S A P

For Beginners

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Points to Discuss (12)

1) What is SAP
2) What is ERP
3) History of SAP
4) What makes SAP different
5) SAP Modules
6) SAP R/3 Architecture

Continue @ Next Slide……

Points to Discuss (12)

7) Success of SAP R/3
8) SAP uses ABAP
9) Benefits of SAP
10) ERP and SAP Market share
11) SAP Training and Certification
12) Demo of a SAP program

1 SAP - Introduction

- **SAP is the leading Enterprise Information and Management Package.**
- There is n number of ***ERP*** softwares in market today, of which **SAP** is used in **medium** to **large enterprises.**

1 SAP - Introduction

- **SAP** is a **neatly integrated *business software*** to **process all functionalities of an organisation** in order to obtain a **UNIFIED solution**, **ERP** software.
- **SAP** is **a leader** when it comes to **easy integration** among all the departments.

2 ERP ? SAP - Introduction

ERP term used for software that controls whole organizations different departments.

For example_

SAP, **Oracle**, **People soft, JD Edwards** are some of the top ERP software systems.

2 ERP ? SAP - Introduction

Consider a **large enterprise** like **PepsiCo**, which has number of ***divisions*** under it.

There is a _

- **Financial Department**,
- **Logistics Section**,
- **HR**, **Warehousing**,
- **Sales and Distribution** **etc.**

2 ERP ? SAP - Introduction

All these need to be **integrated** together, for ***effective functioning***.

This is done by a **specific software** known as ***Enterprise Resource Planning*** or **ERP** .

Use of this package makes it possible to **track** and **manage**, in **real-time**, **sales**, **production**, **finance accounting** and **human resources** in an enterprise

3 History of SAP

SAP the company was founded in **Waldorf**, **Germany** in **town of Heidelberg** in **1972** by ***five*** **ex-IBM engineers.**

The full name of the parent company is **SAP AG**.

SAP has subsidiaries in over **50 countries** around the world from ***Argentina to Venezuela***.

3 History of SAP

SAP stands for **System, Andwen dungen, Produkte in der Datenverarbeitung** which – translated to English – means **Systems**, **Applications**, **Products** in **Data Processing**.

3 History of SAP

- The **first releases** were **R1** and **R2** which were **mainframe** only applications.
- **SAP** started as **R/2** that is ***Real time architecture*** with **2 servers**
- In **1979** SAP released **SAP R/2** into the German. The first integrated, enterprise wide package and was an immediate success.

3 History of SAP

- This got changed in later years as **R/3** that is ***Real time architecture*** with **3 servers**.
- Towards the end of the **80′s, client-server architecture** became popular and **SAP** responded with the release of **SAP R/3** (in **1992**).

3 History of SAP

- The **SAP R/3** enterprise application suite for **open client/server systems** has established a new standards for providing business information management solutions.
- The "**R**" was for "***Realtime data processing***"

3 History of SAP

- **Each functional division** within an organization is **divided into modules**.
- **SAP** started with **financial application**.
- Modules such as **Logistics**, **HR** were added later on.

4 What makes SAP different?

- **Traditional** computer **information systems** used by many businesses today have been developed to **accomplish some specific tasks** and provide **reports** and **analysis** of events that have already taken place.

4 What makes SAP different?

Examples are ***accounting general ledger systems***.

- Occasionally, some systems operate in a "**real-time**" mode that is, have up to date information in them and can be used to actually control events.

4 What makes SAP different?

- A **typical company** has many **separate systems to manage different processes** like **production**, **sales** and **accounting**.
- **Each of these systems** has its **own databases** and rarely **passes information** to **other systems** in a timely manner.

4 What makes SAP different?

- SAP takes a **different approach**.
- There is **only one information system** in an enterprise, SAP.
- All applications **access common data**. Real **events** in the **business** initiate **transactions**.
- ***Accounting*** is done **automatically** by events in ***sales*** and ***productio***

4 What makes SAP different?

- **Sales** can see when products can be delivered.
- **Production** schedules are driven by sales.
- The whole system is designed to be ***real-time*** and ***not historical***.

5 SAP Application Modules

SAP has several layers.

- The Basis System is the heart of the **data operations** and should be not evident to **higher level** or **managerial users**.
- Other **customizing** and implementation tools exist also.

5 SAP Application Modules

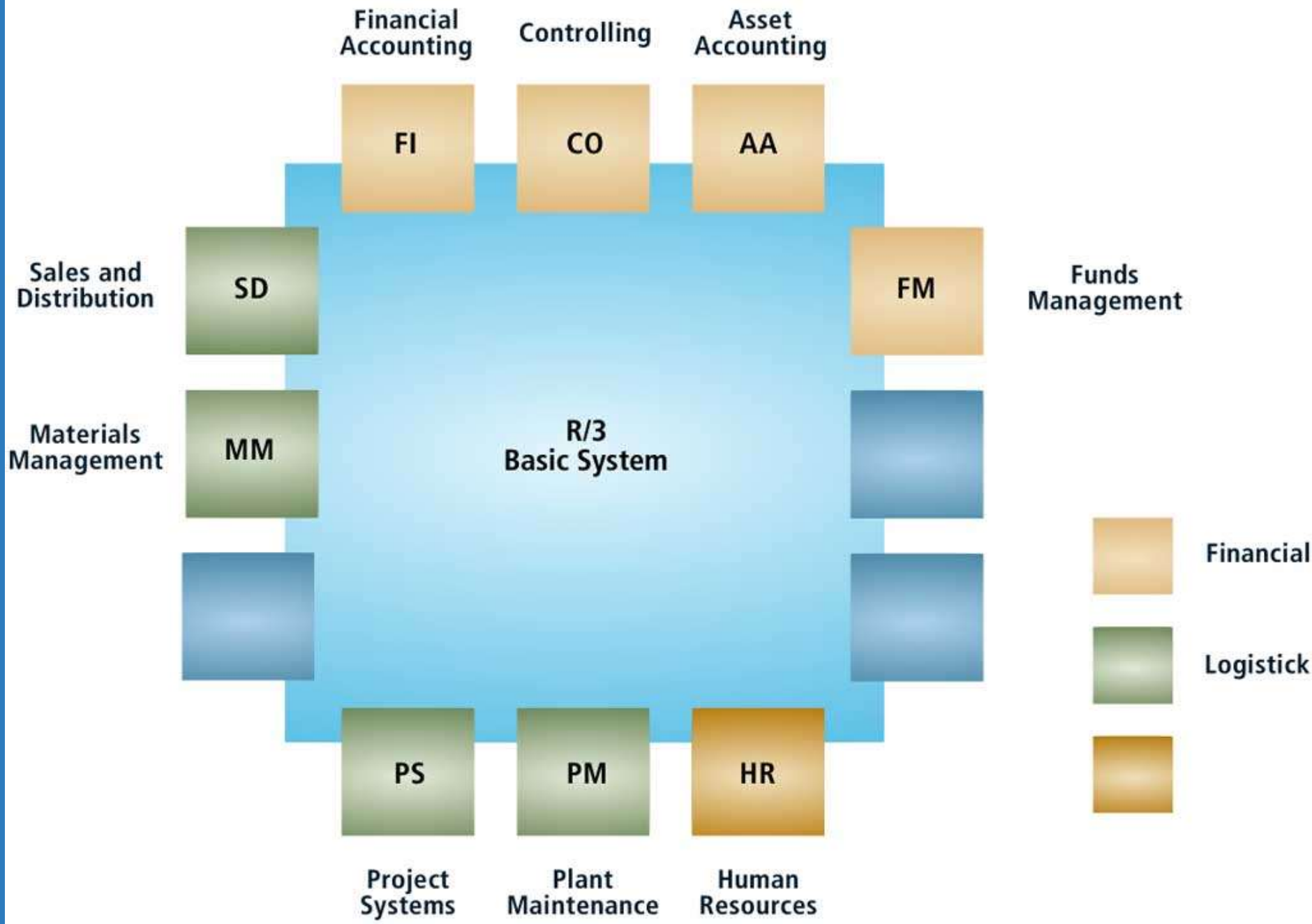
- The heart of the system ***from a manager's viewpoint*** are the **application modules**.
- These **modules may not all** be implemented in a typical company but they are all related and are listed below:

5

SAP Application Modules

1. Financial Accounting
2. Financial Supply Chain Management.
3. Controlling.
4. Material Management.
5. Sales and Distribution.
6. Logistic Execution.
7. Production Planning.
8. Quality Management.
9. Plant Maintenance.
10. Project system.

SAP Modules


Financial Accounting
Controlling
Asset Accounting
FI
CO
AA
Sales and Distribution
SD
FM
Funds Management
Materials Management
MM
R/3 Basic System
PS
PM
HR
Project Systems
Plant Maintenance
Human Resources
Financial
Logistick

5 SAP Application Modules

The most important module in SAP

1) **Financial Controlling (FICO)**
2) **Sales & Distribution (SD)**
3) **Material Management (MM)**
4) **Production Planning (PP)**

SAP Application Modules

5

1)Financial Controlling (FICO)

SAP **FI (Finance)** : Finance module consider to be the ***base module***.

It ***covers vital areas*** such as

- ✓ **General Ledger (GL),**
- ✓ **Account payable (AP),**
- ✓ **Account Receivable (AR)** and
- ✓ **Asset Accounting (AA)**.

King of SAP modules

SAP Application Modules

5

1)Financial Controlling (FICO)

Controlling (CO): Controlling is kind of *sister module* for **FI**.

Use for ***internal controlling*** and ***internal reporting***.

- ✓ **Cost Center Accounting (CCA),**
- ✓ **Profit center accounting (PCA),**
- ✓ **Product costing (PC),**
- ✓ **Profitability Analysis (COPA)** and
- ✓ **Internal Order (IO).**

5

2) Sales & Distribution (SD)

- SD is **predominantly controls** sales and it is also **heavily tied up** with **MM**.
- It **controls customer master data**, ***sales***, ***plants***, ***sales organizations*** and ***sales conditions***.

5

3) Human Resource (HR)

- **HR** modules handles ***all human resource activities*** such as ***resource hiring***, **salary**, **employee benefits** etc.
- It is **highly integrated** with **FI** and **CO** modules.

5

4) Project System(PS)

- **Project system** module is a special for **project related activities**.
- It **comprise budgeting**, **planning**, **forecasting**, **work breakdown structure** for projects.
- **PS module** is again ***highly integrated*** with **FICO** modules.

6 SAP R/3 Architecture

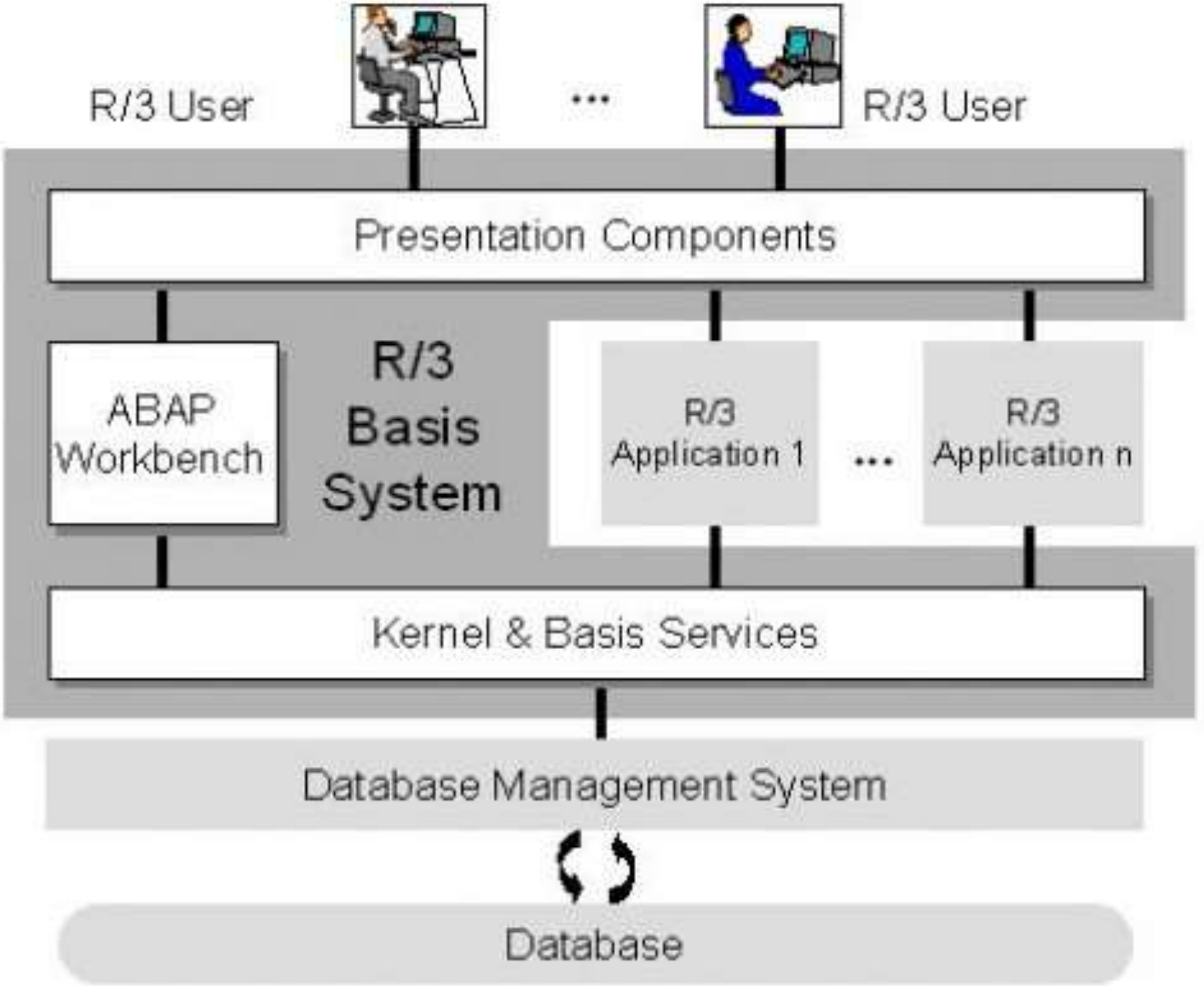
- SAP R/3 Architecture can be divided into **three** main divisions depending on their functionality.

