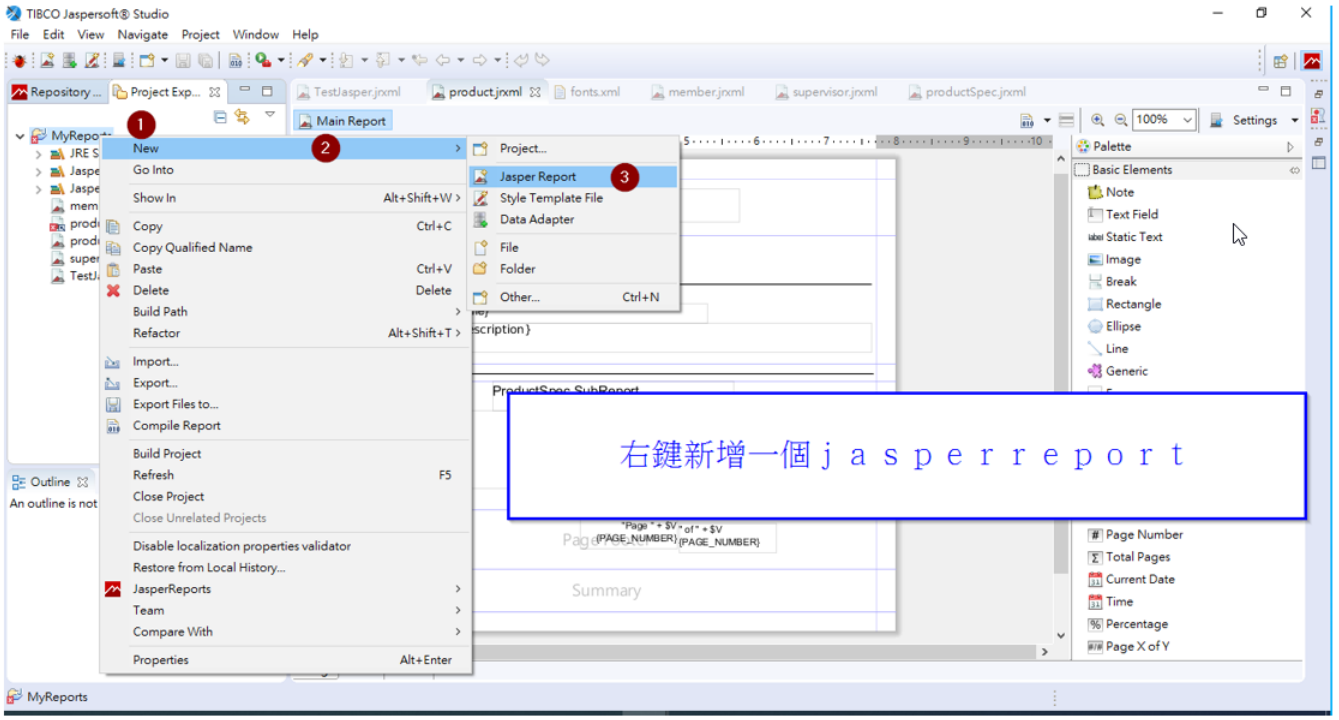
JasperReports環境建置

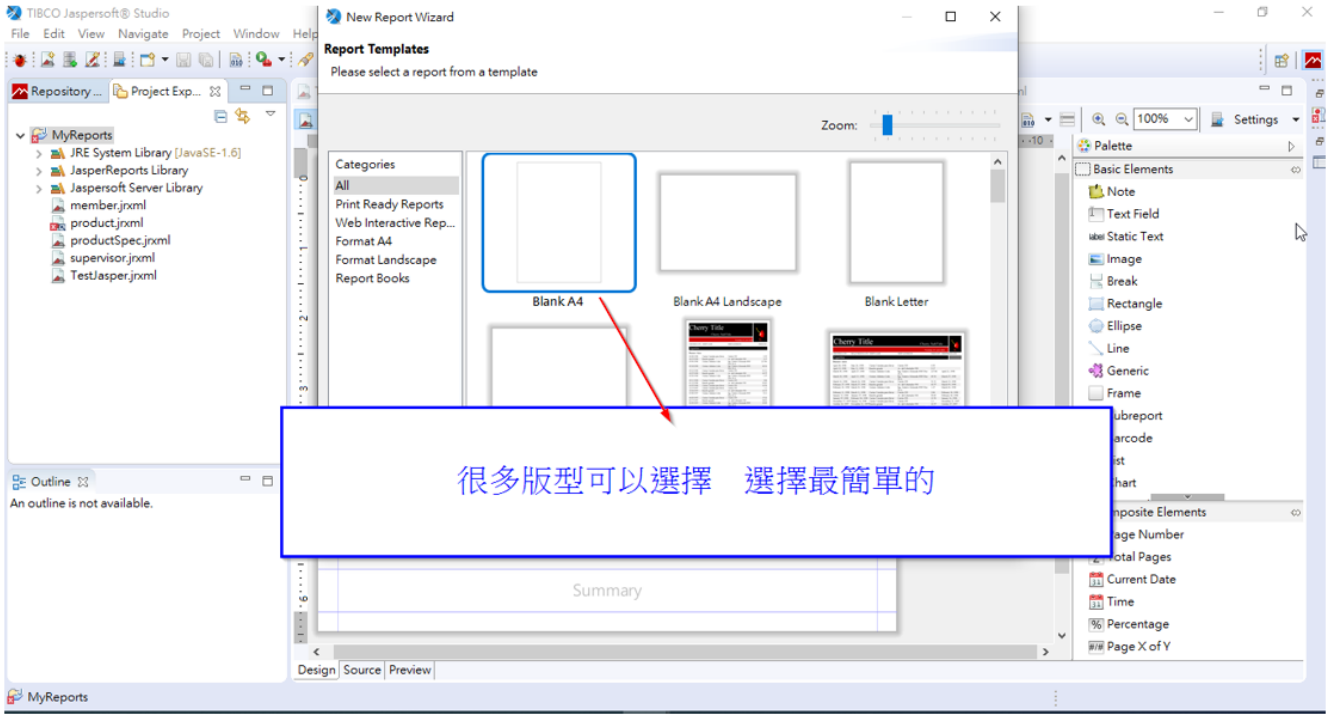
步驟一:安裝JasperStudio，jasperReport的圖形化介面，是基於Eclipse所以二者相當像。

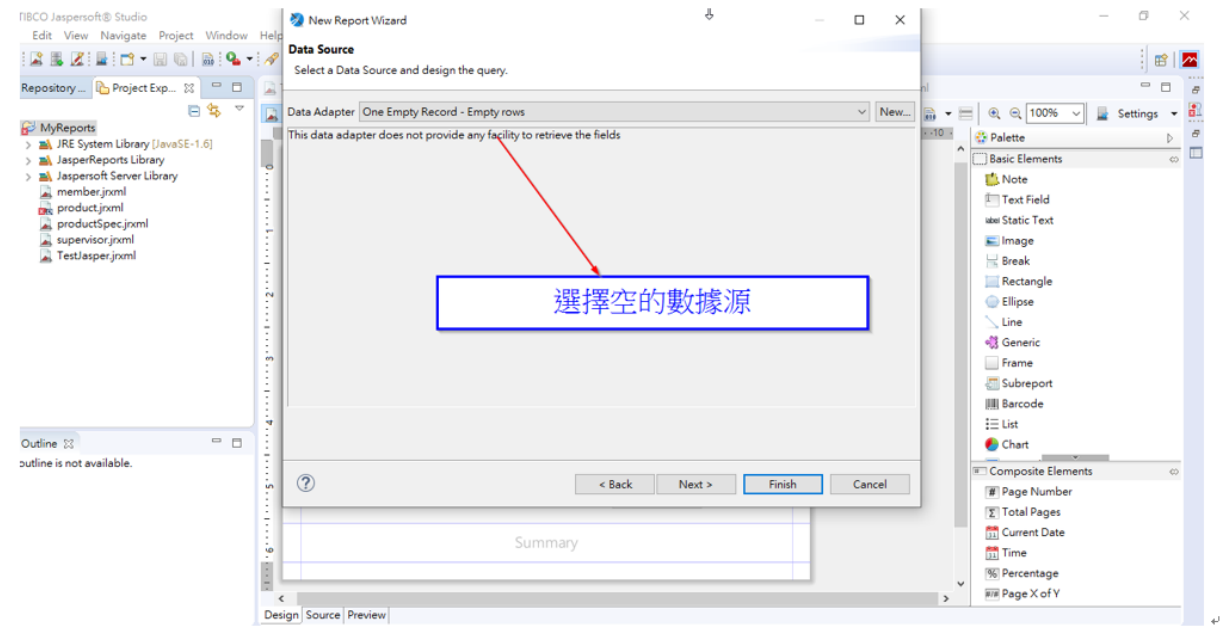
它的前身是iReport目前還是有人在使用，但目前公司使用JasperStudio。

