

SAP Style Guide for Blue-

Collar Worker PDAs

[Print Version \(PDF\)](#)

Introduction

1. Devices

- [Technical Requirements](#)
- [Pocket PC](#)

2. Interaction

- [Navigation](#)
- [User Input](#)
- [Content](#)
- [Messages](#)

3. Layout and User Interface Elements

- [Page](#)
- [Header](#)
- [Footer](#)
- [Input Fields](#)
- [List boxes](#)
- [Pick Lists](#)
- [Buttons](#)
- [Other Controls](#)

4. Styles

- [Colors](#)
- [Fonts](#)



Introduction

[Overview](#) | [Restrictions](#) | [Status](#) | [Acknowledgements](#)

Overview

The purpose of this document is to provide design guidelines for the development of applications for PDAs and similar industrial devices, targeting "blue-collar" workers and based on a native java implementation.

These guidelines are based on the need to provide a simple, clear, consistent, and intuitive user interface, supporting both touch screen and physical "hard" keyboards with a limited number of keys. Additionally, some users will use fingers or thumbs instead of a pointing device or stylus. Therefore, screens have to be designed with sufficiently large and properly spaced controls.

The guidelines are based on the assumptions that handhelds may be used:

- In different types of lighting conditions, and can be "washed out" in the sunlight
- In noisy environments
- "On-the-go", while conducting physical activities, where users may be easily distracted
- In dirty, wet, and cold environments

Restrictions

SAP mobile applications do not differentiate between left-handed and right-handed users, and do not support blind and visually impaired people.

Status

Version 1.0

02/10/03

Once reviewed by development communities, this design document will be tested in a pilot project, and later released as a standard document by the MBS Product Standard Steering Committee.

Acknowledgements

This style guide project is managed by Ralph Heidl from the BU MBS Development Architecture.

This document is based on version 1.0, authored by of Torsten Raak (SAP AG) and James Maguire (SAP America) from GCDS-EMEA Solution Exec., reviews by Joëlle Carignan and Ben Tomsy from the User Experience Group (SAP Labs), and by Clare Johnson and Udo Arend from the Usability Engineering Center (SAP AG).



Source: [SAP Style Guide for Blue-Collar Worker PDAs](#)

Devices

Technical Requirements | Pocket PC

The target devices for mobile SAP applications are primarily PDAs (Personal Digital Assistants) and industrial, ruggedized devices which are—at least with regard to the screen size—similar to PDAs.

Mobile applications provided by SAP are developed with Java. Because the most recent release of the java virtual machine used by SAP only supports the "Personal Java Edition 1.1.8," classes from more recent java development kits should not be used. The general goal for the future is to be J2ME (Java 2 Micro Edition) compliant.

Technical Requirements

Minimum

In general, the user interface of mobile applications has to be designed in a manner that allows it to be run on every device with the following properties:

- Minimum 32 megabytes of RAM
- Physical keyboard with at least 16 keys
- Scroll keys or imbedded mouse device
- Screen size of 240 x 320 pixels



Figure 1: Pocket PC keyboard

Recommended

We recommend the usage of devices with:

- Fewer, but larger, keys
- Colored displays
- Background lighting
- Integrated backup batteries (to avoid losing stored data)
- For mission critical devices, secondary memory backup (such as removable flash card or secure optical card) to facilitate data restoration

Pocket PC

On a Pocket PC, the maximum available screen space for an application is a width of 240 pixels and a height of 265 pixels.

