Appendix A: Checklist for Usability and User Interface Guidelines

8.2.2
8.2.1
8.1.2
5.3.1
5.2.4
5.2.3
5.2.2
5.2.1
4.6.1
4.5.3
4.4.3
4.4.1
4.3
4.2
4.1
4
3
2
1

Abbreviations

Overview

Assumptions

User Interface Design

Design Objectives

XHTML Standard

HTML5 Standard

Components

Static HTML Content

Cascading Style Sheets

Javascript Files

Packaging and Deployment

Structure and Layout

Standard Layout

Top Menu Layout

Grouped Menu Layout

Browser Support

Screen Resolution

Multi Lingual

User Interface Guidelines

Guidelines for Handling of HTML

Guidelines for Handling of CSS

Introduction

Default CSS

Customized CSS

Theme based CSS

Functionality based CSS

Click to Call

User Interface Branding Process

Multi Lingual Translation Process

Performance Optimizations

Minimizing number of network calls

Data URI

Combining Java script files

Minimizing payload

JS/CSS minification

Data compression using GZIP

Appendix A: Checklist for Usability and User Interface Guidelines

Tools and References
1 Preface

1.1 Intended Audience
This document is intended for the following audience:

- Partners
- Implementation Team

1.2 Documentation Accessibility
For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

1.3 Access to OFSS Support
https://support.us.oracle.com

1.4 Structure
This manual is organized into the following categories:
Preface gives information on the intended audience. It also describes the overall structure of the User Interface Guide

Section 1 Abbreviations lists all the abbreviations used throughout this document

Section 2 Overview gives a broad idea about the user interface of the product

Section 3 User Interface Design details in depth the structure and layout of various components of the user interface

Section 4 User Interface Guidelines specifies the guidelines to be followed while modifying user interface components

Section 5 User Interface Branding Process describes the steps to apply a brand-specific theme to the user interface

Section 6 Multi-lingual translation process describes the steps to customize the user-interface to a language other than English

Section 7 Performance Optimizations describes the techniques used for enhancing front-end performance, and also describes the related steps that need to be followed during deployment

Section 8 Checklist for usability and user interface guidelines lists items to be analysed while customizing the user interface

1.5 Related Information Sources
For more information on Oracle FLEXCUBE Direct Banking Release 12.0.3.0.0, refer to the following documents:
Oracle FLEXCUBE Direct Banking Licensing Guide
Oracle FLEXCUBE Direct Banking Installation Manuals
The following abbreviations are used in the document:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java SE</td>
<td>Java Standard Edition</td>
</tr>
<tr>
<td>Java EE</td>
<td>Java Enterprise Edition</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Markup Language</td>
</tr>
<tr>
<td>XHTML</td>
<td>The Extensible Hypertext Markup Language</td>
</tr>
<tr>
<td>HTML</td>
<td>Hypertext Markup Language</td>
</tr>
<tr>
<td>SGML</td>
<td>Standard Generalized Markup Language</td>
</tr>
<tr>
<td>JS</td>
<td>Java Script</td>
</tr>
<tr>
<td>CSS</td>
<td>Cascading Style Sheets</td>
</tr>
<tr>
<td>XSL</td>
<td>Extensible Stylesheet Language</td>
</tr>
<tr>
<td>XSLT</td>
<td>Extensible Stylesheet Language Transformations</td>
</tr>
<tr>
<td>GIF</td>
<td>Graphics Interchange Format</td>
</tr>
<tr>
<td>JPG</td>
<td>Joint Photographic Group</td>
</tr>
<tr>
<td>PNG</td>
<td>Portable Network Graphics</td>
</tr>
<tr>
<td>TIFF</td>
<td>Tag Image File Format</td>
</tr>
<tr>
<td>OS</td>
<td>Operating System</td>
</tr>
<tr>
<td>PDF</td>
<td>Portable Document Format</td>
</tr>
<tr>
<td>DOC/DOCX</td>
<td>Microsoft Document</td>
</tr>
<tr>
<td>XLS/XLSX</td>
<td>Microsoft Excel</td>
</tr>
<tr>
<td>RTF</td>
<td>Rich Text Format</td>
</tr>
<tr>
<td>CSV</td>
<td>Comma Separated Values</td>
</tr>
<tr>
<td>DTD</td>
<td>Document Type Definition</td>
</tr>
</tbody>
</table>
3 Overview

Oracle FLEXCUBE Direct Banking is a multi channel e-banking platform with support for customer touch points like Internet, Mobile Phones and PDAs. Oracle FLEXCUBE Direct Banking is based on the industry standard Java Standard Edition (Java SE) and Oracle Java Enterprise Edition (Java EE) platforms.

For the Mobile Banking features, Oracle FLEXCUBE Direct Banking leverages on the Java Micro Edition (Java ME) features. It also provides applications based on iOS, Android and Blackberry Platforms. For the User Interface guidelines for mobile channel, please refer to the document Oracle_FLEXCUBE_Direct_Banking_Mobile_Banking_User_Interface_Guide.

The document provides the list of hardware and software environments on which the platform is available. Oracle FLEXCUBE Direct Banking is a Java EE compliant application and can be supported on any Java EE standard platform supporting JDK1.5 and Java EE1.4 specifications. The document provides the hardware and software requirements for the recommended platforms on which Oracle FLEXCUBE Direct Banking can be deployed.