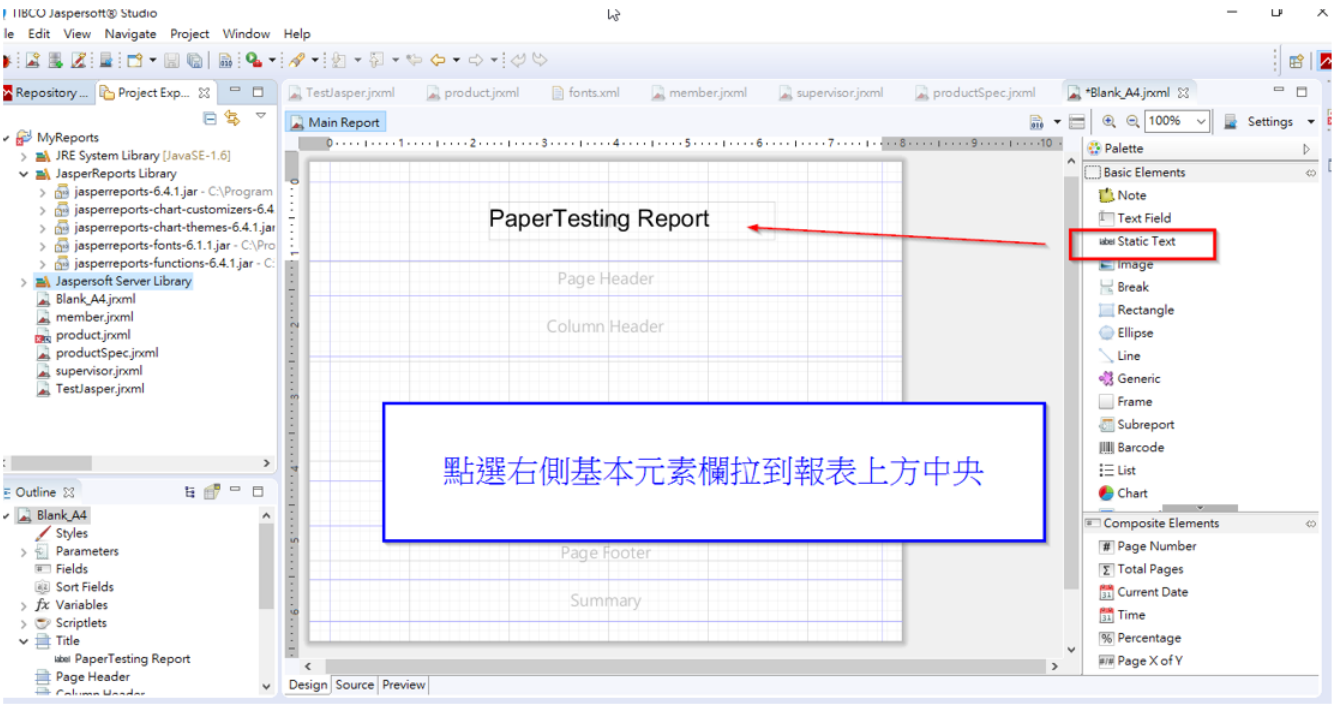
請進入到軟體中心搜尋studio




TIBCO Jaspersoft® Studio
File Edit View Navigate Project Window Help
Repository... Project Exp...
TestJasper.jrxml product.jrxml fonts.xml member.jrxml supervisor.jrxml productSpec.jrxml
Main Report
1
2
3
New
Go Into
Show In Alt+Shift+W
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Delete Delete
Build Path
Refactor Alt+Shift+T
Import...
Export...
Export Files to...
Compile Report
Build Project
Refresh F5
Close Project
Close Unrelated Projects
Disable localization properties validator
Restore from Local History...
JasperReports
Team
Compare With
Properties Alt+Enter
Project...
Jasper Report
Style Template File
Data Adapter
File
Folder
Other... Ctrl+N
Palette
Basic Elements
Note
Text Field
Static Text
Image
Break
Rectangle
Ellipse
Line
Generic
Page Number
Total Pages
Current Date
Time
Percentage
Page X of Y
Summary
Outline
An outline is not
MyReports
右鍵新增一個ｊａｓｐｅｒｒｅｐｏｒｔ


TIBCO Jaspersoft® Studio
New Report Wizard
Report Templates
Please select a report from a template
Zoom:
Categories
All
Print Ready Reports
Web Interactive Rep...
Format A4
Format Landscape
Report Books
Blank A4
Blank A4 Landscape
Blank Letter
MyReports
JRE System Library [JavaSE-1.6]
JasperReports Library
Jaspersoft Server Library
member.jrxml
product.jrxml
productSpec.jrxml
supervisor.jrxml
TestJasper.jrxml
Palette
Basic Elements
Note
Text Field
Static Text
Image
Break
Rectangle
Ellipse
Line
Generic
Frame
Current Date
Time
Percentage
Page X of Y
Summary
Design Source Preview
Outline
An outline is not available.
MyReports
很多版型可以選擇　選擇最簡單的





Jasper report (Jaspersoft)

常用頁面區塊：

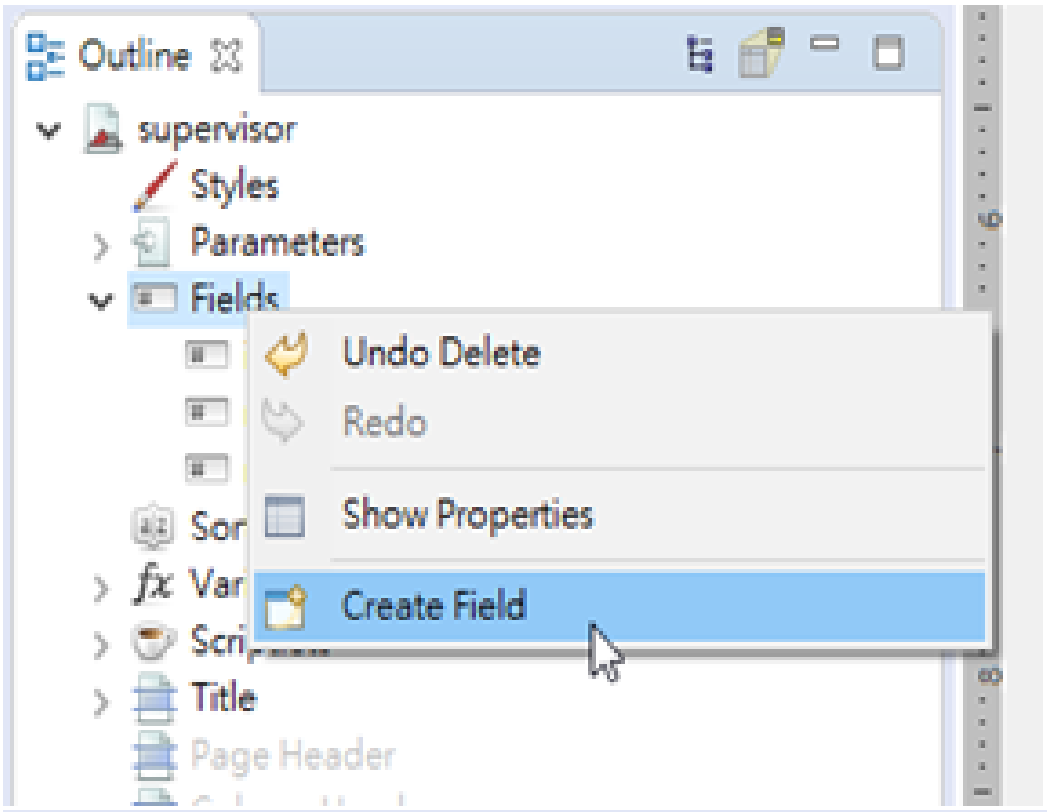
只有Title與summary不重複顯示

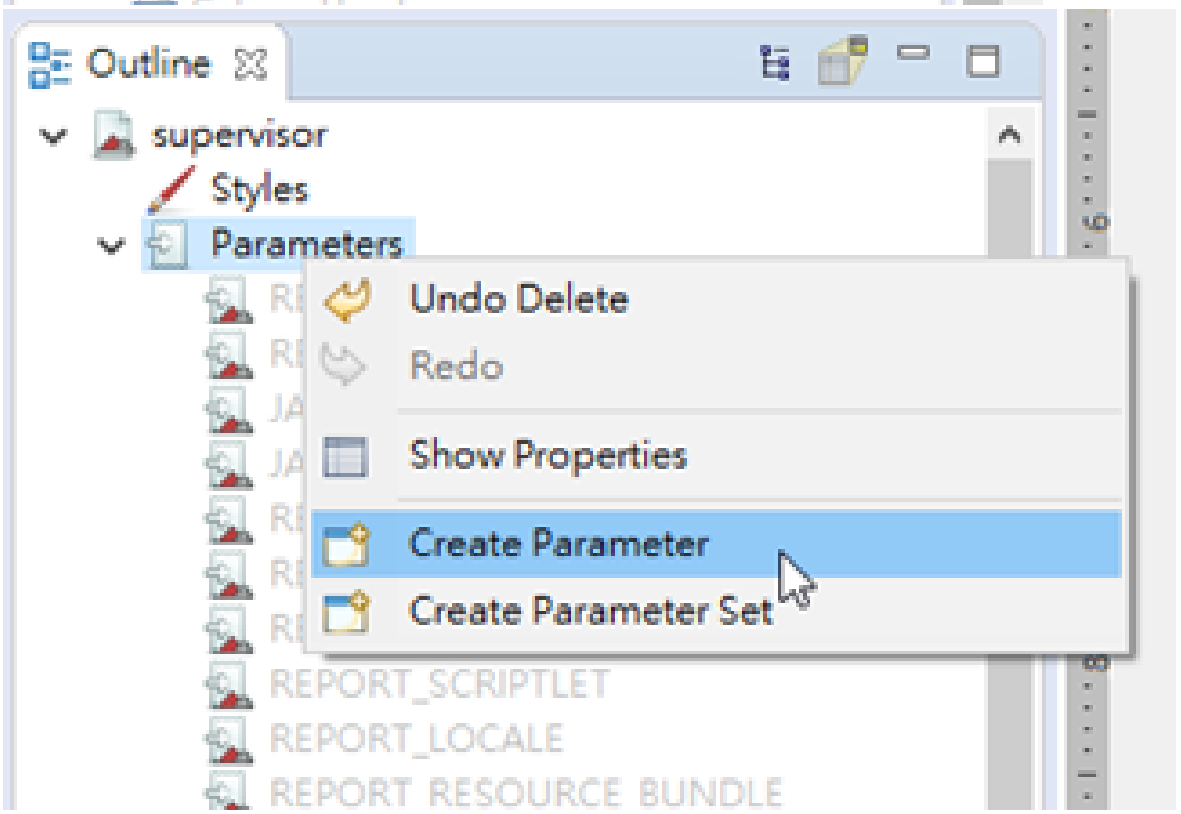
- Title: 該報表的開頭
- Page Header: 報表每頁上方重複的字樣
- Detail: 報表內容 (依據資料來源一次顯示多筆資料)