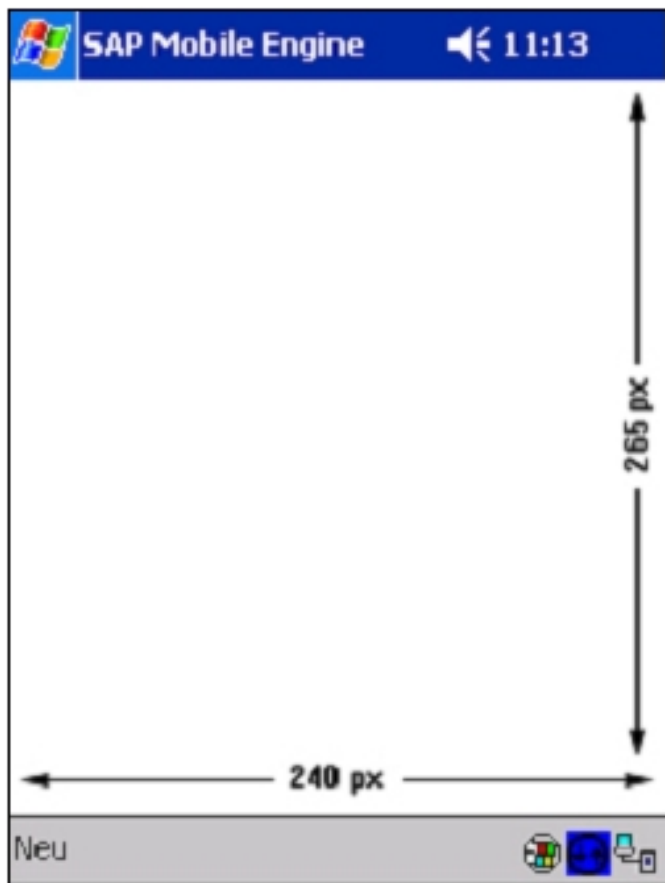


Figure 2: Pocket PC

Optional

- The OS title bar can be used to label the application, but this space can display only 25 characters at a time.
- The Start button can be disabled by editing the registry, which has the added advantage that users won't misuse other applications on the device.

Prohibited

- Hiding the bottom taskbar is not allowed because the virtual keyboard can only be launched from there.



[top](#)

Source: [SAP Style Guide for Blue-Collar Worker PDAs](#)

Interaction

[Navigation](#) | [User Input](#) | [Content](#) | [Messages](#)

Navigation

- Provide contextual information to ensure users will not get lost while navigating through the screens.
- Provide a *Back* option to allow users to go back to the previous menu used and to the last application menu they visited.
- Provide a *Cancel* option to allow users to cancel the operation they are in (except in some special cases due to underlying business rules).

User Input

- Set a default focus on each screen.
- The touch screen and keyboard should be used consistently.
- Minimize text entry.

Content

- Provide clear and concise content. Avoid redundancies.
- Do not clutter the screen, but do provide as much relevant information as possible to reduce paging.
- Use a vocabulary referring to users tasks and expectations, instead of user interface elements. For example, refer to the "Start" page or the "Home" page, instead of "Main Menu".
- Provide links to appropriate content to complete a task without searching.
- Due to performance and space issues, images should be avoided, except for logos.

Messages

Popups

- Avoid interrupting users' workflow with popups.
- You may use pop-ups for confirmation of important changes before exiting the application, and for severe errors like aborts that need direct user intervention.
- For serious warnings, use the "LitePopup" introduced in the UMC, which is comparable to a java popup, but has several advantages on mobile devices.
- Before using a confirmation popup for leaving a screen, consider alternative solutions, such as restoring data and providing an undo function.

Success Messages

- Inform users that an action has been successfully completed if they cannot immediately see the effect of the action, or if it is part of a critical business function.
- When appropriate, locate success messages on the [footer](#).

Error Messages

- An application should be programmed so that error messages do not occur. Therefore, consider preventing errors so that your application does not need error messages at all.
- When appropriate, locate error messages on the [footer](#).



[top](#)

Source: [SAP Style Guide for Blue-Collar Worker PDAs](#)

Layout and User Interface Elements

[Page](#) | [Header](#) | [Footer](#) | [Input Fields](#) | [List Boxes](#) | [Pick Lists](#) | [Buttons](#) | [Other controls](#)

Page

Required

- Maximum: 240x265 pix., including application header and footer
- Background color: White

Recommended

- Keep the layout as simple as possible to avoid problems associated with supporting different types of devices.

Prohibited

- Displaying a company logo on pages other than the Start page is not allowed. This is customizable within the UMC (UI Modification Concept).
- The use of multiple windows (awt.Frame) on the display is not allowed, because when a screen is placed in the background, users will not be able bring it back to the front.

Header

An application header can be used for the application title if the OS title bar is already busy.