  The classification include_

  1) Database Layer

  2) Application Layer

  3) Presentation layer


R/3 User
...
R/3 User
Presentation Components
ABAP Workbench
R/3 Basis System
R/3 Application 1
...
R/3 Application n
Kernel & Basis Services
Database Management System
Database

SAP R/3 Architecture

6

1)Database Layer

This layer ***stores all the data*** that moves through the SAP architecture. The Database layer is further divided into

- **Database Management System (DBMS)**
- **Database Server**.

SAP R/3 Architecture

6

1)Database Layer

- Database management System or DBMS, is a **set of software programs** used to ***store***, ***update*** or ***delete*** **data from the server.**
- The **user** can **view** and **organize** information **according to** one's **criteria**.
- **Enable security** features ***to prevent unauthorized access*** SAP is compatible with any database system.

SAP R/3 Architecture

6

1)Database Layer

- In addition **SAP** has developed its **own database** known as **HANA**, if needed.
  High-Performance Analytic Appliance
- The **database layer** may be **combined** with the **application layer** onto a single host or ***both layers may exist independently***.
- It is always better to implement the latter, as this reduces bottleneck in traffic flow.

SAP R/3 Architecture

6

2) Application Layer

- Whenever a **user sends a request** from the **presentation layer**, ***the logical operation*** is provided by the Application Layer.
- In **theory**, only **one application server** is required to process requests.
- But in **practise**, there will be ***'n'*** number of ***application servers*** running on various systems.

SAP R/3 Architecture

6

2) Application Layer

- The **load distribution** between the **application servers** is provided by the ***message servers***.
- The ***message servers*** contain ***data of how many application servers*** are currently online and the distribution of load between them.

SAP R/3 Architecture

6

3) Presentation layer

- The Presentation Layer consists of the **SAP GUI** (Graphical User Interface) which ***acts as*** an **interface** between ***the user*** and ***the other two layers***.
- **User sends *request*** from the ***Presentation Layer*** which in **turn**, gets processed by the ***Application Layer***.

SAP R/3 Architecture

6

3) Presentation layer

- Data is then **retrieved from** the **Database layer** and **passed back to** the **Presentation Layer** in the reverse order.
- The **control of a program *switches*** from one layer to another during each operation.

SAP R/3 Architecture

6

3) Presentation layer

- When the **Presentation Layer** is ***ready,*** the **user can enter input** in the screen.
- At that time, the **Application Layer** will **not be accessible**.
- Once the **data gets entered**, control **switches over to the Application Layer**.

SAP R/3 Architecture

6

3) Presentation layer

- Until the **Application layer completes the processing** and **initiates a new screen**, user cannot input any data.
- The **procedure**, in which a new screen is presented before the user, is called a ***dialog step***.

SAP R/3 Architecture

6 Application Server

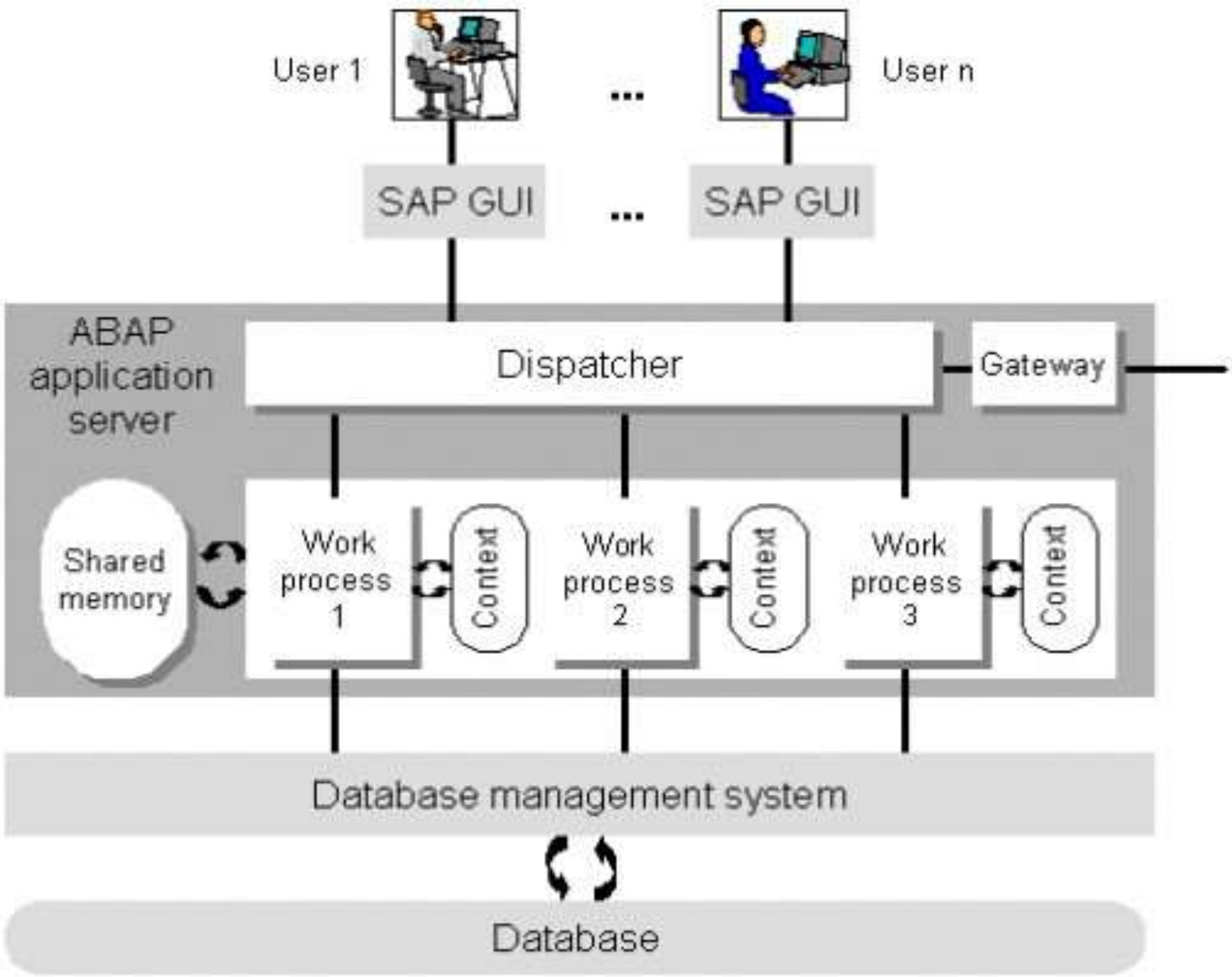
- Now let us look a little bit closer to the ***working of the Application Layer***.
- As told before, it is divided into **two sections**

1. **Application Server**
2. **Message Server**

SAP R/3 Architecture

6 Application Server

- The **application server** is **used to connect the Presentation layer with the Database layer**.
- ***Work process***, ***dispatcher*** all comes under this.
- **Application server** ***communicates with each other using the message server***.