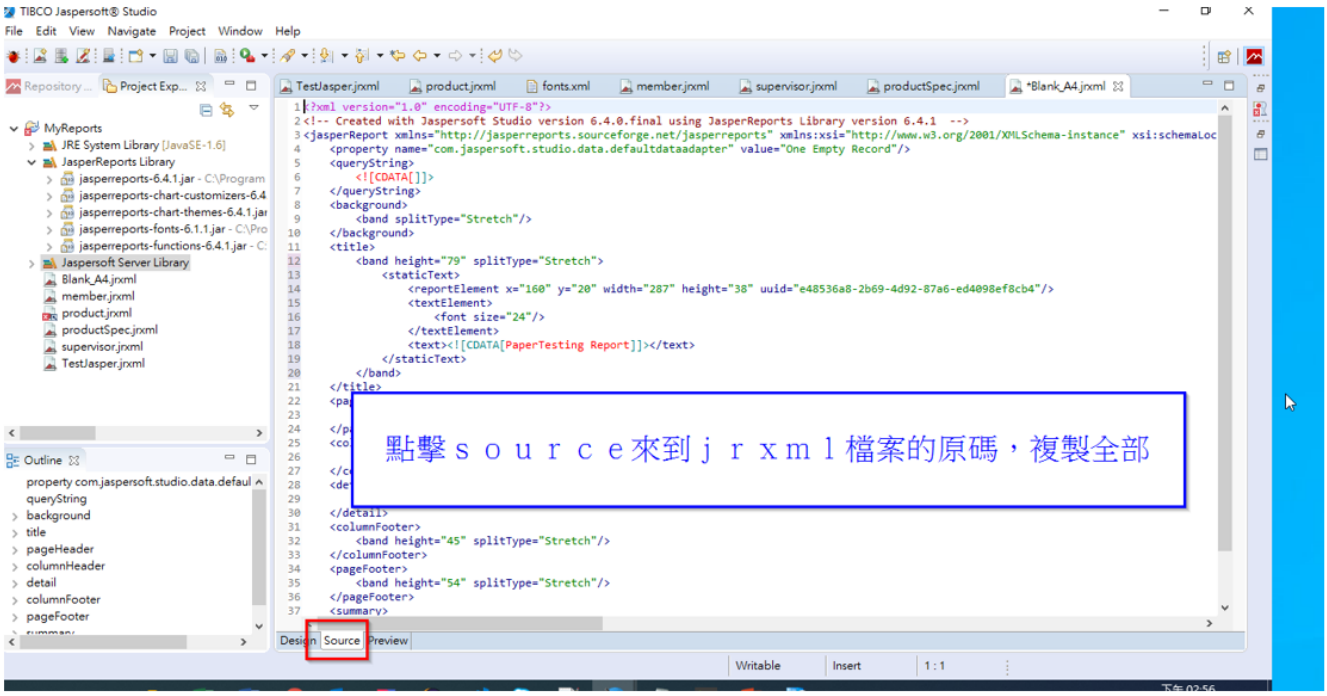
可以有多個Detail主要用來排版或者有多個子報表時各自迭代互不相擾

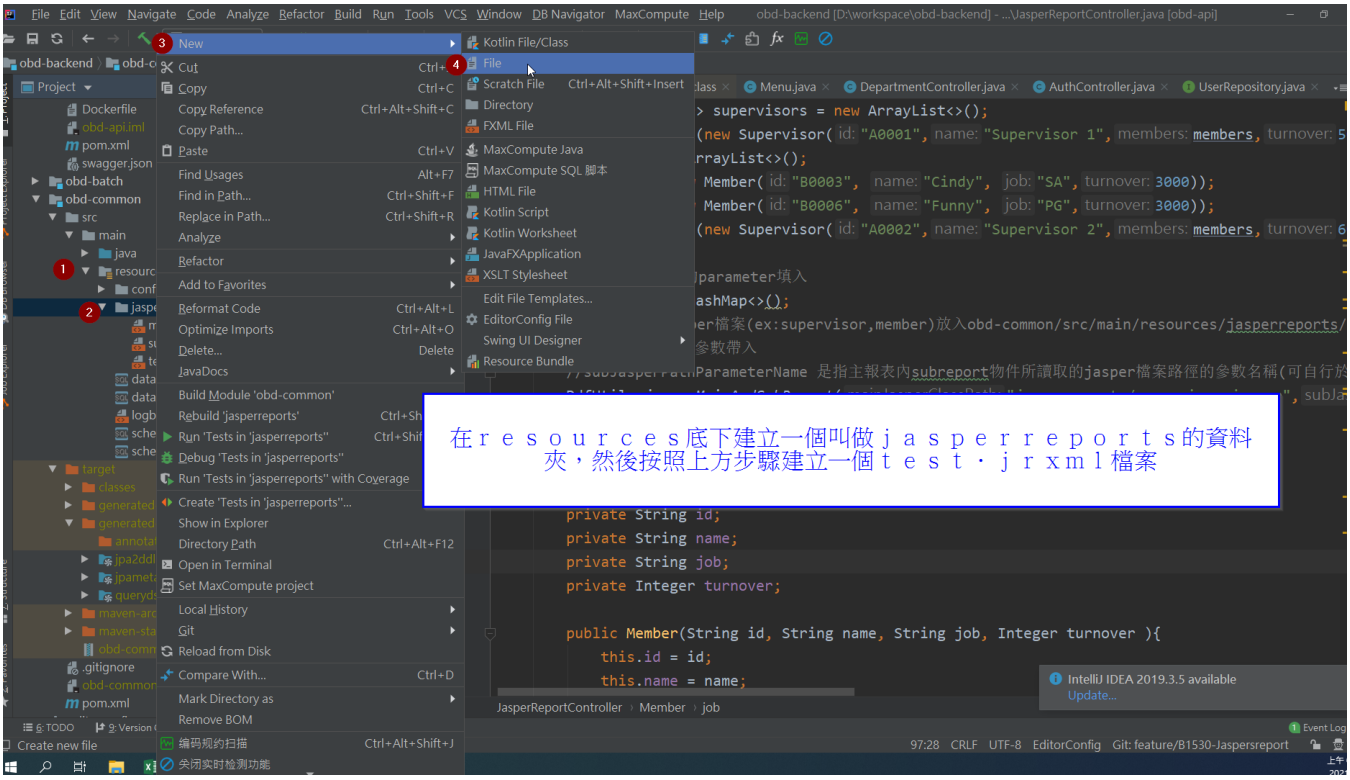
- Page Footer: 報表每頁下方重複字樣:
- Summary: 該報表的結尾

新增欄位與參數

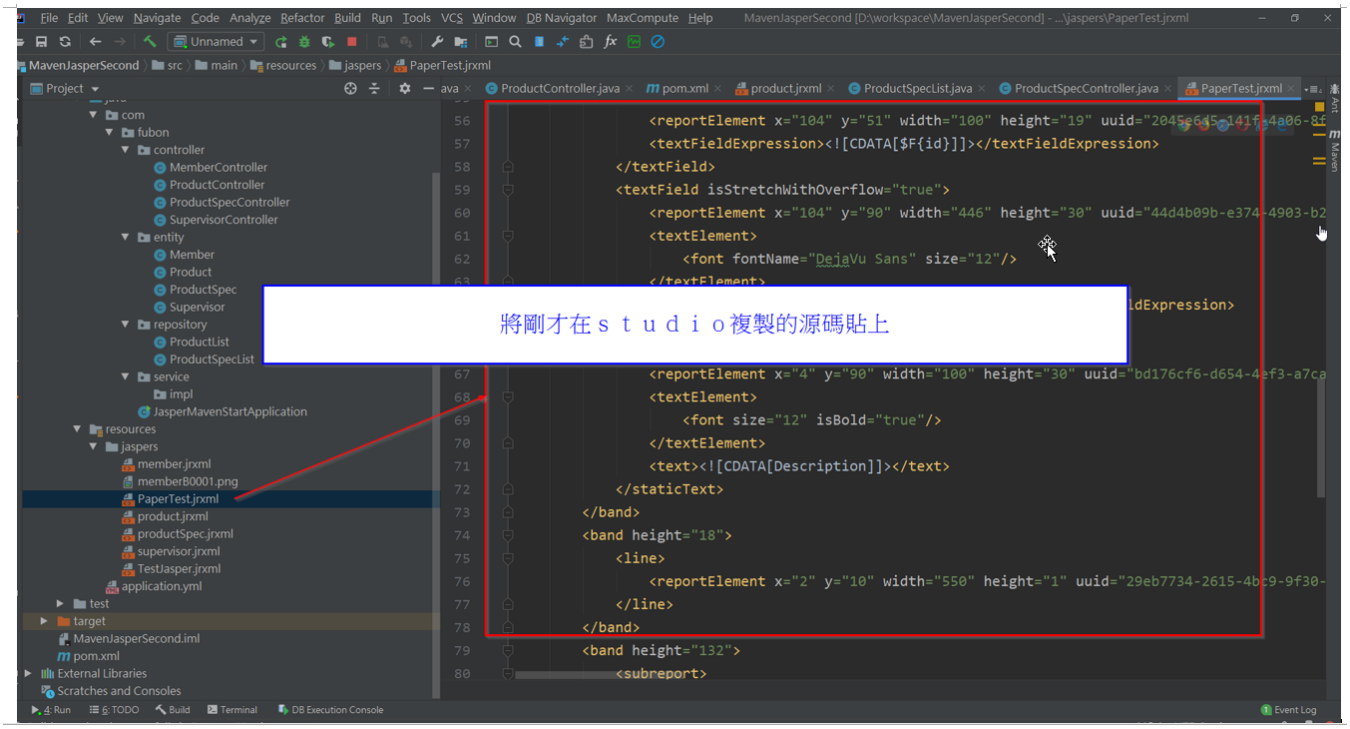

Outline
supervisor
Styles
Parameters
Fields
Undo Delete
Redo
Show Properties
Create Field
Title
Page Header