3.1 Assumptions

The document assumes the audience has a good understanding of web technologies like HTML, Java Script and Cascading Style Sheets etc.

Also, the audience is expected to have a basic understanding of the server side technologies used within the application to render the user interface like XML, XSL, XSLT etc.
4 User Interface Design

4.1 Design Objectives

4.2 XHTML Standard
The user interface conforms to the XHTML 1.1 standard.

The XHTML 1.1 standard allows the following DTDs to be used within the pages.

```html
<!DOCTYPE html
    PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<!DOCTYPE html
    PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<!DOCTYPE html
    PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

Oracle FLEXCUBE Direct Banking has adopted the Strict DTD of the XHTML 1.1 standard for support of the internet banking user interface. All pages are automatically embedded with the DOCTYPE when the page is rendered using the XSL transformation techniques.

4.3 HTML5 Standard
HTML5 is the next generation of HTML.

HTML5 will be the new standard for HTML.

The previous version of HTML, HTML 4.01, came in 1999. The web has changed a lot since then.

HTML5 is still a work in progress. However, the major browsers support many of the new HTML5 elements and APIs.

```html
<!DOCTYPE html>
```
4.4 Components

To develop Web applications today, a site designer frequently must write a large amount of script to achieve desired dynamic effects. These scripts are typically hard-wired to the particular page; if the content of the page changes, the scripts may have to be rewritten, since there is no way of abstracting one from the other. HTML/HTML5 Components provide this ability. HTML5 is the next generation of HTML. Following are some examples of components.

**Widget** component which works as a different unit which displays personalized data. These widgets can also be customized.

**Grid** Component which has gradient column heading. Bold sub headings.

**Button** Component with gradient background and white colored text.

(Fig. 3.3)
4.4.1 Static HTML Content

In this topic, we will discuss the HTML content, such as menus, forms, themes, tables, grids, graphs etc. that have been used across the FLEXCUBE application. For a better understanding, below are structures of the application.

**Contemporary Version:**

**Classic Version:**
Login Page
Below is a screen shot of the Login page. It consists of the logo which is placed on the top left, a user ID and password text fields, a sign in button, a check box to enable the virtual keyboard on the right and finally the footer.

(Fig. 3.3.1a)

1) **Top Frame**: Top frame is the area on the top with the dark blue background. It has a class name “topbar” it consists of the Logo on the left side and quick links on the right.

2) **Oracle ELXCUBE Logo**: The Logo is placed in a div at the top left corner with class name “topbarlogo”.

3) **Login Section**: This section has a virtual keyboard that is disabled by default. The Login section is placed in a “td” with height as 100% and vertical alignment as middle. Text input fields for User ID and Password is placed on the left and the Virtual keyboard on the right. A check box is provided below the Sign In button that enables the virtual keyboard for use.

4) **Language Selection**: There are various languages like English (Default), Arabic, Spanish, French in selection mode.

5) **Footer**: Footer section is placed at the bottom which has a class “LoginCopyright” applied to it. The text alignment is fixed as center.
FLEXCUBE Application Frame - Dash Board (Contemporary Mode)

Once the user has logged in, the FLEXCUBE application frame appears as a pop up. This frame consists of the top frame which has been explained above. It also includes the Menu area and the Transaction area.

1) **Bottom Menu**: At the time of login, the user has an option to select two types of application structure, one is contemporary and the other is classic. If user selects contemporary then he will get the application interface as shown in the screenshot above (Fig.3.3.1b). The Menu is at the bottom left. The user can navigate to the sub menus just but clicking on the main menu.

2) **Oracle Flexcube Direct Banking logo**: Oracle trademark logo as per UI Branding placing on the top left bar.

3) **Main Navigation**: Navigation links specifies on the right side of top bar - Session Summary, Change Password, Sitemap, Logout

4) **Welcome Text**: Showing user name and placed toggle window showing login details.

5) **Themes**: There are multiple themes like Red, Sea Blue and Black.

6) **Widgets**: Multiple widgets shows brief details of transactions, can be drag and drop in same sized columns.

7) **Task Bar/Favorite Links**: Taskbar placed on the bottom of the bar shows bottom menu, favorite links, time zone, and clock. Favorite links can be placed on the right hand bottom side. Maximum five favorite links can be placed.

8) **Time Zone**: shows time zone of the different country and timer.
9) **Transaction Pages**: This section displays transaction pages. A heading is displayed at the top along with the time and date on top right. In this section transaction page opens in maximize mode by default.

10) **Window Navigation**: Placed on top right bar of the transaction page, have Help, Print, Favorite, Minimize, Maximize, Restore, and Close buttons.

11) **Minimize Window**: Click on maximize button to toggle it to minimize mode.

12) **Restore Window**: Click on restore button to maximize window.
Menu Type Components – Top Menu (DT)

Menu Type Components – Bottom Menu (D)
GraphTable Component

GraphTable is a component and is created using a table with rows and columns. CSS is applied to control the background color, text size, bold text, column width, and alternative rows style. JavaScript functionality is used to display the graph according to the parameters set.
GridTable Component

The figure above is an example of a typical grid component. This grid is created using `<Table>`, `<TR>`, `<TH>` and `<TD>` tags. The columns can be resized by dragging the mouse across the white divider in the column heading area. The column headings are placed in the `<TH>` tags, and the table footer is placed in the `<TFOOT>` tag. All these tags have CSS applied and the design elements are applied in the CSS classes. The number of columns can be controlled by the use of `<TD>` tags.

FormTable Component

Form table is purely a simple table with rows and columns without any borders. `<Label>` tags are used for labels and CSS is applied for the `<label>` tags to control the text color, size. CSS is also applied to the `<input>` & `<select>` tags to control the width and border color of the text fields and dropdowns.
EventTable Component

Eventable class is used when dropdown/combobox or notes and buttons are coming together as shown in above figure.

Theme
Themes are pre-defined styles that can be applied to alter the appearance of FLEXCUBE Retail application.

A theme is a collection of property settings that allow you to define the look of pages and controls, and then apply the look consistently across an entire FLEXCUBE Retail application.

To change the theme of the application, simply click the link to Theme placed at the top right in the Top frame section.
Select the color of your choice from the drop down
Sea Blue Theme
Black Theme
Red Theme
4.4.2 Cascading Style Sheets

Style Sheets of the FLEXCUBE application are available in the “css” folder. Separate styles sheets are maintained for the Login page and the Transaction pages.

- **Login Page**: default.css

- **Transaction Pages (Contemporary Mode)** –
  - When theme set to RED – following stylesheet used
    - css/THMRED/THMRED.css
    - css/THMRED/jquery-ui.css
  - When theme set to DARK BLUE – following stylesheet used
    - css/THMSEABLUE/THMSEABLUE.css
    - css/THMSEABLUE/jquery-ui.css
  - When theme set to BLACK & WHITE – following stylesheet used
    - css/THMBLACK/THMBLACK.css
    - css/THMBLACK/jquery-ui.css

- **Transaction pages (Classic Mode)**: ECU_eng_01.css

In the Login page the CSS is called in the head section as given below,