User 1
...
User n
SAP GUI
...
SAP GUI
ABAP application server
Dispatcher
Gateway
Shared memory
Work process 1
Context
Work process 2
Context
Work process 3
Context
Database management system
Database

SAP R/3 Architecture

6 Application Server (Work Process)

- A ***process initiated by the system***, to ***execute user's request***.
- There can be ***'n'*** number of **work processes**, **linked to running a program**.
- **Work process** uses **two memory areas**. One is ***User Context***, which contains information about the user. Another is known as the **Roll Area**, which contains the data for program execution.

SAP R/3 Architecture

6 Application Server (Dispatcher)

- The request that reaches the ***Application Layer***, ***first comes to the Dispatcher***.
- From here, it is ***routed to different work processes*** depending upon their availability.
- The dispatcher operates on the ***principle*** of ***First come - First server*** basis.

SAP R/3 Architecture

6 Application Server (Gateway/Shared Memory)

- **Gateway**: Acts as a interface for communication medium. RFC protocol is used for communication between SAP system.
- **Shared Memory**: Represents the common memory in Application Server. All work process has access to this shared memory.

7 Success of SAP R/3

- In **North America** has been nothing short of stunning. **Within a 5 year period**, the North American market went from virtually **zero to 44%** of total SAP worldwide sales.
- **SAP America** alone **employs more than 3,000 people** and has added the names of many of the Fortune **500 to it's customer list.**

7 Success of SAP R/3

- **SAP** today is available in **46 country-specific** versions, incorporating **28 languages.**
- **SAP** also comes in **21 industry-specific versions.**
- **SAP R/3** is delivered to a customer with selected standard process turned on, and many other optional processes and features turned off.

7 Success of SAP R/3

- At the heart of **SAP R/3** are about **10,000 tables** which control the way the processes are executed.
- Configuration is the process of adjusting the settings of these tables to get SAP to run the way you want it to.

8 ABAP – Language of SAP

- **ABAP** - ***Advanced Business Application Programming*** which can be classified as **4th Generation Programming Language**.
- High level programming Language **Created by** the **German software company** SAP.
- Its syntax is somewhat similar to **COBOL**.

8 ABAP – Language of SAP

- It has many of the **features** of other **modern programming languages** such as the familiar **C**, **Visual Basic**, and **Power Builder**.
- Your programs **name conventions** begins with a letter **yxxx** or **zxxx**.

8 ABAP – Language of SAP

- **ABAP language syntax**
- **ABAP is not case sensitive.**
- **Every statement begins with a keyword and ends with a period.**

  (WRITE is the keyword to print on screen)

WRITE 'Hello World!'.

8 ABAP – Language of SAP

```
WRITE 'Hello'.
WRITE 'ABAP'.
```

- Chained Statement:

```
WRITE: 'Hello', 'ABAP'.
```

8 ABAP – Language of SAP

Comments

If you want to make the entire line as comment, then enter asterisk (*) at the beginning of the line.

*** This is a comment line**

If you want to make a part of the line as comment, then enter double quote (“) before the comment.

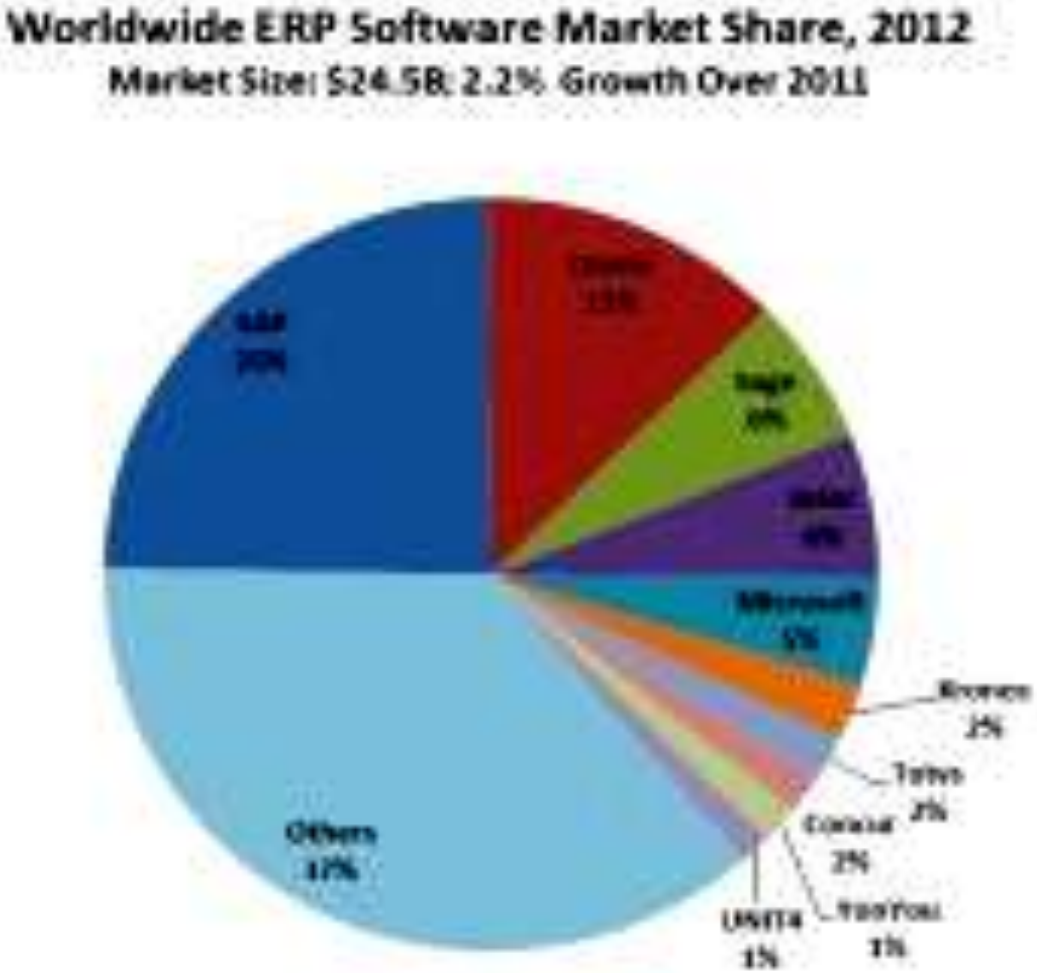
WRITE 'COMMENT'. "Start of comment

9 Benefits of SAP

- Improves productivity
- Reduces cost by increasing flexibility.
- Supports additional extensions in an organisation, if required.
- Optimize IT spending.
- Provide immediate access to enterprise information.