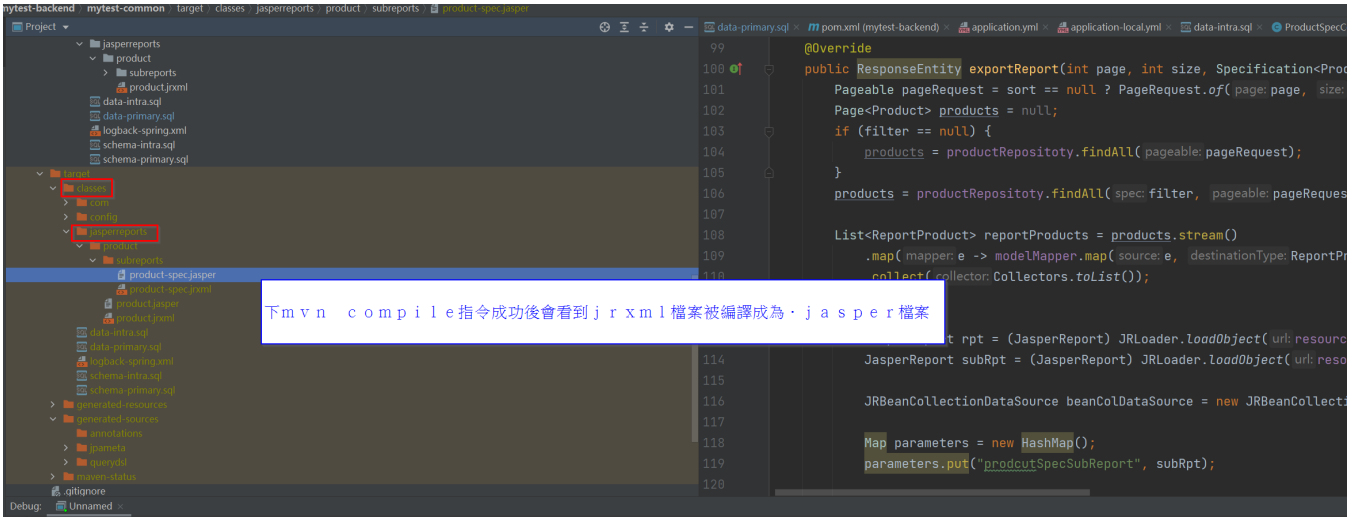

Outline
supervisor
Styles
Parameters
Undo Delete
Redo
Show Properties
Create Parameter
Create Parameter Set
REPORT_SCRIPTLET
REPORT_LOCALE
REPORT_RESOURCE_BUNDLE





由於在maven設定自動編譯.jrxml成為jasper檔案的地方路徑設定為jasperreports資料夾下的.jrxml，所以資料夾命名為jasperreports，未來集中放置.jrxml文件，可以依照功能類型往下分成子資料夾，如user,member,account等等。





步驟二：匯出報表Jasper report(Java)

```
1 //取得jasper檔案
  ClassPathResource resource=new ClassPathResource( path: "jasperreports/test.jasper");
```

```
2 //編譯成jasper report
  JasperReport jp = (JasperReport) JRLoader.loadObject( url: resource.getURL());
```

```
3 //製作參數，型態為map，可以允許為空
  Map param=new HashMap<>();
```

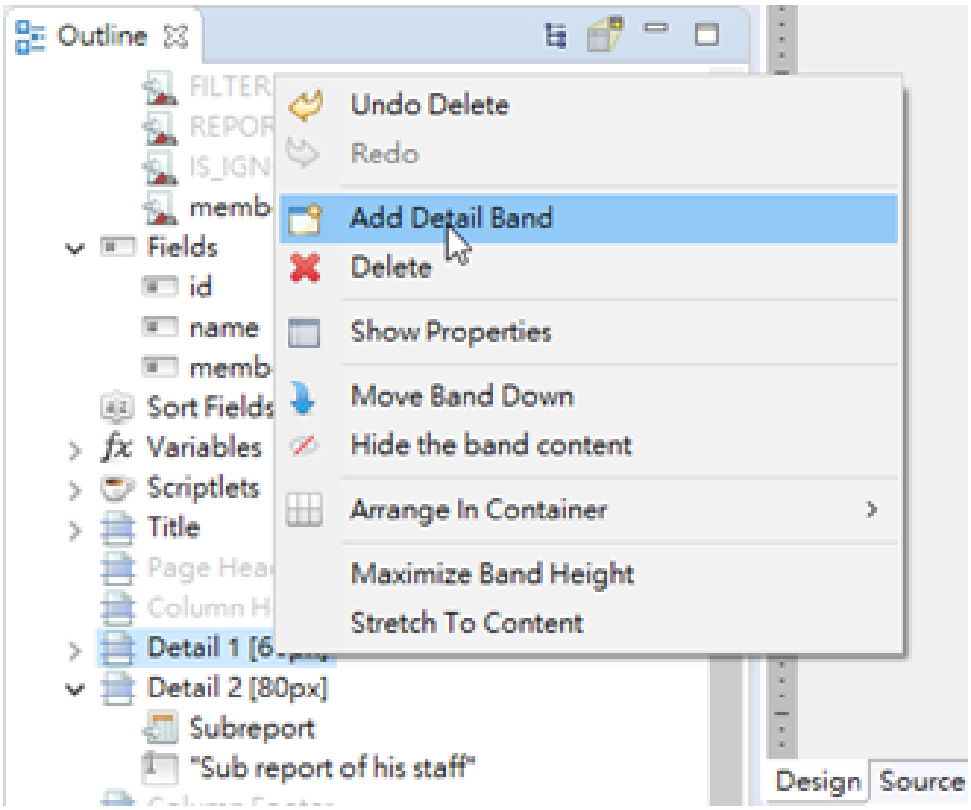
```
4 //編譯成jasper print，輸入三樣參數jp,param,以及這邊先暫時使用空的資料源，其他時候使用JavaBean作為資料源
  JasperPrint jasperPrint= JasperFillManager.fillReport( jasperReport: jp, parameters: param,  dataSource: new JREmptyDataSource());
```

```
5 //輸出成PDFFILE到指定路徑，透過該方法輸出的檔案會在obd-common/target/classes/jasperreports/目錄下
  JasperExportManager.exportReportToPdfFile( jasperPrint: jasperPrint, destFileName: resource.getURL().getPath().replace( target: ".jasper", replace
```

也可以選擇顯示在畫面上

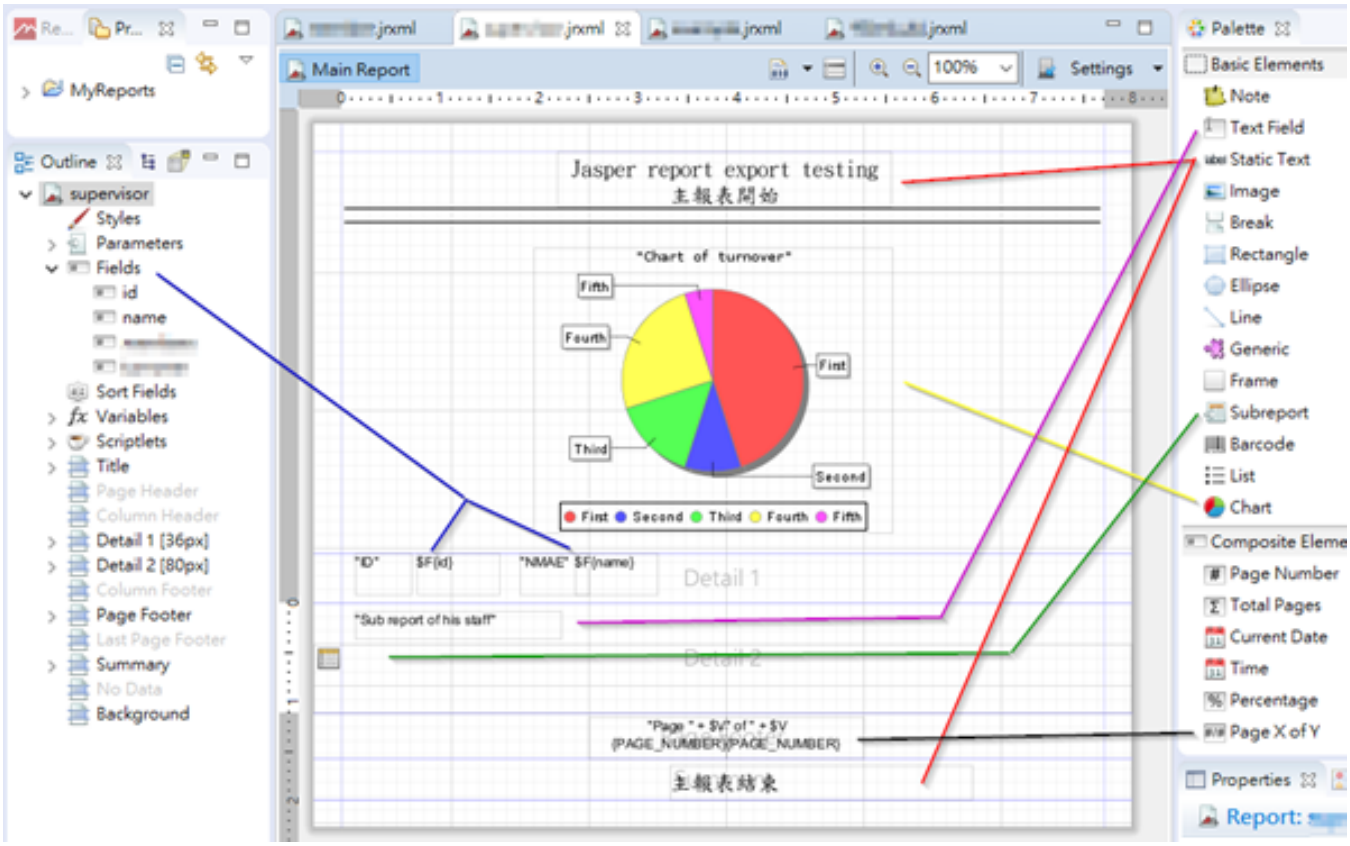
```
JasperPrint jasperPrint =JasperFillManager.fillReport( jasperReport: rpt, parameters: parameters, dataSource: beanColDataSource);
Resource body = new InputStreamResource( inputStream: new ByteArrayInputStream( buf: JasperExportManager.exportReportToPdf( jasperPrint: jasperPrint)));

return ResponseEntity
    .ok()
    .contentType( contentType: MediaType.APPLICATION_PDF)
    .body( body: body);
```