```html
<head>
  <link REL="stylesheet" TYPE="text/css" HREF="css/default.css "></link>
</head>
```
SEA BLUE Theme

```
#jquery-ui.css

.headerbody
{background:#0078AE url(../../images/SeaBlue/headerMain_bg.png) top left repeat-x !important;
height:70px;width:100%;}

.ui-tabs-nav, #bar_bottom {background: #57A0C5!important;}

.fg-button
{color:#fff; background:#57A0C5 url('images/SeaBlue/back.gif') repeat-x 50% left !important;}

.show_fav
{background:#A6C9E2 url(images/fg_highlight-hard_100_eeeeee_1x100.png) 0 0 repeat-x !important;
border:1px solid #A6C9E2 !important;}
```
Black Theme

```
.portlet-header.ui-widget-header
{border: 0px solid #A6C9E2; background: #fff url(../../images/SeaBlue/widgetHeaderBg.png) no-repeat !important; color:#004276 !important; font-weight: bold; height:22px; }

.ui-widget-content .ui-icon { background-image: url(images/ui-icons_0078ae_256x240.png);}
```

```html
Black Theme
```

```
.jquery-ui.css

.headerbody
{ background:#ddd url(../../images/Black/headerMain_bg.png) top left repeat-x !important; height:70px; width:100%;}

.ui-tabs-nav, #bar_bottom
{background: #8f8f8f url(../../images/Black/btnbg.png) repeat-x !important;}
```
Similarly for the transaction pages the CSS is called within the head section as below

<head>
  <link REL="stylesheet" TYPE="text/css" HREF="css/ECU_eng_01.css "></link>
</head>

In ECU_eng_01.css we have classes defined that are specific to the transaction pages. For example, the CSS related to table layouts, grids, forms, graphs etc. are all defined in the ECU_eng_01.css.

**Table Curves example**

![Table Curves example](image)

The class .toppanel which is marked in blue defines the top left curve of the table. This class is placed in a div tag as below

```html
<div class="toppanel">
  <ul>
    <li></li>
  </ul>
</div>
```

Ul tag is placed inside this div tag to display the right curve as shown in the figure below. Li Tag is used to display the gradient background.
CSS definition for Left Curve.

```css
.mainbox .toppanel {
    background: transparent url('../images/crvLeft.gif') left top no-repeat;
    height: 4px;
    padding-left: 2px;
    text-align: left;
    overflow: hidden;
}
```

CSS definition for Right Curve

```css
.mainbox .toppanel ul {
    background: transparent url('../images/crvRight.gif') right top no-repeat;
    height: 4px;
    padding: 0px 2px 0px 0px;
    margin: 0;
    list-style: none;
    overflow: hidden;
}
```

CSS definition for middle gradient background.