ERP and SAP Market share

ERP market share



ERP and SAP Market share

10

SAP market share

- **SAP is *a leader* in ERP industry.**
- **According to a recent report of Forbes, SAP leads ERP market share with 25% and with $6B revenue.**
- **While Oracle is at $3B revenue and Sage at $1.5B revenue market share.**

ERP and SAP Market share

10

SAP market share

- **Oracle** is the **biggest competitor** of SAP in the field of **ERP**.
- **Oracle** has **strong** base in **data storage**.
- **SAP** is relatively new in **data storage** but its getting up to the speed with its **own data storage** system SAP ***HANA***.

11 SAP Training and Certification

Benefits of SAP training

1) Acquire the skills and knowledge needed to tackle the most challenging projects.
2) Wider spectrum of opportunity in the global market.
3) Competitive edge to meet the strategic goals of your organization.
4) Gain international recognition and instil (inspire/fill) client confidence.

11

SAP Certification

The **international SAP certification** examination is an important benchmark of consultant expertise, making SAP Education a must for all functional managers and IT professionals.

http://www.lithangenovate.com/onlinecampaign/SAP_ABAP/

http://www.sapbwtraininghq.com

11

There are two ways for getting SAP certification:

1. By undergoing the full **5-weeks** training at any of the ***Authorized Education Partners*** of **SAP**.
2. Should have **at least** ***2 implementations experience***, were the **Company authenticates** and ***sponsors*** the candidate. The Company, which is sponsoring the candidate, needs to be a SAP Partner.

11

The examination tests the candidate's ability to:

1) ***Explain*** and ***implement*** various core business ***processes*** and ***functions*** in R/3 in one of the following application areas: Accounting, Controlling, Materials Management, Production & Production Scheduling, Sales Order Processing, and Human Resources
2) ***Describe organizational units*** in the mySAP system, their ***characteristics*** and their ***relationship***

11

The examination tests the candidate's ability to:

3) ***Define master data*** and ***make appropriate global settings*** (customizing).
4) **Tailor** SAP to **customer's needs**.
5) **Work with the SAP navigator**, ***online documentation***, ***process*** and ***data models*** and ***implementation methodologies.***

11

The examination tests the candidate's ability to:

6) ***Acquire knowledge*** through ***available documentation***.
7) **Describe the SAP service** support structure.
8) ***Describe the technological requirements*** of the R/3 system.

The certificate is release-based and can be updated with further training and delta tests when new releases become available.

12 Demo of a SAP program

NAU-CBA SAP tutorial

- Basic SAP user functions
  - System Logon
  - Common controls
  - Navigation
  - Favorites
  - Transaction codes
  - Graphical user interface (GUI) customization

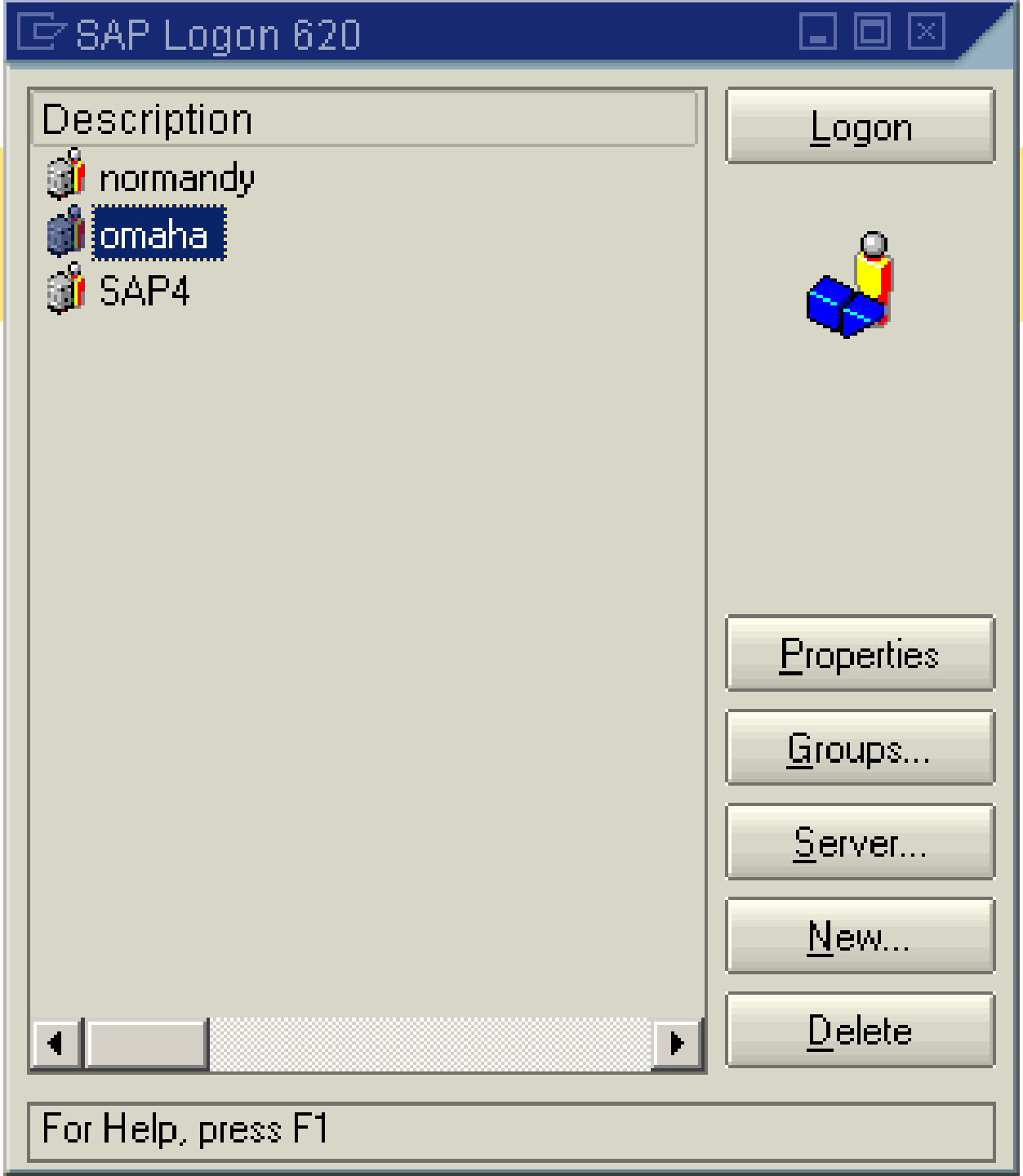
12

System Logon:

To access the SAP system start Citrix and logon (if you are using a computer in a CBA lab, start SAP by going to Start, Programs, SAP Front End, SAPLogon).
You will see a folder labeled SAP.
Open the SAP folder and double click on SAPlogon.
After a few moments, you should see a logon screen similar to the one below.