新增Detail版面

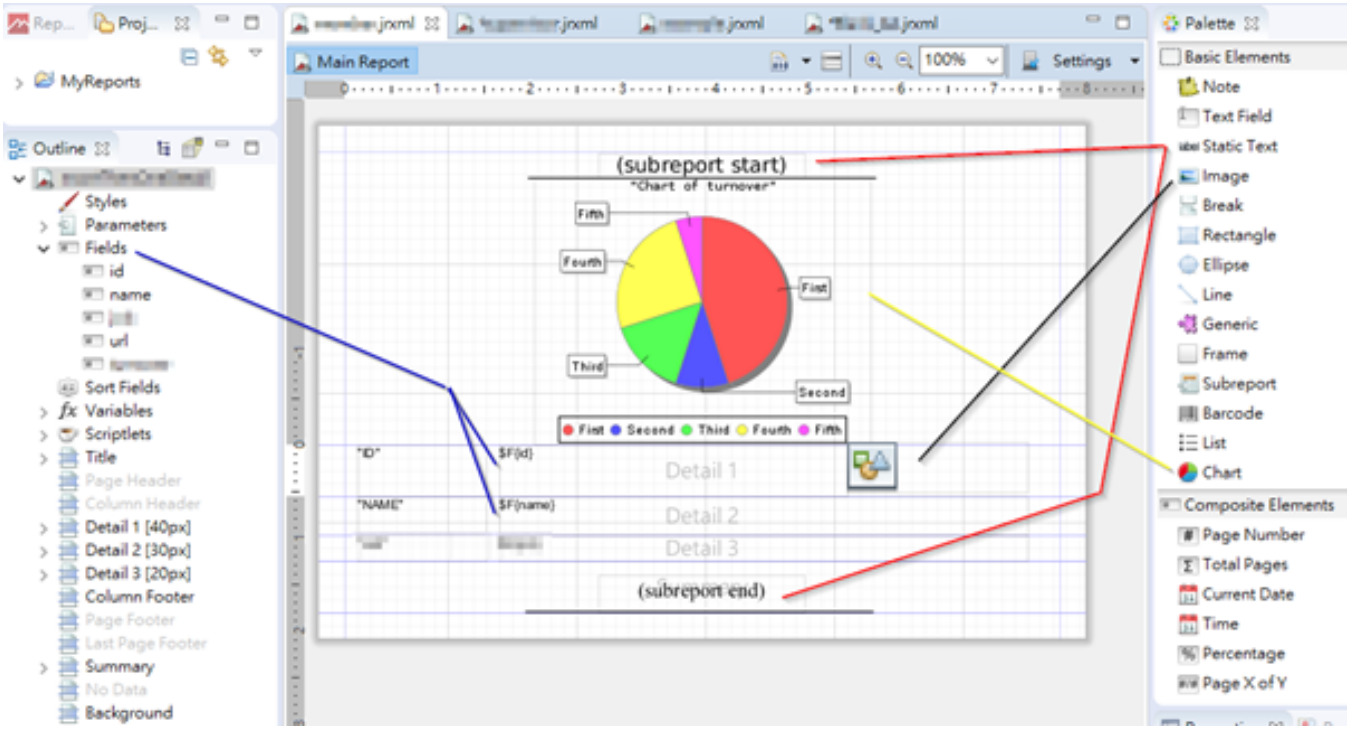


拉報表元件

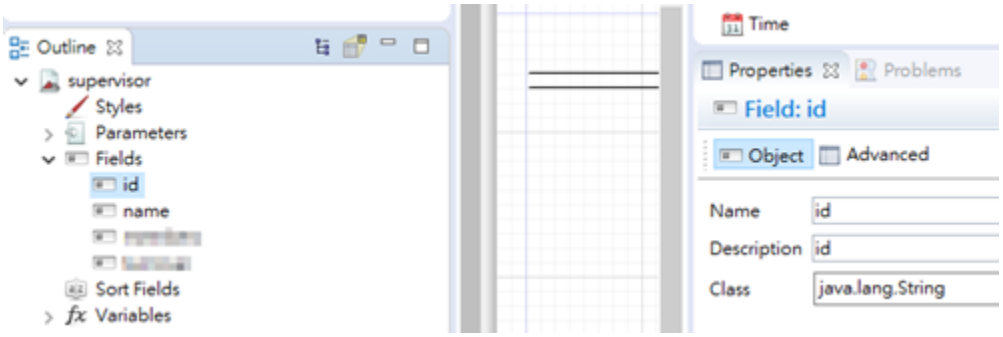
主報表：


MyReports
Outline
supervisor
Styles
Parameters
Fields
id
name
Sort Fields
Variables
Scriptlets
Title
Page Header
Column Header
Detail 1 [36px]
Detail 2 [80px]
Column Footer
Page Footer
Last Page Footer
Summary
No Data
Background
Main Report
100%
Settings
Jasper report export testing
主報表開始
"Chart of turnover"
Fifth
Fourth
First
Third
Second
First Second Third Fourth Fifth
"ID"
$F{id}
"NMAE"
$F{name}
Detail 1
"Sub report of his staff"
Detail 2
"Page " + $V{ of " + $V
{PAGE_NUMBER}{PAGE_NUMBER}
主報表結束
Palette
Basic Elements
Note
Text Field
Static Text
Image
Break
Rectangle
Ellipse
Line
Generic
Frame
Subreport
Barcode
List
Chart
Composite Eleme
Page Number
Total Pages
Current Date
Time
Percentage
Page X of Y
Properties
Report:

子報表：


MyReports
Outline
Styles
Parameters
Fields
id
name
url
Sort Fields
Variables
Scriptlets
Title
Page Header
Column Header
Detail 1 [40px]
Detail 2 [30px]
Detail 3 [20px]
Column Footer
Page Footer
Last Page Footer
Summary
No Data
Background
Main Report
100%
Settings
(subreport start)
"Chart of turnover"
Fifth
Fourth
First
Third
Second
First Second Third Fourth Fifth
"ID"
$F{id}
Detail 1
"NAME"
$F{name}
Detail 2
Detail 3
(subreport end)
Palette
Basic Elements
Note
Text Field
Static Text
Image
Break
Rectangle
Ellipse
Line
Generic
Frame
Subreport
Barcode
List
Chart
Composite Elements
Page Number
Total Pages
Current Date
Time
Percentage
Page X of Y

Fields:
Jasper report bean collection data source 內的欄位，名稱須完全相同
型態預設為String，有需要再自行更改