Required

- Header text: White, 13, bold
- Header background: Black
- Capitalize the first letter of each word

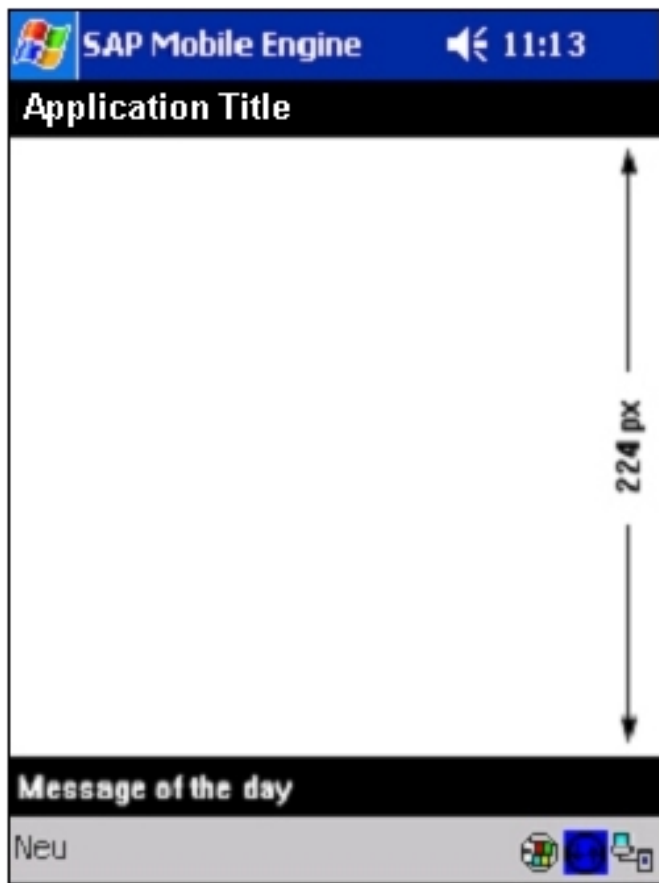


Figure 1: Header and Footer

Recommended

- Try to use the OS Title bar if possible for the application title. Use the application header only if an additional label is required.
- Avoid using the header for information related to the user interface, such as "Menu" or "Detail Information".

Footer

The footer is primarily used to indicate status messages. When not used for the footer, the area can display additional options, as shown in Figure 2.

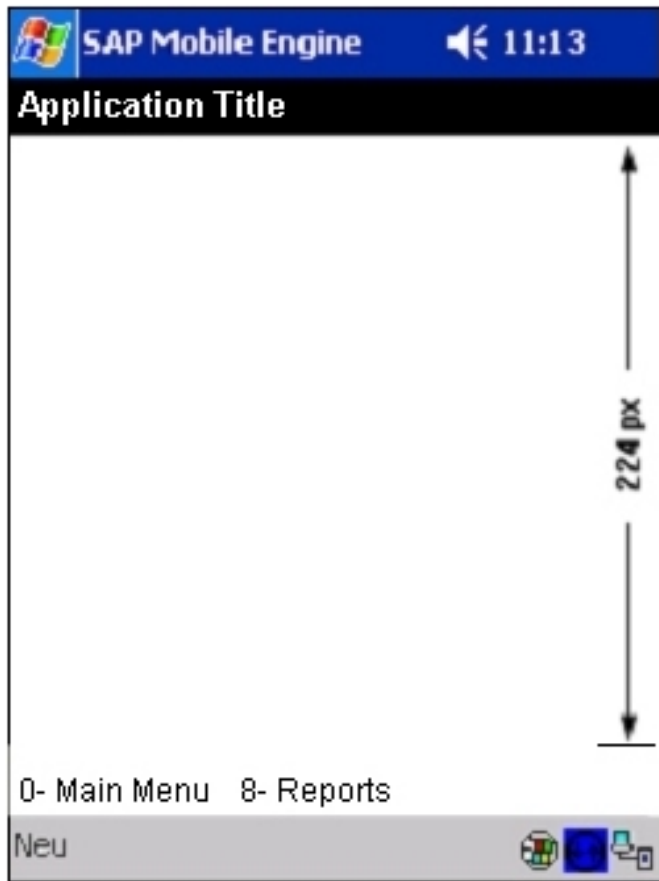


Figure 2: Using the footer area for additional options.

Success Messages

- Background color: Green #AACDA1
- Prefix: "Success:"

Error Messages

- Background color: Red #F66767
- Text color: White
- Font: Bold
- Prefix: "Error:"
- Audible "beep" sound

Input Fields

A standard input field appears as a rectangle with a thin gray inset border and a white background. Once an input field gets the focus (becomes active) the background color will change to black and the text will appear in white.