```css
.mainbox .toppanel li {
    background: transparent url('../images/crvMiddle.gif') left top repeat-X;
    padding: 0;
    margin: 0;
    height: 18px;
}
```

**Grid example**

```
<table>
<thead>
<tr>
<th>Customer ID</th>
<th>Account Number</th>
<th>Description</th>
<th>Currency</th>
<th>Current Balance</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>01031001</td>
<td>AC101010101</td>
<td>AC Description</td>
<td>USD</td>
<td>10000.00</td>
<td>1400.00</td>
</tr>
<tr>
<td>01031022</td>
<td>AC101010122</td>
<td>AC Description</td>
<td>USD</td>
<td>22000.00</td>
<td>1200.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>32000.00</td>
<td></td>
</tr>
</tbody>
</table>
```
```
.gridtable
{
  BORDER: 0px solid #7EB4FF; // No border is applied to the grid
  Background-color:#FFFFFF; // Background is in white color
  border-spacing:2px; // Border spacing is 2px
  margin-top:0px; // margin top is 0
  margin-bottom:0px; // margin bottom is 0
  width:100%; // width is 100%
}
.gridtable caption
{
  background:url('../images/VB_hd_bg11.gif') repeat-x; // background image which is repeate along x-axis.
  text-align:left; // Text aligned left
  font-weight:bold; // Bold text
  font-size: 11px; // Font size is 11px
  height:20px; // Height of the caption is set to 20px;
  margin-top: 0px; // Margin on top is set to zero.
  padding-left:5px; // Padding left is 5px.
  color:#0D4988; // Color of text
}
.gridtable th
{
  background-color: #CFE0F1; // background color is light blue
  font-weight:bold; // text is bold
  color:#0D4988; // text color is dark blue
  padding: 2px; //padding on all four sides is 2px.
  height:18px; // height of the table heading is 18px.
  text-decoration: none; // no text decoration like underline etc
  border: 1px solid #CFE0F1; // border is 1px with color light blue
}
.gridtable td,
{
  font-weight: normal; // if font is bold, it is set to normal
  color:#0D4988; // text color is dark blue
  padding: 2px; //padding on all four sides is 2px.
  height:18px; // height of the table heading is 18px.
  text-decoration: none; // no text decoration like underline etc
  background: #F5F5F5; // background color is light gray
}
.gridtable tfoot td,
{
  background: #D0D0D0; // background color is gray
  color:#0D4988; // text color is dark blue
  font-weight:bold; // text is bold
  text-align:right; // text is aligned right
}
```
Form Example

```css
.formtable {
  BORDER: 0px solid #7EB4FF;  // No border is applied to the grid
  Background-color: #FFFFFF;  // Background is in white color
  border-spacing: 2px;  // Border spacing is 2px
  margin-top: 0px;  // margin top is 0
  margin-bottom: 0px;  // margin bottom is 0
  width: 100%;  // width is 100%
}

.formtable .labeltext {
  font-weight: normal;  // if font is bold, it is set to normal
  text-align: right;  // text is aligned right
  color: #0D4988;  // text color is dark blue
}

Graph Table Example

```

```
Layout Example
We can also control the layout of the html pages using CSS. In ECU_eng_01.css, classes are defined for a horizontal Menu as well as the Vertical Menu.

Horizontal Menu

Vertical Menu

Login details are shown on show/hide panel on clicking on Welcome User

The following CSS code is available in ECU_eng_01.css.

```css
/*------- Vertical Menu ------*/

/*
#menuContainer {position:relative; height:40px; width:960px; overflow:hidden;border:1px solid #aaa;float:left;background:#DDDDDD; overflow:hidden }
*/
```
We can choose between these two types of menu simply by uncommenting the preferred menu while keeping the other commented. For instance, if the Application requires a Vertical menu then the classes related to that menu must be uncommented while keeping the other menu (Horizontal) commented.

4.4.3 Javascript Files

JavaScript is used across the application to create functionalities like, menu dropdowns, calendar popup, form validations, and much more.

JavaScript files are stored in the “jsdir” folder. These files like CSS files are called within the Head tag as given below.

```html
<head>
  <script type="text/JavaScript" language="JavaScript" src="jsdir/common.js"></script>
</head>
```

We have predefined JavaScript files like virtualkeyboard.js, Calendar.js, PopupWindow.js etc. which behave like modules and can be reused when ever required. In order to use these JS files, predefined IDs must be provided for the HTML tags. For example, when we are creating a virtual keyboard, we first need to import the JavaScript file as given below

```html
<head>
  <script type="text/JavaScript" language="JavaScript" src="jsdir/virtualkeyboard.js"></script>
</head>
```

And then Provide the IDs in the HTML tags as below

```html
<div id="login-keyboard" style="position:relative; left:0px; top:0px; width:100%; z-index:3">
  <table cellpadding="0" cellspacing="0">
    <tr>
      ...
    </tr>
  </table>
</div>
```
This will take care of the functionality of a virtual keyboard.

4.4.4 Packaging and Deployment
The web components need to be packaged using standard archiving utility (WAR).

4.5 Structure and Layout
The Oracle FLEXCUBE Direct Banking has an easy-to-understand structure and layout that is user friendly.

4.5.1 Standard Layout
The standard layout of the FLEXCUBE application consists of the top frame, which includes the logo, welcome note etc. The left navigation, which includes the main menu and the sub menu listed respectively. Remaining body of the application is used for the Transaction pages.

1) Top Frame
2) Menu
3) Transaction page

4.5.2 Top Menu Layout
In the Top Menu layout, the menu is displayed horizontally right below the Top Frame area. Left and right arrow buttons are provided to scroll through the menu.
4.5.3 Grouped Menu Layout

Grouped menu layout has the main menu on the top and the sub menu on the left as shown in the figure below.