Static Text(通常作為標題使用)、Text Field: 紅框處為選擇是否將文字全部顯示出來。

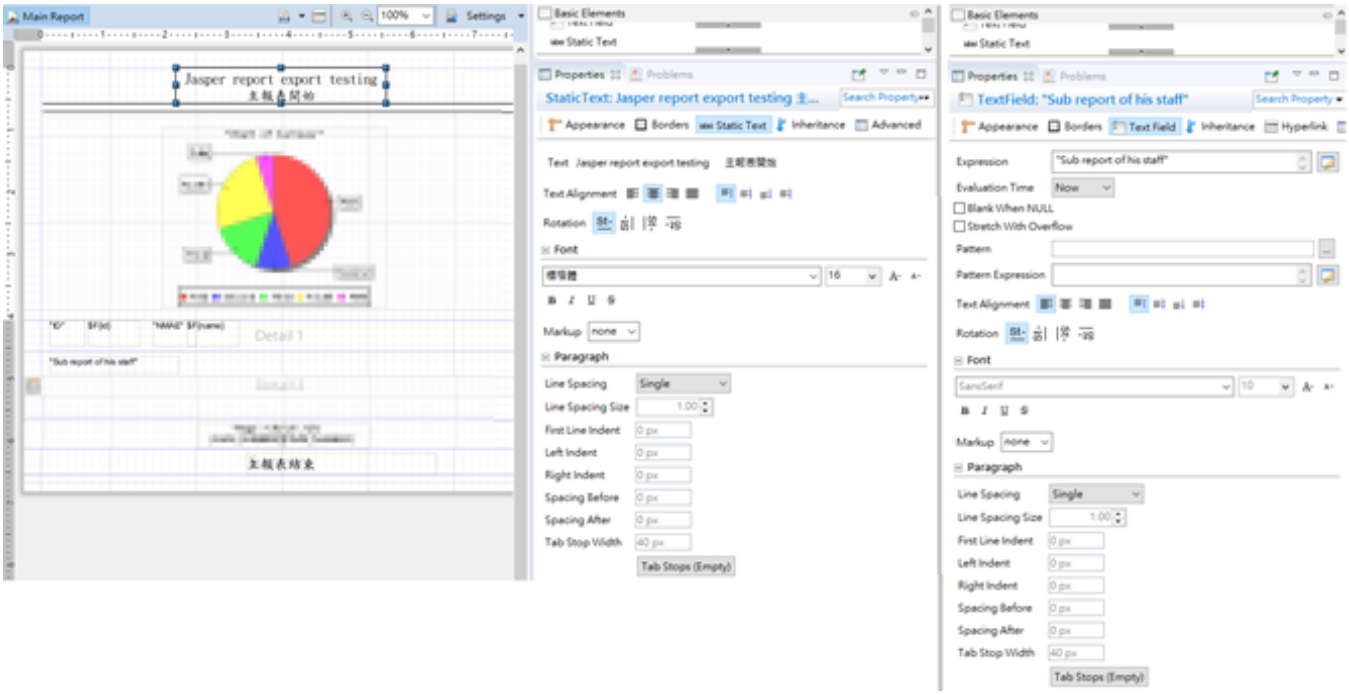
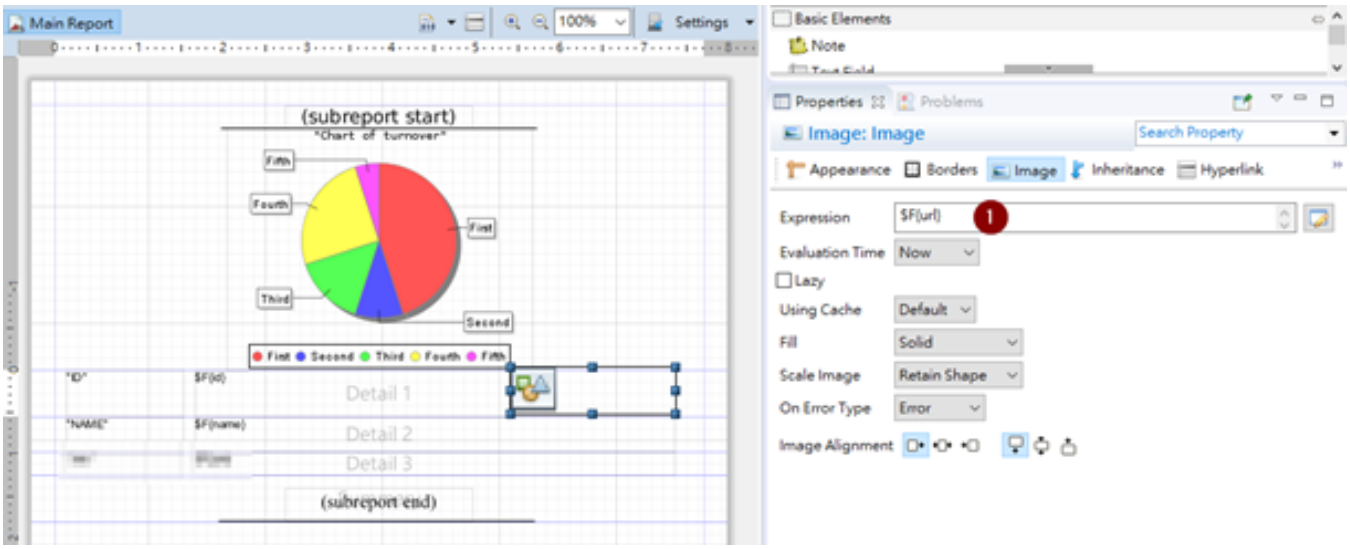


Image:

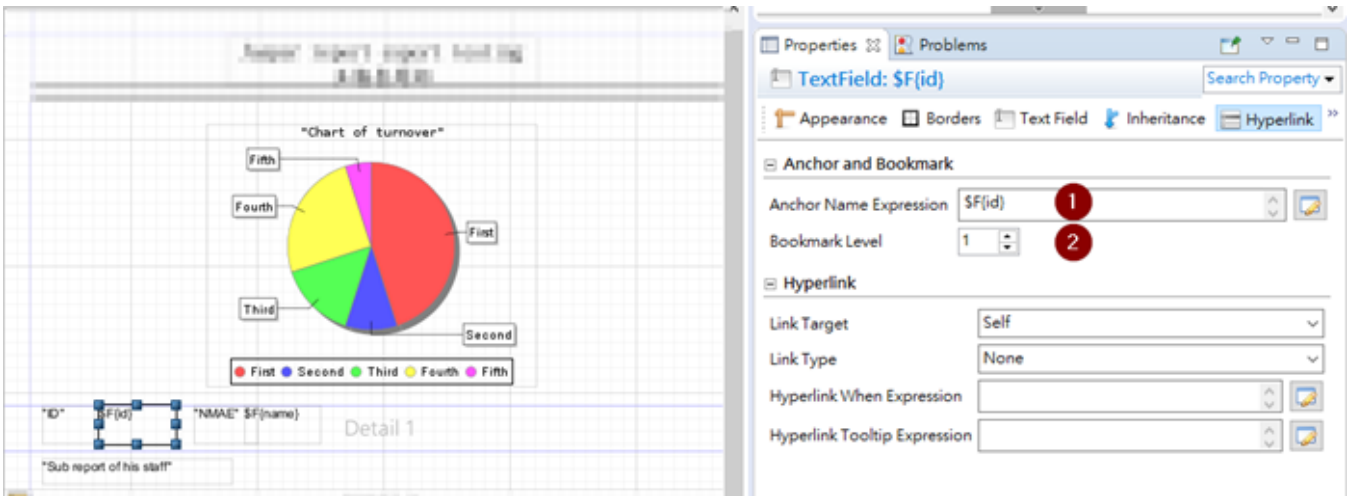


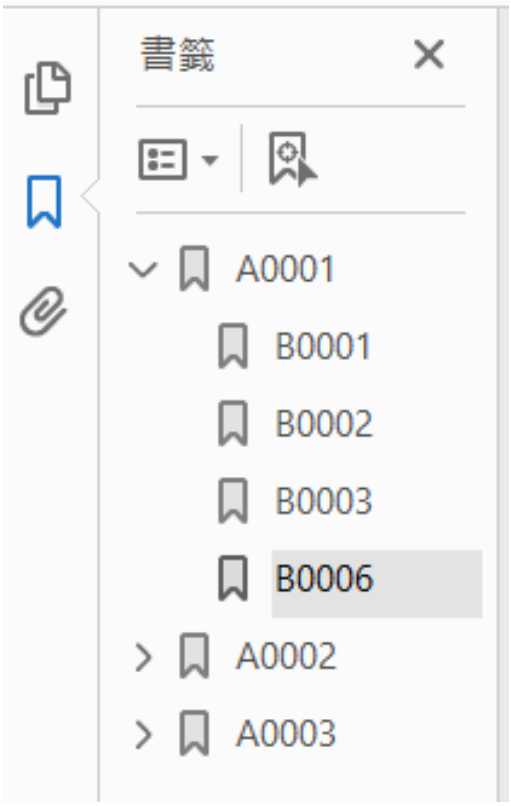
1設定圖片路徑，紅框處是可設定依照欄位或參數動態改變值

(此為以由後端傳入的bean collection data source其一欄位作為設定)

錨點與書籤:

只有image, text field, chart三種元素才能設置錨點與書籤





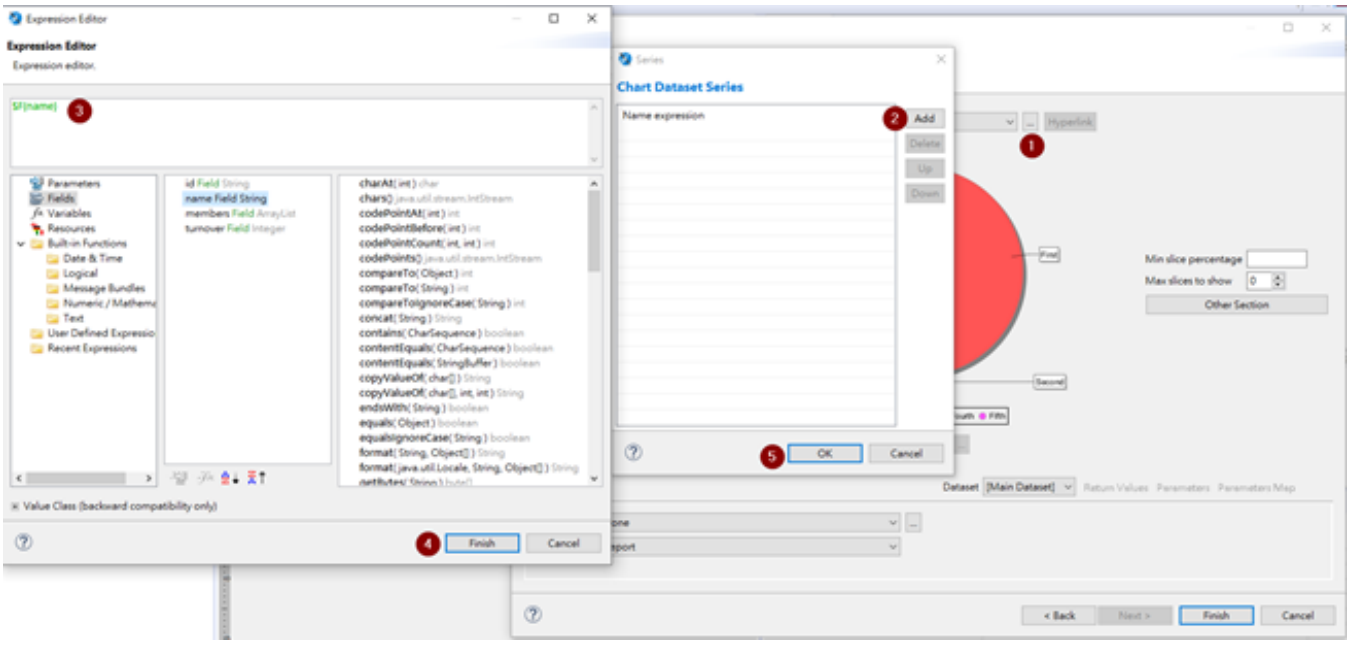
1設定顯示名稱
(此為以由後端傳入的bean collection data source其一欄位作為設定)