Left Qty	*	<input type="text" value="0.0"/>	CAS
		<input type="text" value="0.0"/>	BTL
Returned Qty		<input type="text" value="15.0"/>	CAS
		<input type="text" value="0.0"/>	BTL

Figure 3: Example of Input fields

Required

- Place input fields and their associated labels on the same row.
- Align input field labels to the left.
- Provide a wildcard.
- For mandatory input fields, the field should be marked with an asterisk, aligned one space prior to the input field, as shown in Figure 3.

Recommended

- Only use text entry fields if it is not possible to prompt or supply answers with different means.

Prohibited

- Do not use a colon in edit fields labels.

List Boxes

In a list box, the position of a selected item is displayed in a list counter ("n of N").

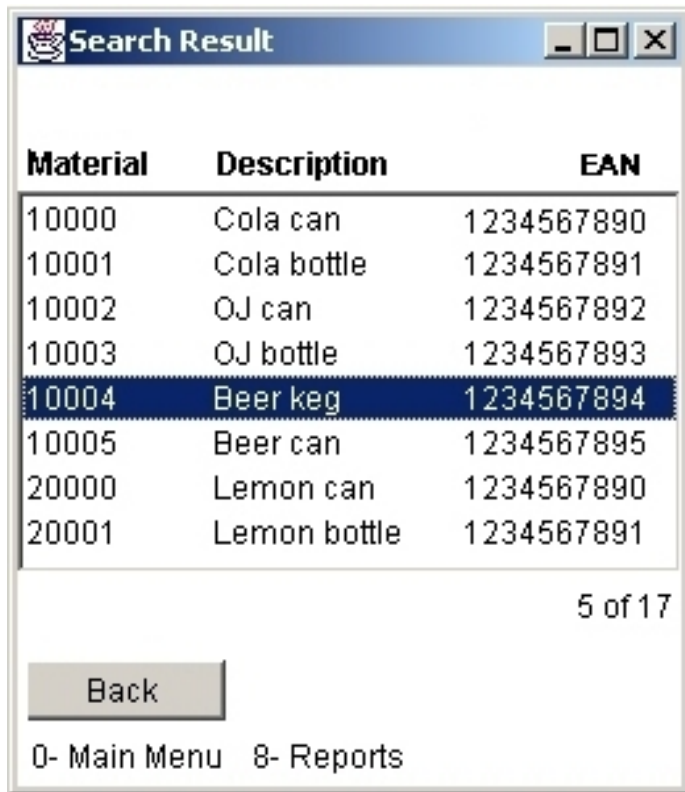


Figure 4: Example of a list box

Required

- Colors:
 - Background: white
 - Text: black or for color displays, reverse of the standard system font
 - Selected items: text color changes to white and background changes to black
- Column title:
 - Provide a title for each column.
 - Font: Bold
- Set a default item
- Align the list counter to the right

Recommended

If there are not enough space display additional columns, the additional information should be displayed on the calling screen (for example, the detail page of an item).

Pick Lists

A pick list utilizes two text fields instead of a list box: a two-character text input field to the left of a longer text output (or disabled input) field, aligned horizontally. The left text field displays the two-character code for the selected item from the invisible list. The second box displays the value of the item. The user selects an item from the list by entering the two-character code in the left input field. This control supports an alternative navigation method in which a user sets the focus to the right text field and uses the right and left arrow keys to scroll through items.



Figure 5: Example of a Pick List

Recommended

- Use the pick list in situations where there is a small list of options whose entry values can be remembered by the user.

Buttons

Event handlers should be device independent, allowing users to activate buttons by using the touch screen or a physical keyboard (or other supported devices). The workflow (the result of pressing a button or invoking the corresponding action by a physical key) is customizable within the modification concept. Buttons styles are set to the system default.