Please note in higher resolutions, the window will typically be of smaller size than the des

4.6 Browser Support

Oracle FLEXCUBE Direct Banking is compliant with the popular browsers in the industry for internet banking. The user interface for Internet Banking follows standard XHTML 1.0 STRICT guidelines and any web browser and user agent supporting the standard can be used for accessing Oracle FLEXCUBE Direct Banking user interface.

The following browsers are typically used for testing purposes

- Microsoft Internet Explorer 6.0+
- Microsoft Internet Explorer 7.0+
- Mozilla / Firefox 1.0+, 2.0+, 3.0+
- Applet Safari 3.0+
- Google Chrome 1.0+
The above browsers can be supported on Windows, Linux and Macintosh Operating Systems. Microsoft Windows

4.6.1 Screen Resolution
Oracle FLEXCUBE Direct Banking uses 1024 x 768 pixels as the standard resolution setting for

The window is recommended to be opened in a Kiosk mode wherein the resize button of the browser is typically

4.7 Multi Lingual

Multi lingual support can be provide using language specific css files in particular theme folder. These file are available in folder \..\..\css\THM_NAME

For eg – For Arabic language support, following css should be present in \..\..\css\THMSEABLUE

- ara_01.css
- THMSEABLUE_ara.css

Existing CSS files can be copy paste and rename as per the language. New files can be modified as per the bank requirement and language standards.
5 User Interface Guidelines

5.1 Guidelines for Handling of HTML

Oracle FLEXCUBE

- The &39; should be used instead of &apos; for the ‘apostrophe’ character to be handled correctly by the user agents.
- The &168; should be used for ‘space’ for the character to be handled correctly by the user agents.

5.2 Guidelines for Handling of CSS

5.2.1 Introduction

"Style sheets are a mechanism for adding formatting and other typographic information to an HTML document, but in such a way that the HTML markup is largely unaffected."

"HTML is a semantic markup language designed to describe the meaning and structure of a document and not the physical presentation . . . carefully crafted HTML documents can, in principle, be presented by many different technologies, ranging from graphical displays to Braille readers to text-to-speech converters, with little loss of information content."

"Using elements and attributes to specify formatting details is not a good long-term solution because documents become big, cumbersome, and impossible to maintain, largely because HTML is simply the wrong place to specify the page layout descriptions required for detailed layout control."

The style sheet approach is a solution to this problem. A style sheet can be a separate file that is accessed by the LINK element. Or, can use the STYLE element within the FLEXCUBE application page to detail style considerations or can place style information directly in an element.

The following example that specifies all's should appear in red, illustrates a use of the latter strategy:

```html
<STYLE type="text/css">
{color: red ;}
</STYLE>
```

5.2.1.1 What is a cascading style sheet?

A cascading style sheet is a small text file that defines the visual appearance of ALL of the web pages on the FLEXCUBE Retail application. It's a separate file that defines all of the "styles" used on the application pages.

A link to this file is inserted into the <head> tags of the pages where we want to apply the styles. This eliminates the need to define the font attributes, and many other details, on EACH of application pages. Everything is in one place. A change in the style
sheet affects a change on all pages that link to it. It's an awesome way to make fast, global changes to the appearance of the FLEXCUBE Retail application.

5.2.1.2 Why should cascading style sheets be used?
The idea behind cascading style sheets is to separate the appearance, or style, from the structure, thus allowing HTML to do what it was intended to do, which is define structure independent of appearance or browser types.

With a cascading style sheet, we can control not only the font attributes, such as type, face, size, and color, but also the line height, letter and word spacing. One style sheet can be used for all the pages in the FLEXCUBE application, which saves formatting time, reduces document size, and brings a uniform design to the application pages. Because the pages are leaner, download time is decreased creating a faster application.

Probably one of the biggest benefits of using style sheets is a much more uniform look between browser types. Yes, the look of the application pages will be almost identical in Internet Explorer and Netscape as well as the other browsers. This saves a tremendous amount of time formatting the pages so they display correctly in both browsers.

5.2.1.3 How does it work?
Let's take a look at an example definition that we would find in a typical cascading style sheet.

Example one:
A typical <table> or <div> tags text properties might look like this:

```
Table, Span, Div, Select, Input, Textarea, Font, Button, A, Legend, Fieldset{
    font-family: Verdana, Arial, Helvetica, sans-serif;
    font-size: 10px;
    white-space : nowrap;
}
```

This entry defines the font attributes for ALL <table> tags used in the application pages. We will notice it defines the font-family as Verdana, the size to be 10 pixels and the text wrap set to no wrap.

When the browser loads the page, it will use these definitions to set the attributes of the text inside all <table> tags used on the page.

Example two:
A typical td (table cell/row) tag in a style sheet may look like this:

```
table {
    font-family: Verdana;
    font-size: 10pt;
    color: #000000; /* black */
}
/*Odd row*/
```
.AlterRow1 {
    background:#FFFFFF; /* white */
}

/*Even row*/
.AlterRow2 {
    background:#E3E6F1; /* light blue */
}

The first class defines the font type, size, and color for all TD tags of the table on the page. The second and third, classes, defines the background color for all tags that have a "class" of AlterRow1/AlterRow2. "Classes" allow us to define sub-attributes but only for special uses. We don't want all TD tags to have this background color, just those that we specifically identify as using the AlterRow1/AlterRow2 classes.