2設定階級

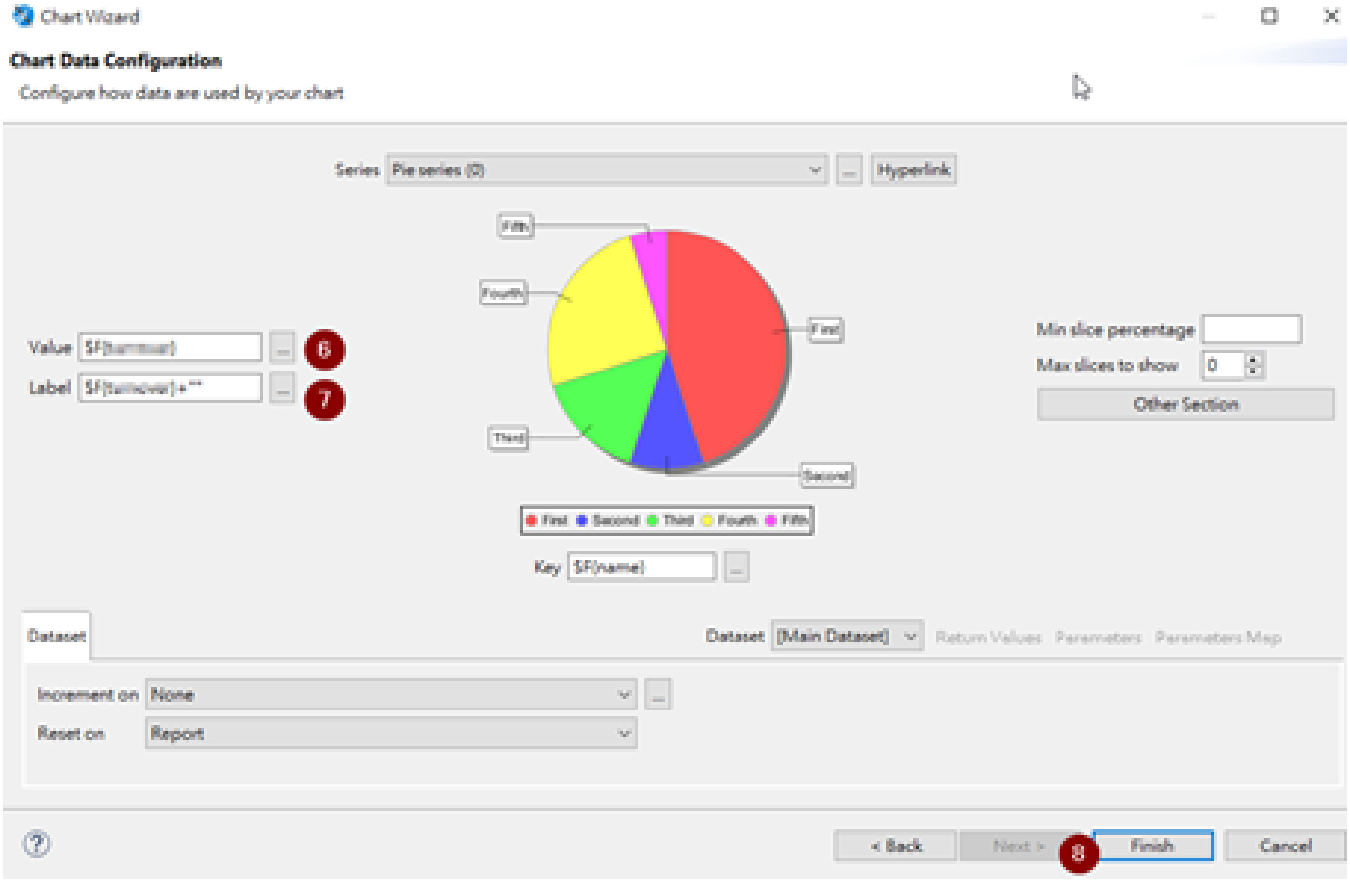
上為書籤範例

Chart: 圖表

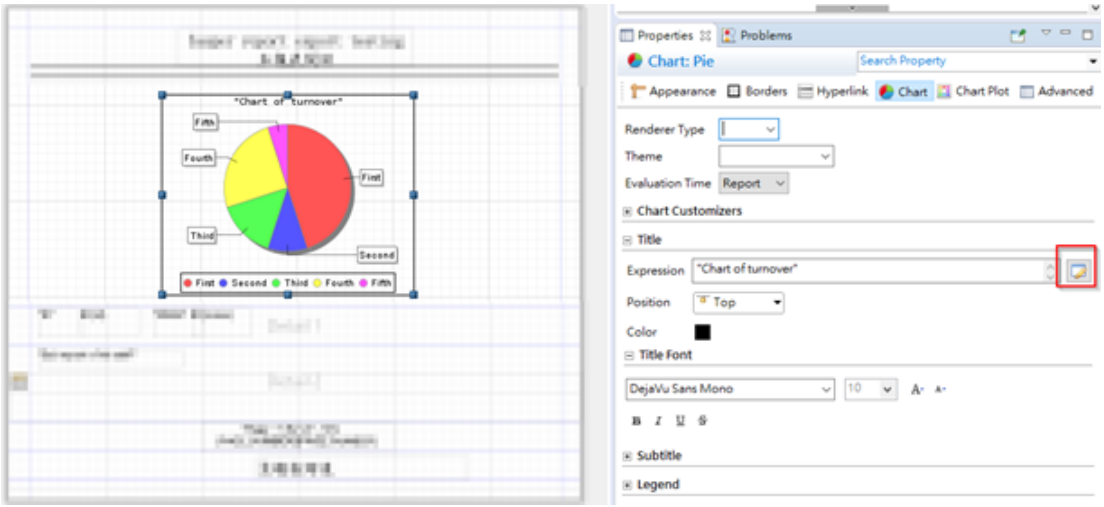
選取圖表資料來源(key)



選取計算用的欄位與設定標籤顯示樣式($F{ } + " " 的用意是讓Integer變成String)