12

System Logon:



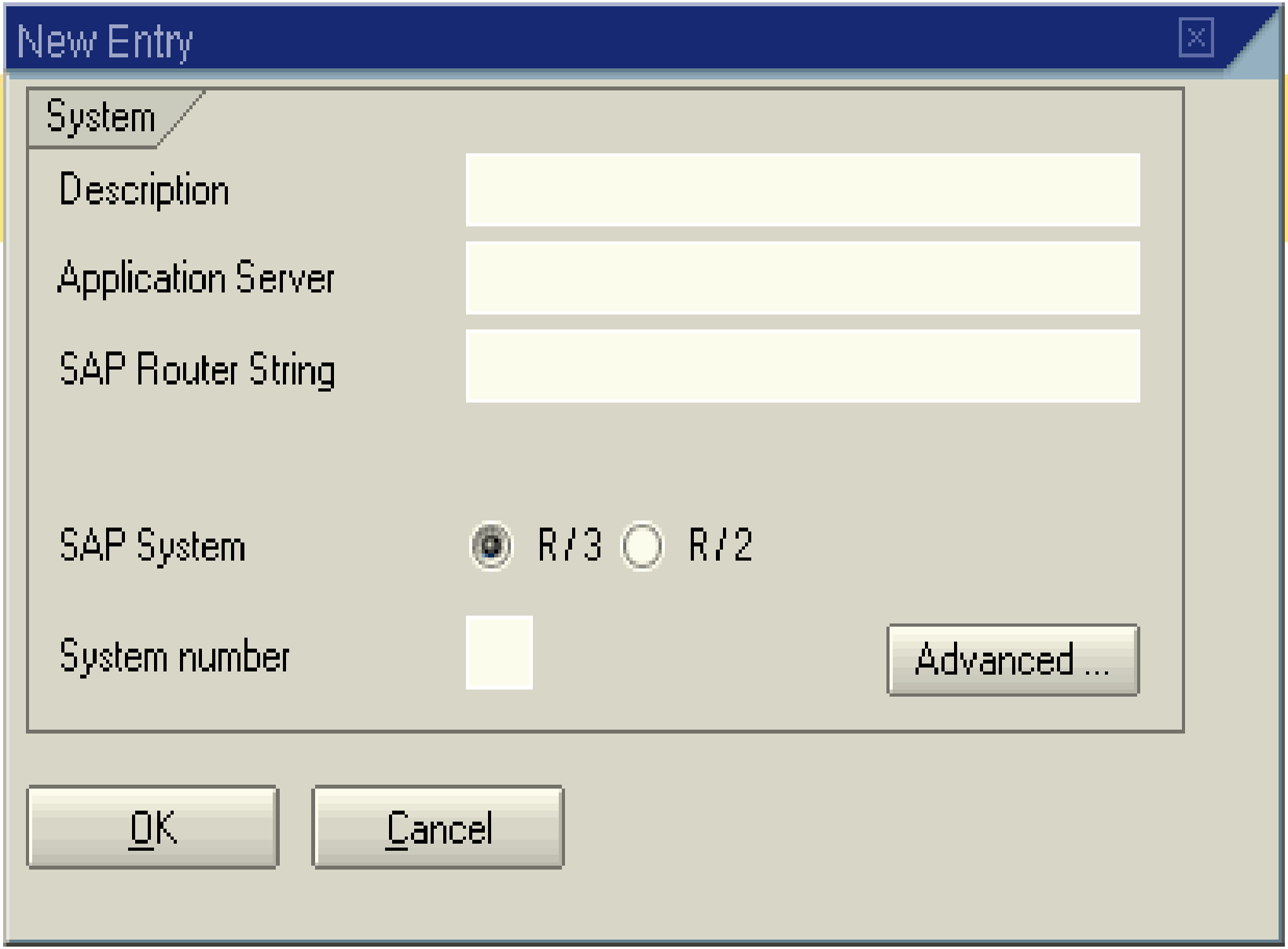
12

System Logon:

- Your first task will be to **add** the **server** for this class.
- Click on the **New** button on the right side of the **SAP Logon box**.
- You should now see the **New Entry box** shown below.