A TD tag that uses a "class" would look like this on the page:

    <td class="AlterRow1">...</td>
OR

    <td class="AlterRow2">...</td>

When this cell in the table is displayed, it will have a white or light blue background.

5.2.1.4 Linking to the style sheet

It is probably more efficient and convenient to create separate files for FLEXCUBE application Cascading Style Sheets. Using CSS in this way, we can have all light blue on all application pages and change them to yellow/green by just changing the style in one file. To do this, we create a file with the extension .css. We define style "rules" for each HTML element, and use a LINK element within the HEAD element in the format of the following example to access and execute the .css file.

    <head>
        <link REL="stylesheet" TYPE="text/css" HREF="css/default.css"></link>
    </head>

Note that links that specify a cascading style sheet must include:

    type="text/css"

The form of a rule is a list of elements (table, span) or classes (class="welcomeNotePanel") separated by commas and then a sequence of property pairs (color: black;) in braces { }:

    <STYLE type="text/css">
    Table, Span, Div, Select, Input, Textarea, Font, Button, A, Legend, Fieldset{
        font-family:Verdana,Arial,Helvetica,sans-serif;
        font-size:10px;
        white-space : nowrap;
        color: #000000; /* black*/
    }
If a div is marked up as follows in a document with the preceding rules, the "Welcome notes" will be colored red:

```html
<Div class="welcomeNotePanel">Welcome notes</Div>
```

We can also use the DIV and SPAN elements to add styles to blocks or text respectively. For example, the use of gary color background in this document might be marked up as follows:

```html
<style>
.BankLogo{
    background-color:#D5D5D5; /* color: gray */
    width:215px;
    height: 45px;
}
</style>
```

Then, the beginning of the paragraph above would be marked up in this way:

"We can also use the <div class="BankLogo">DIV</div> and <span class="BankLogo">SPAN</span> elements ..."

Interaction of the styles within a style sheet is the source of the term "cascading." Basically, this means that elements within other elements "inherit" the properties of the parent element unless the style sheet indicates the style of the nested element.

If we specify more than one style sheet file, these interactions can become quite complex. Varying browser implementations compound the complexity.

Simply put, with style sheets there is no need to define these properties for EACH page and each paragraph. The style sheet does this for the application when the page is displayed in the browser. We have also found that using style sheets helps to make the pages display more consistently in both Netscape and IE browsers.

### 5.2.1.5 How to Define A CSS Class Style - The Class Selector

There will be times when the built-in CSS styles are not exactly what we need. When this happens, we can create own CSS rule with the class command. This CSS rule will be independent of any one HTML tag which allows us to use it on any HTML tag. In fact it can be applied to multiple HTML tags on a web page which makes it very versatile. We can see how this might be useful for streamlining the code.

The first step in creating a CSS class is to give it a unique name. Unlike the HTML selector which is derived from a part of an HTML tag, we can give the class command any name we want. We can use any letter or number combination to create this unique name. Then, as usual, this unique class name is followed by the CSS definitions. Let's take a look at an example of a CSS style that we have created to control the copyright text on the FLEXCUBE application page.
As we can see from the example above, the CSS class begins with the unique name (copyright) and before the class name there is a period. To the right of the name are the definition(s) enclosed within curly brackets and each definition is separated by a semicolon.

We can place this CSS class inside the <style> tags in the head section of the application page or in an external CSS file. It will work throughout the entire web page. When we want to apply this CSS class to any HTML tag, we will use the class attribute within the HTML tag. The value for the class attribute is the unique name given to the application CSS class. (class="copyrights") In the example below I have applied it to the <td> tag. Notice that I have not included the period before the class name.

```
<td class="copyrights">Text goes here</td>
```

### 5.2.1.6 Rules

#### 5.2.1.6.1 Selectors

Any HTML element is a possible CSS1 selector. The **selector** is simply the element that is linked to a particular style. For example, the selector in

```
TD { text-indent: 3em }
```

is **TD**.

#### 5.2.1.6.2 Class Selectors

A simple selector can have different **classes**, thus allowing the same element to have different styles. For example, we may wish to display code in a different color depending on its language:

```
code.html { color: #191970 } /* Dark Blue */
code.css   { color: #995E00 } /* Brown */
```

The above example has created two classes, **css** and **html** for use with HTML's **CODE** element. The **CLASS** attribute is used in HTML to indicate the class of an element, *e.g.,*

```
<td CLASS= error>Only one class is allowed per selector.
```

For example, code.html.proprietary is invalid.</td>

Classes may also be declared without an associated element:

```
.error{ background:#FF0000 !important; } /* red */
```

In this case, the **error** class may be used with any element.
A good practice is to name classes according to their function rather than their appearance. The error class in the above example could have been background color #FF0000, but this color would become meaningless if we decided to change the style of the class from background color to border properties. For example

```
.error{ border:1px solid #FF0000; } /* red */
```

So that it no longer had a background color.