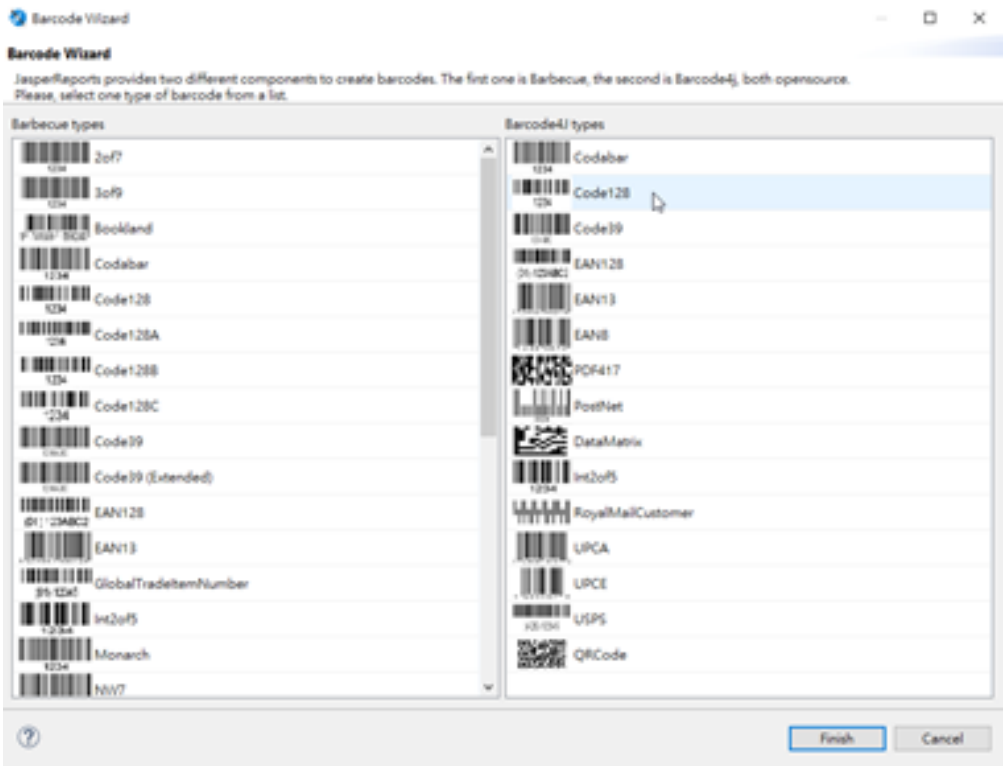


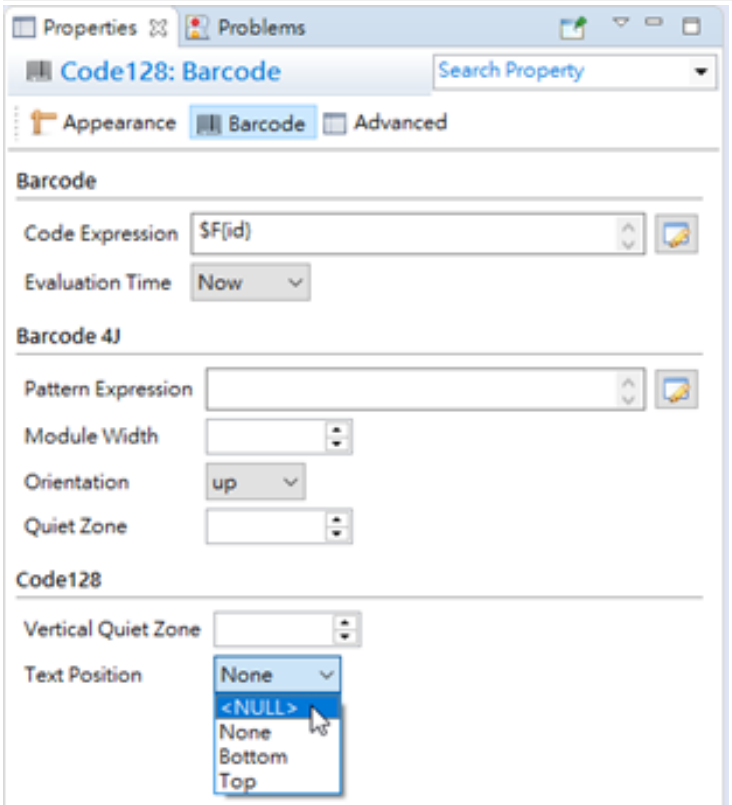
設定圖表標題(記得加上" " 引號)，紅框處是可設定依照欄位或參數動態改變值



Barcode

條碼種類如下圖：





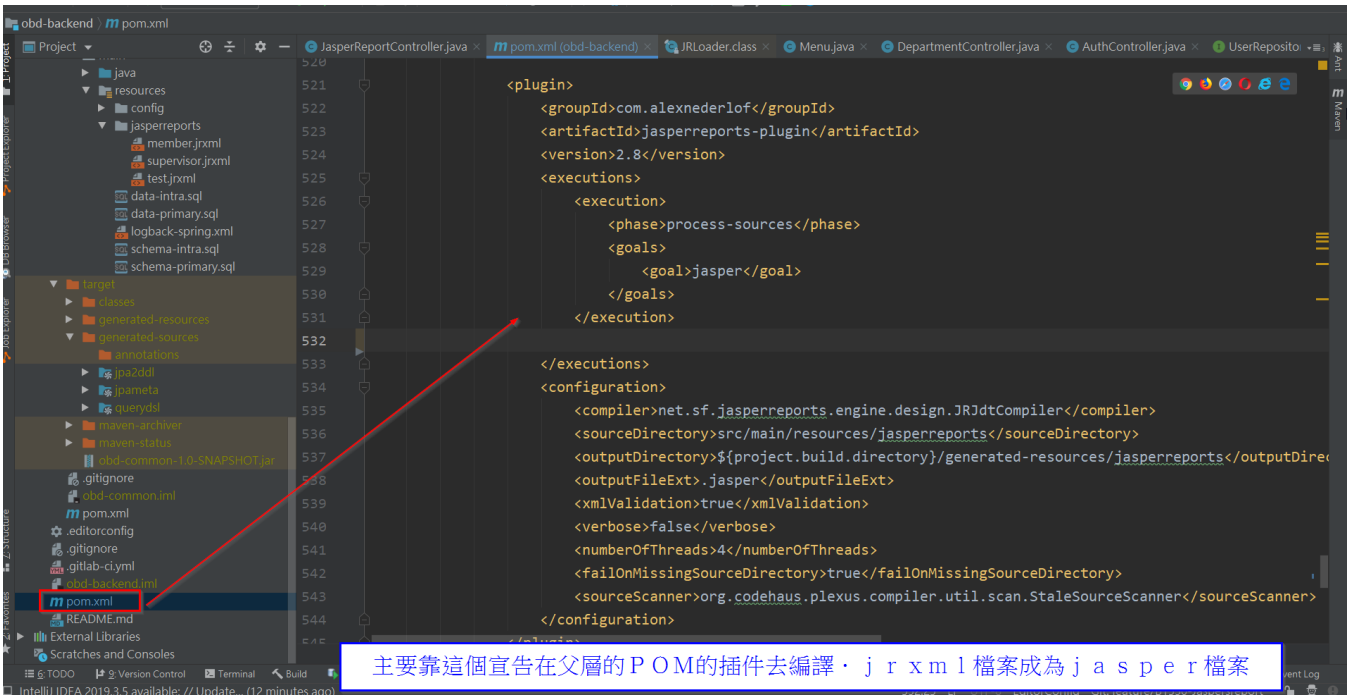
附件:如果自己開一個新專案則需要加入依賴和其maven插件設定。

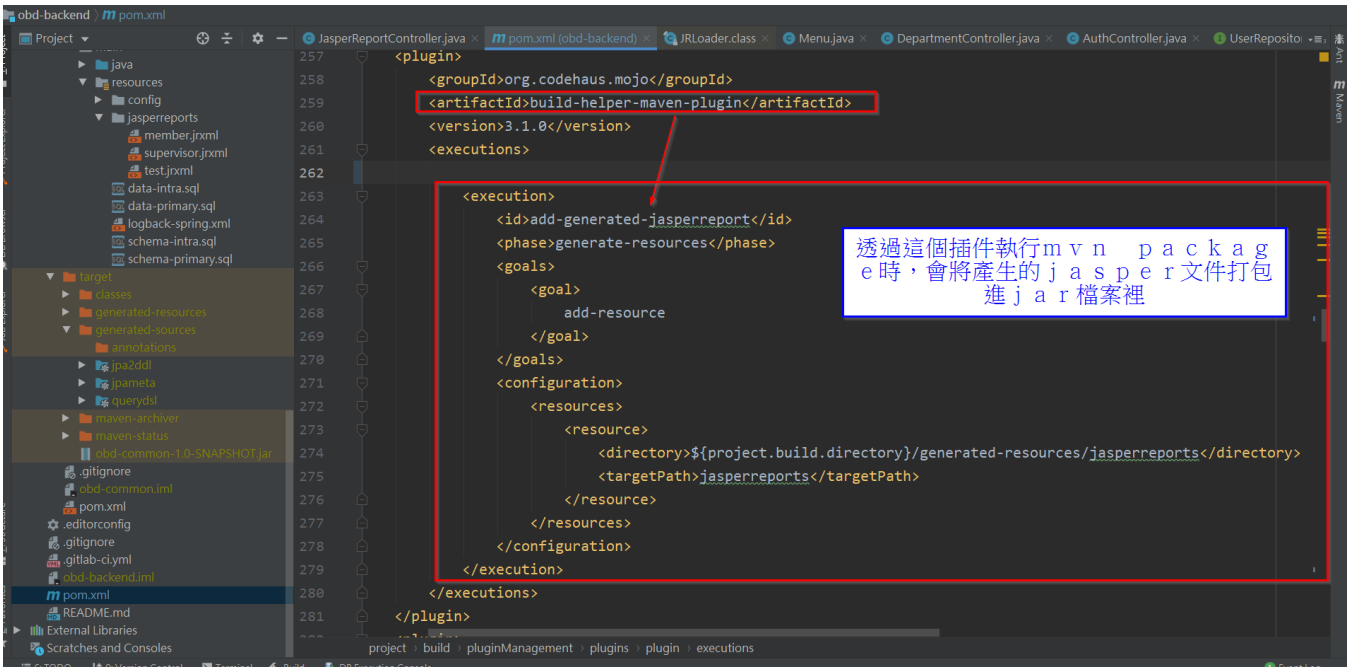
```
<dependency>
    <groupId>net.sf.jasperreports</groupId>
    <artifactId>jasperreports</artifactId>
    <version>6.15.0</version>
</dependency>
```

```
<dependency>
    <groupId>net.sf.jasperreports</groupId>
    <artifactId>jasperreports-fonts</artifactId>
    <version>6.15.0</version>
</dependency>

<!-- https://mvnrepository.com/artifact/com.itextpdf/itextpdf -->
<dependency>
    <groupId>com.itextpdf</groupId>
    <artifactId>itextpdf</artifactId>
    <version>5.5.13</version>
</dependency>
```

下方為插件的部分:

```
<plugin>
 <groupId>org.codehaus.mojo</groupId>
 <artifactId>build-helper-maven-plugin</artifactId>
 <version>3.1.0</version>
 <executions>

 <execution>
 <id>add-generated-jasperreport</id>
 <phase>generate-resources</phase>
 <goals>
 <goal>
 add-resource
                </goal>
 </goals>
 <configuration>
 <resources>
 <resource>
 <directory>${project.build.directory}/generated-resources/jasperreports</directory>
 <targetPath>jasperreports</targetPath>
 </resource>
 </resources>
 </configuration>
 </execution>
 </executions>
</plugin>



<plugin>
 <groupId>com.alexnederlof</groupId>
 <artifactId>jasperreports-plugin</artifactId>
 <version>2.8</version>
 <executions>
 <execution>
 <phase>process-sources</phase>
 <goals>
 <goal>jasper</goal>
 </goals>
 </execution>


 </executions>
 <configuration>
 <compiler>net.sf.jasperreports.engine.design.JRJdtCompiler</compiler>
 <sourceDirectory>src/main/resources/jasperreports</sourceDirectory>
 <outputDirectory>${project.build.directory}/generated-resources/jasperreports</outputDirectory>
 <outputFileExt>.jasper</outputFileExt>
 <xmlValidation>true</xmlValidation>
 <verbose>false</verbose>
 <numberOfThreads>4</numberOfThreads>
 <failOnMissingSourceDirectory>true</failOnMissingSourceDirectory>
 <sourceScanner>org.codehaus.plexus.compiler.util.scan.StaleSourceScanner</sourceScanner>
 </configuration>
</plugin>
```





參考：

https://www.cnblogs.com/max-hou/p/11982035.html

https://www.cnblogs.com/xyyz120/p/12722317.html