12

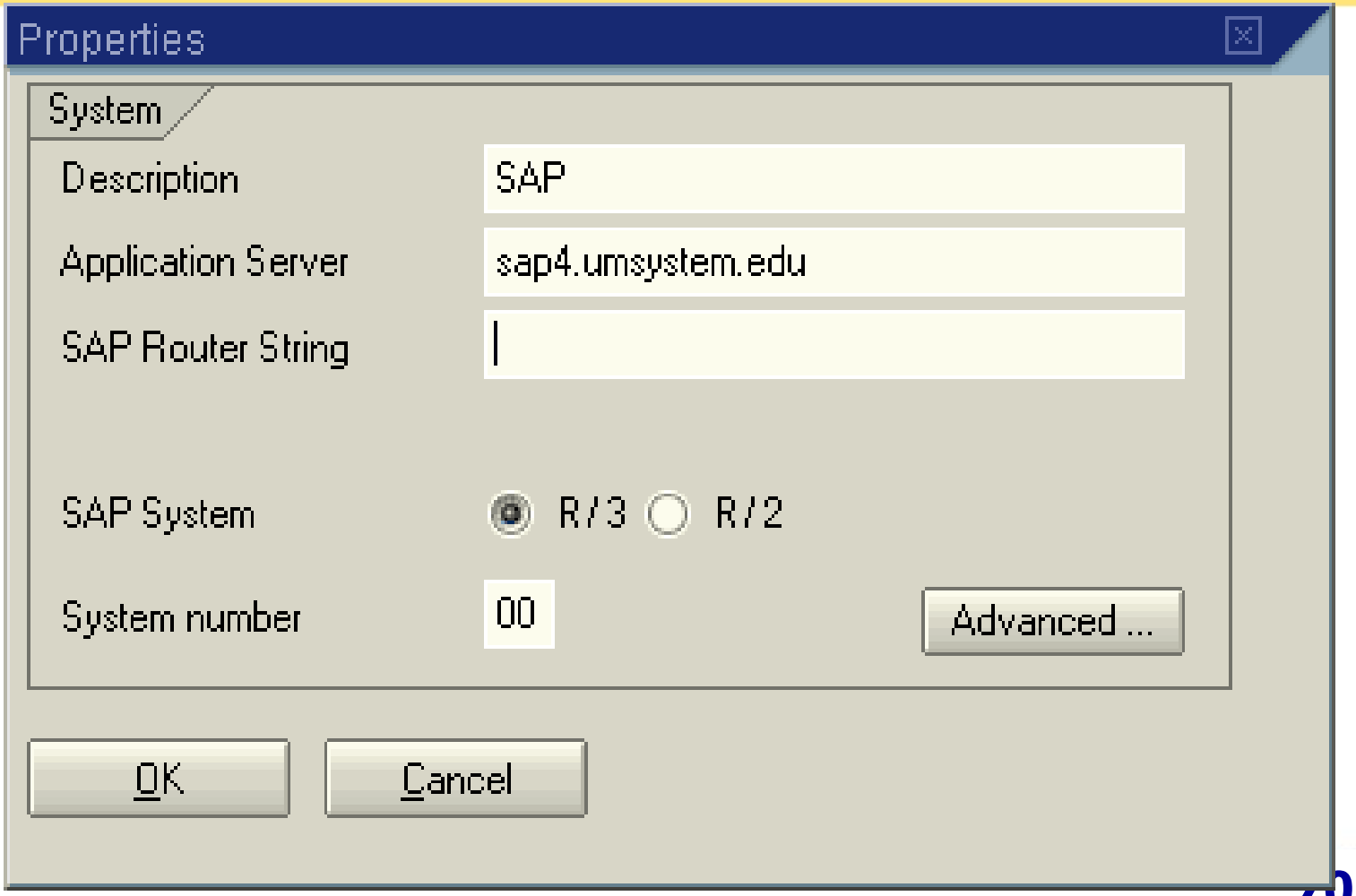
New Entry Screen



New Entry Box:

12

Fill in the New Entry box exactly as shown below.



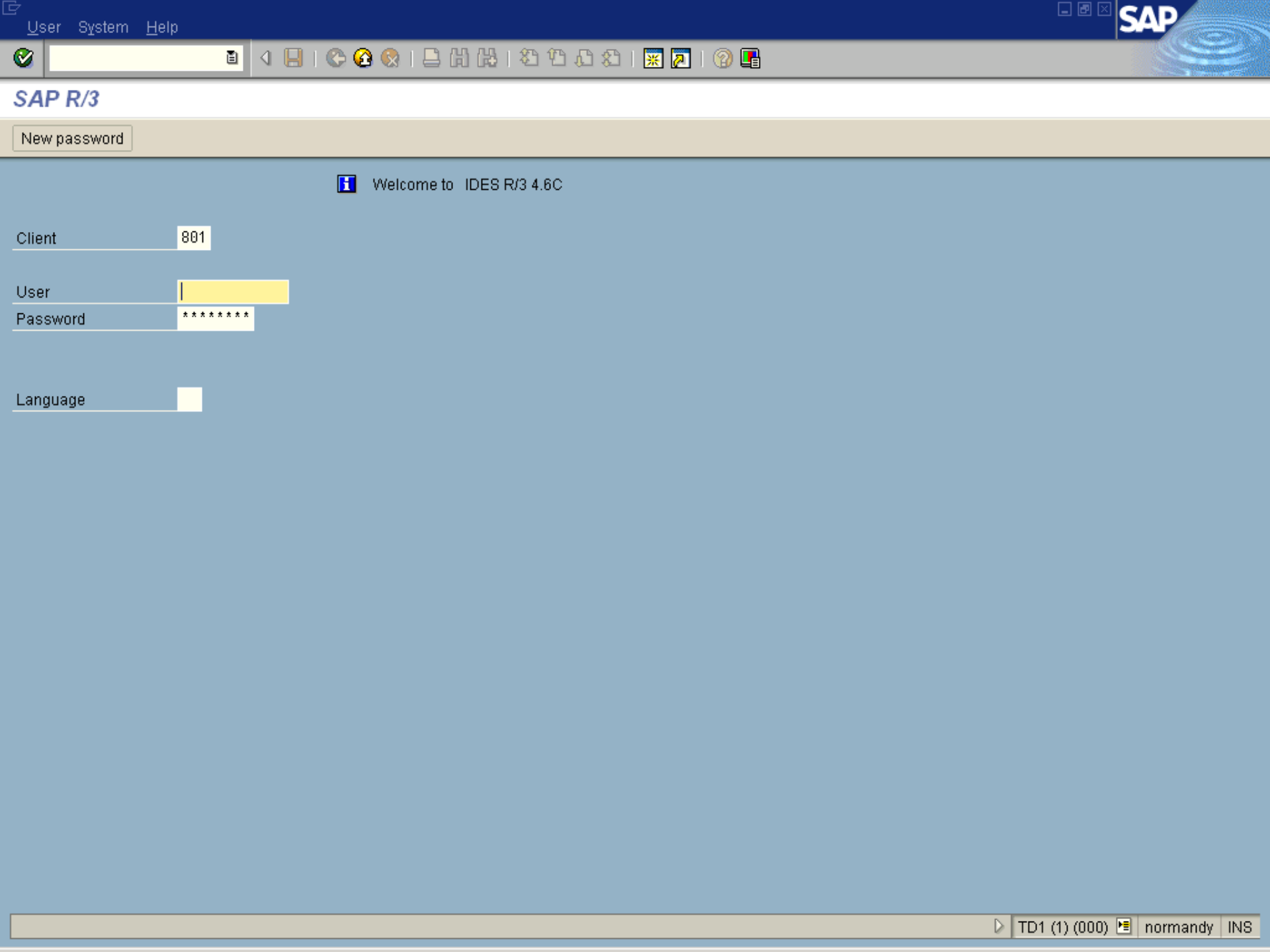
12

New Entry Box:

Click the **OK** button after you have finished entering the information. You should now see the ***SAP server listed*** in the SAP Logon box.

*** You only need to add the SAP server one time.**

Double click on the ***SAP server*** you just created. You will be taken to the **SAP Welcome screen** below.


User System Help
SAP
SAP R/3
New password
Welcome to IDES R/3 4.6C
Client
801
User
Password
****
Language
TD1 (1) (000)
normandy
INS

12

1. Enter the **client number** for your class (**401**), and your **username**.
2. Enter the letters **INIT** as your **password**.
3. Click the **green check mark** near the upper left of the screen.
4. You will be prompted to ***enter*** and ***confirm*** a **new password** of your choosing.
5. Please make sure you **remember your password.**

12

6. When the **copyright screen** appears, click the **green checkmark**.
7. You should now be at the **SAP Easy Access start** screen shown below (your actual menu may look slightly different).