### 5.2.1.6.3 ID Selectors

**ID selectors** are individually assigned for the purpose of defining on a per-element basis. This selector type should only be used sparingly due to its inherent limitations. An ID selector is assigned by using the indicator "#" to precede a name. For example, an ID selector could be assigned as such:

Style defined to the element using class name

```
.titleBulletStyle
{
    width: 12px; height:18px; display: inline;
    background-image:url('../images/titleBullet.gif');
    background-repeat:no-repeat;
}
```

Style defined to the element using ID selector

```
#titleBullet
{
    width: 12px; height:18px; display: inline;
    background-image:url('../images/titleBullet.gif');
    background-repeat:no-repeat;
}
```

This would be referenced in HTML by the ID attribute instead of using class attribute:

```
<span dropTarget="false" enabled="true" draggable="false" borderStyle="none" displayed="false" isDataProviderPathAbsolute="true" id="titleBullet" overflow="visible"/>
```

### 5.2.1.6.4 Contextual Selectors

**Contextual selectors** are merely strings of two or more simple selectors separated by white space. These selectors can be assigned normal properties and, due to the rules of cascading order, they will take precedence over simple selectors. For example, the contextual selector in

```
P EM { background: yellow }
```

is **P EM**. This rule says that emphasized text within a paragraph should have a yellow background; emphasized text in a heading would be unaffected.
5.2.1.7 Declarations

5.2.1.7.1 Properties

A property is assigned to a selector in order to manipulate its style. Examples of properties include color, margin, and font.

5.2.1.7.2 Values

The declaration value is an assignment that a property receives. For example, the property color could receive the value red or #DC3E21.

5.2.1.7.3 Grouping

In order to decrease repetitious statements within style sheets, grouping of selectors and declarations is allowed. For example, all of the anchor link in a document could be given identical declarations through a grouping:

```
A:link, A:visited, A:active
{
  font-size:10px; font-weight:bold; text-decoration: none; color: #DC3E21;
}
```

5.2.1.7.4 Inheritance

Virtually all selectors which are nested within selectors will inherit the property values assigned to the outer selector unless otherwise modified. For example, a color defined for the BODY will also be applied to text in a paragraph.

There are some cases where the inner selector does not inherit the surrounding selector’s values, but these should stand out logically. For example, the margin-top property is not inherited; intuitively, a paragraph would not have the same top margin as the document body.

5.2.2 Default CSS

Default CSS is the style sheet that is used mainly for the Login page. The classes that have been defined in this style sheet are used in login page only. These classes are not applied for transaction pages. You can find default.css in the “css” folder for further knowledge.

5.2.3 Customized CSS

Customized style sheets are used for transactions pages. If the application is available in different languages, then separate customized style sheets are maintained for each language. Separate style sheets are also maintained for FLEXCUBE Retail application or FLEXCUBE Admin application. For example:

- INA_eng_11.css
- AD1_eng_11.css
- HDU_eng_01.css

These style sheets are available in the “css” folder.

5.2.4 Theme based CSS

Theme based CSS are those style sheets that are applied when a user selects a theme. These style sheets have classes defined based on a particular theme. All class names and properties maintained are same but the attributes are changed.
5.3 Functionality based CSS

5.3.1 Click to Call
Above mentioned images are for **Click to Call**.

Styles of background colors and positions are mentioned in gui\cmn\common.xsl.

**Css style attributes for click to call** –

```
.help_navdiv {
    position: absolute; /* defines positions*/
    bottom:0; /* defines bottom positions*/
    right:0; /* defines right positions*/
    width: 300px;
    margin: 7px 7px 0;
    padding: 0;
    border:8px solid #666;
    border-bottom:0px;
    -moz-border-radius:10px; /* creates top rounded corners */
    -moz-border-radius-bottomleft:0;
    -moz-border-radius-bottomright:0;
    -webkit-border-radius:10px;-webkit-border-bottom-left-radius:0;
    -webkit-border-bottom-right-radius:0;
    border-radius:10px;
    border-bottom-left-radius:0;
    border-bottom-right-radius:0;
    font-size:14px;
    font-weight:bold;
    color:#fff;
    z-index:100;
}
```
6 User Interface Branding Process

Oracle FLEXCUBE Direct Banking is provided with default theme for logged in user for particular user segment.

The default theme can be configured using [Entity ID].xml file which is present at location ..\system\home.

Following property will decide default theme for logged in user of particular segment.

```
<CONTENT.GENERATOR ID="HTML" CLASS.NAME="com.iflex.fcat.gui.content.HTMLContentGenerator">
  <ATTRIBUTE NAME="XSL.ENCODING" VALUE="UTF-8"/>
  <ATTRIBUTE NAME="CONTENT.TYPE" VALUE="text/html;charset=UTF-8"></ATTRIBUTE>
  <ATTRIBUTE NAME="XSL.OUTPUT.PROPERTIES.method" VALUE="html"></ATTRIBUTE>
  <ATTRIBUTE NAME="DEF.THM.ECU" VALUE="THMSEABLUE"></ATTRIBUTE>
  <ATTRIBUTE NAME="DEF.THM.EN1" VALUE="THMSEABLUE"></ATTRIBUTE>
  <ATTRIBUTE NAME="DEF.THM.ENV" VALUE="THMSEABLUE"></ATTRIBUTE>
  <ATTRIBUTE NAME="USRAGNT.STYLE.ipad" VALUE="ipad/THMSEABLUE"></ATTRIBUTE>
  <ATTRIBUTE NAME="HTTP.RESPONSE.HEADER.X-Frame-Options" VALUE="sameorigin"></ATTRIBUTE>
</CONTENT.GENERATOR>
```

Guidelines

If bank want to change logo (Oracle) from above figure, changes can made in image - logoMain.png which is available in images\SeaBlue (Theme name) folder.