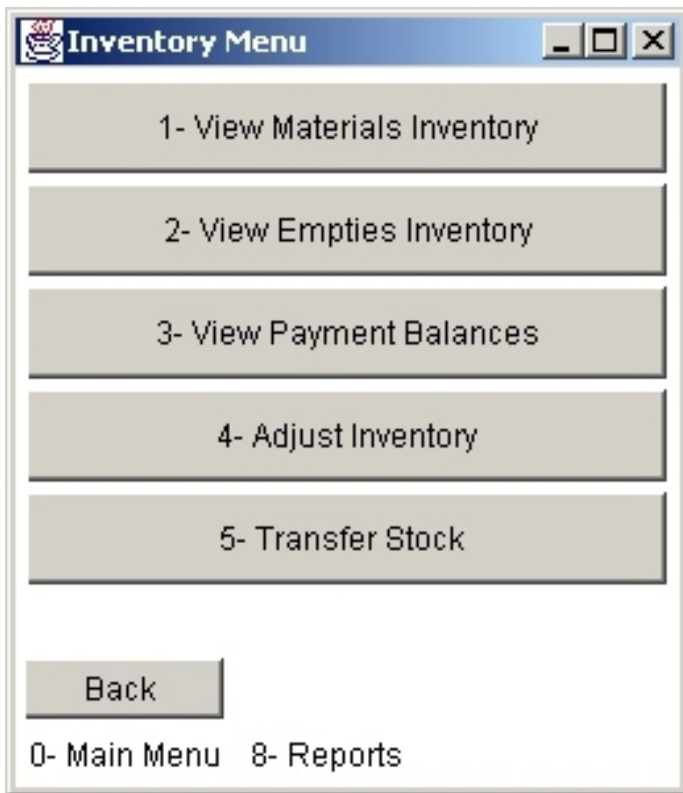


Figure 6: Buttons with reference to a hard key

Required

- Background color: Gray
- Label: Black
- Size:
 - Height: Use consistent height throughout the application.
 - Width: equal to or greater than 70 pix

- Minimum space between buttons: 15 pix
- Label:
 - Provide a number or a letter, which references a physical key on the device.
 - Label buttons clearly so that users easily understand what action will be invoked.
 - Label buttons with **only one action** or destination so that the interface is very simple. For example, use only "Back" instead of "Back - Main Menu" and use "Back" instead of "Back-Search Again".
 - Avoid redundancies. For example, use "Search" instead of "Search-Show Results".
- Consistently assign functionality to hard keys. For example, assign "OK" to the Enter key and "Cancel" to the Escape key. If the default action can be more specific than OK, use a more specific label, keep the same location and association with the Enter key. For example, use Find instead of OK and associate this key to the Enter hard key. Computer users expect the default action to be associated with the Enter key.
- The Back button should be aligned to the left of the screen, and the Next button or its equivalent (OK, Search, etc.) should be right aligned on the same row.

The screenshot shows a dialog box titled "Check-In Update". It contains the following fields and controls:

- Material: 20001
- Material Desc.: Lemon bottle
- Left Qty: 0.0 (highlighted in black) CAS
- Left Qty: 0.0 BTL
- Returned Qty: 15.0 CAS
- Returned Qty: 0.0 BTL
- Quantity Change Reason: 01 Mis-counted
- Buttons: Back (left-aligned) and OK (right-aligned)

Figure 7: Back and OK buttons

Recommended

- Place the most frequently accessed controls near the bottom of the page. Horizontally, you should arrange buttons so that the most important is on the left.
- Use consistent placement (do not move buttons from one screen to the next).
- Provide only the buttons that are useful to complete the task at hand. Don't try to fit too many buttons, either in a single row or too many rows.

Other Controls

Checkboxes, selection lists (combo boxes) and radio buttons should not be used due to accessibility issues.

Styles

[Colors](#) | [Fonts](#)

Colors

Required

- Page:
 - Background color: White
- Header:
 - Background color: Black
- Footer:
 - Background color: Gray, except for status messages
- Avoid color-coding as a single means of providing information.
- Use an asterisk along with red for mandatory input fields labels.
- Use labels along with colors in status messages (for example, "Success:" along with Green).

Recommended

- Limit the number of colors used on a screen

Fonts

Element	Face	Font	Color	Background	Example
Header	Dialog	13 bold*	White	Black	Page Header
List headers	Dialog	12 bold	Black	White	List Headers
Normal text	Dialog	12 regular	Black	White	Normal text
Highlighted text	Dialog	12 bold	White	Black or OS default	Highlighted text
Button	Dialog	12 regular	Black	Gray	Button
Standard footer	Dialog	12 regular	Black	Light Gray	Footer
Success messages	Dialog	12 bold	Black	Green #AACDA1	Success
Error messages	Dialog	12 bold	White	Red #F66767	Error

* Use a font size of 12 if developing for the Palm OS, because it does not support 13.

Recommended

- Bold can be used to highlight important information, but should be limited to 20% of the content.



[top](#)