Class headerbody is given for repeated background image of 1px width. Bank can change headerbody background with specific hex or RGB color code.

Bank can change icon like folder and txn bullet as per their choices. Changes can be made in images/menuicons/folder.gif and images/menuicons/txn_bullet.png.
Above mentioned icons can change as per bank’s choice.

- Icon (menu_icon.gif) is available in images folder.
- Icon (user.png) is available in images folder.
- Transaction icons are available in images/menuicons folder.
7 Multi Lingual Translation Process

Multi lingual support can be provide using language specific css files in particular theme folder. These file are available in folder \\css\THM_NAME

For eg – For Arabic language support, following css should be present in \\css\THMSEABLUE

- ara_01.css

Existing CSS files can be copy paste and rename as per the language. New files can be modified as per the bank requirement and language standards.

For example, in Arabic language transaction headings, labels and data starts from right to left. In this case float will be change from left to right and direction will be change from ltr to rtl. These changes can be made in ara_01.css
8 Performance Optimizations

This section describes the user interface performance optimizations techniques adopted in the product. These techniques are used to reduce the response time of User’s Dashboard. The implementation team should make use of these techniques while customizing the product. This section only provides introduction to these techniques. For more details on the performance optimization of presentation tier, please refer to the document Oracle_FLEXCUBE_Direct_Banking_UI_Content_Delivery_Optimization_Guide.

8.1 Minimizing number of network calls

Response time for any web page is a function of the number of network calls required to fully load the page. Browser makes different network calls for following components linked in any webpage

- Images
- External cascaded style sheets (CSS)
- External Java script code

Each network call means following overheads

- TCP session establishment
- HTTP headers’ overhead
- Network latency to fulfill the request

Although browsers try and reduce above overheads by caching some of the static contents, it is always recommended practice to minimize the number of possible network calls from any web page. Following techniques have been used to reduce the number of network calls made to load the dashboard.

8.1.1 Data URI

- Data URI is a W3C standard in which the Base64 encoded data representing a static content is placed within the calling page itself
- The URI is like any other resource identifier except that the data content is not linked externally, but it is placed as part the URI itself
- This approach helps in reducing the network calls, as browser does not need to make HTTP calls to load the resource
- Data URI is supported on most of the modern browsers. However please note that IE 7 and older IE browsers do not support Data URI. Hence special coding is required to handle this. Below is an example of the change.

/* Before Change */
.headerbarlogo {background: url('../../images/Black/logoMain.png');}

/* After change */
.headerbarlogo
{
background-image:
url(data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAANIAAABGCAYAAAC5bsoXAAAACXBIWXM
AACjAAAu...);}

8.1.2 Combining Java script files
The screens like Dashboard use multiple Java script files. The browser needs to make separate
network calls to fetch these files. Instead, it is advised to combine such files into a single file and
refer this single Java script file from the XSL.

8.2 Minimizing payload
Following techniques are adopted to reduce the data transferred over network for loading any
screen

8.2.1 JS/CSS minification
The application now uses minified Java script and CSS files. The minification process is
transparent to developer and is taken care at the time of building the WAR package.

8.2.2 Data compression using GZIP
The application provides request/response filter to compress the data using GZIP compression.
Appendix A: Check list for Usability and User Interface Guidelines

The following checklist can be used by Banks and Financial Institutions

1. Is the target set of browsers for the Financial Institution identified along with the Operating System requirements?
   a. This would determine additional testing and infrastructure requirements for testing. The financial institution should ensure that the infrastructure is available for testing the

2. Is the screen resolution of 1024 * 768 pixels or a different screen resolution is required?
3. Is the Cascading Stylesheet (CSS) to be provided by the financial institution?
4. Is the list of browsers
10 Tools and References

The following tools can be used to validate and verify the user interface components or features for the Oracle FLEXCUBE Direct Banking user interface.

<table>
<thead>
<tr>
<th>Tools</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3C CSS Validation Service</td>
<td><a href="http://jigsaw.w3.org/css-validator/">http://jigsaw.w3.org/css-validator/</a></td>
</tr>
<tr>
<td>W3C Markup Validation Service</td>
<td><a href="http://validator.w3.org/">http://validator.w3.org/</a></td>
</tr>
<tr>
<td>W3C Accessibility Tools</td>
<td><a href="http://www.w3.org/WAI/ER/tools/complete">http://www.w3.org/WAI/ER/tools/complete</a></td>
</tr>
<tr>
<td>aDesigner</td>
<td>aDesigner is a disability simulator that helps designers ensure that their content and applications are accessible and usable by the visually impaired. This can be a useful tool for verification <a href="http://www.eclipse.org/actf/downloads/tools/aDesigner/index.php">http://www.eclipse.org/actf/downloads/tools/aDesigner/index.php</a></td>
</tr>
</tbody>
</table>

The following documentation has been referred for this guide.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>XHTML 1.0 Reference</td>
<td><a href="http://www.w3.org/TR/xhtml1/">http://www.w3.org/TR/xhtml1/</a></td>
</tr>
<tr>
<td>XHTML 1.1</td>
<td></td>
</tr>
<tr>
<td>XSLT 1.0 Reference</td>
<td></td>
</tr>
<tr>
<td>XSLT 2.0 Reference</td>
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