Menu Edit Favorites Extras System Help

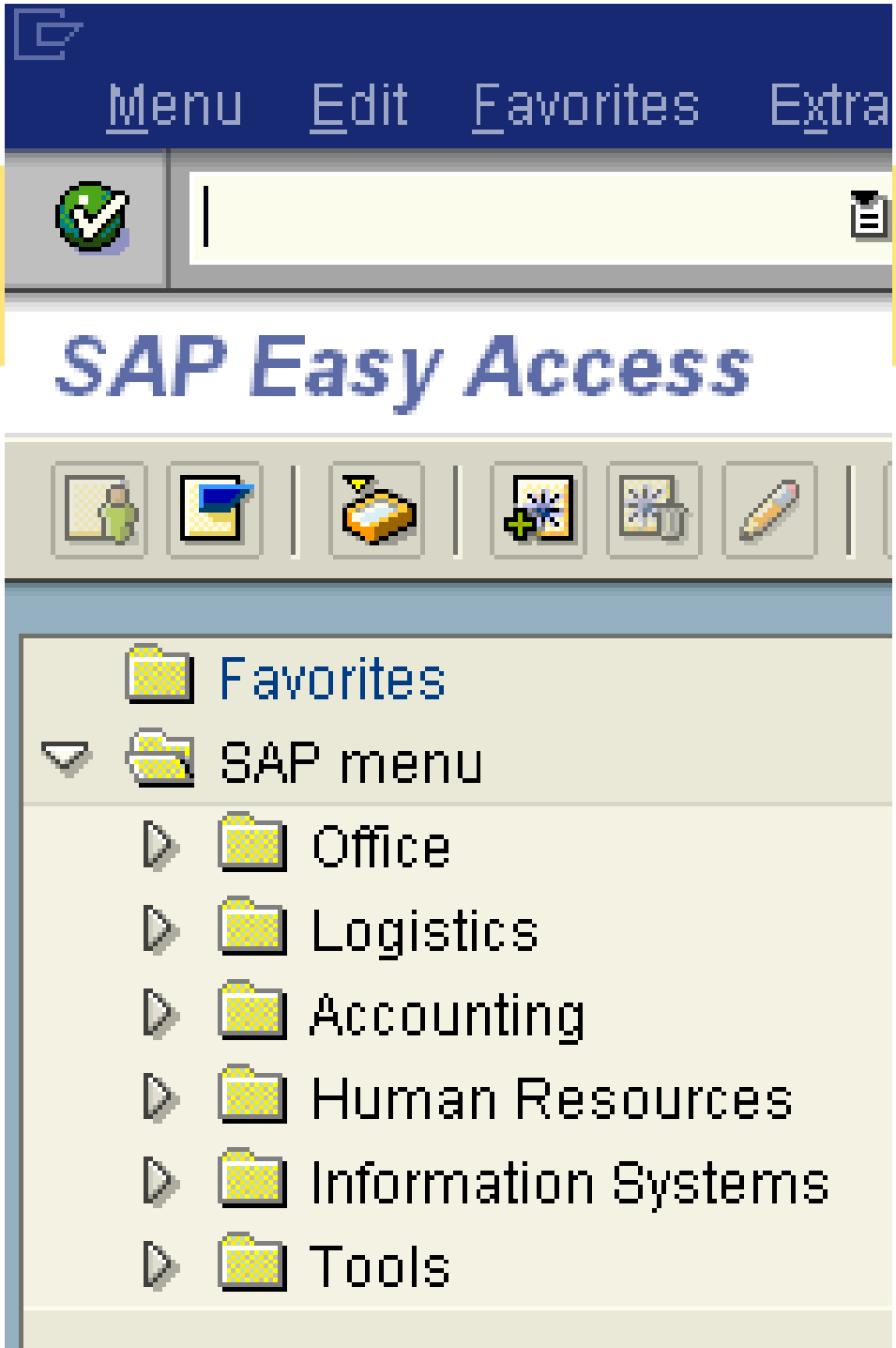
SAP

SAP Easy Access

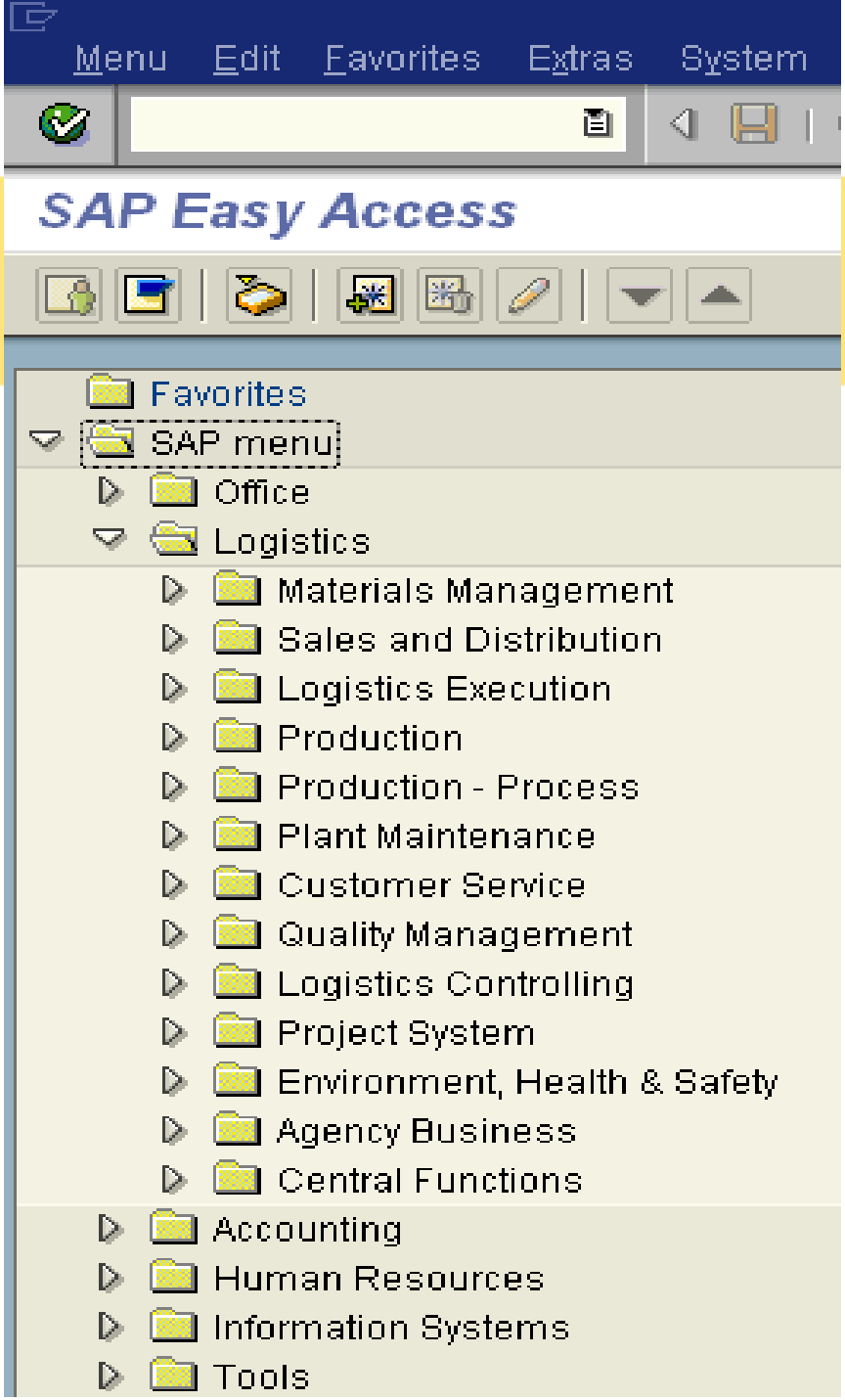
- Favorites
- SAP menu
  - Office
  - Logistics
  - Accounting
  - Human Resources
  - Information Systems
  - Tools

TD1 (1) (801) normandy INS

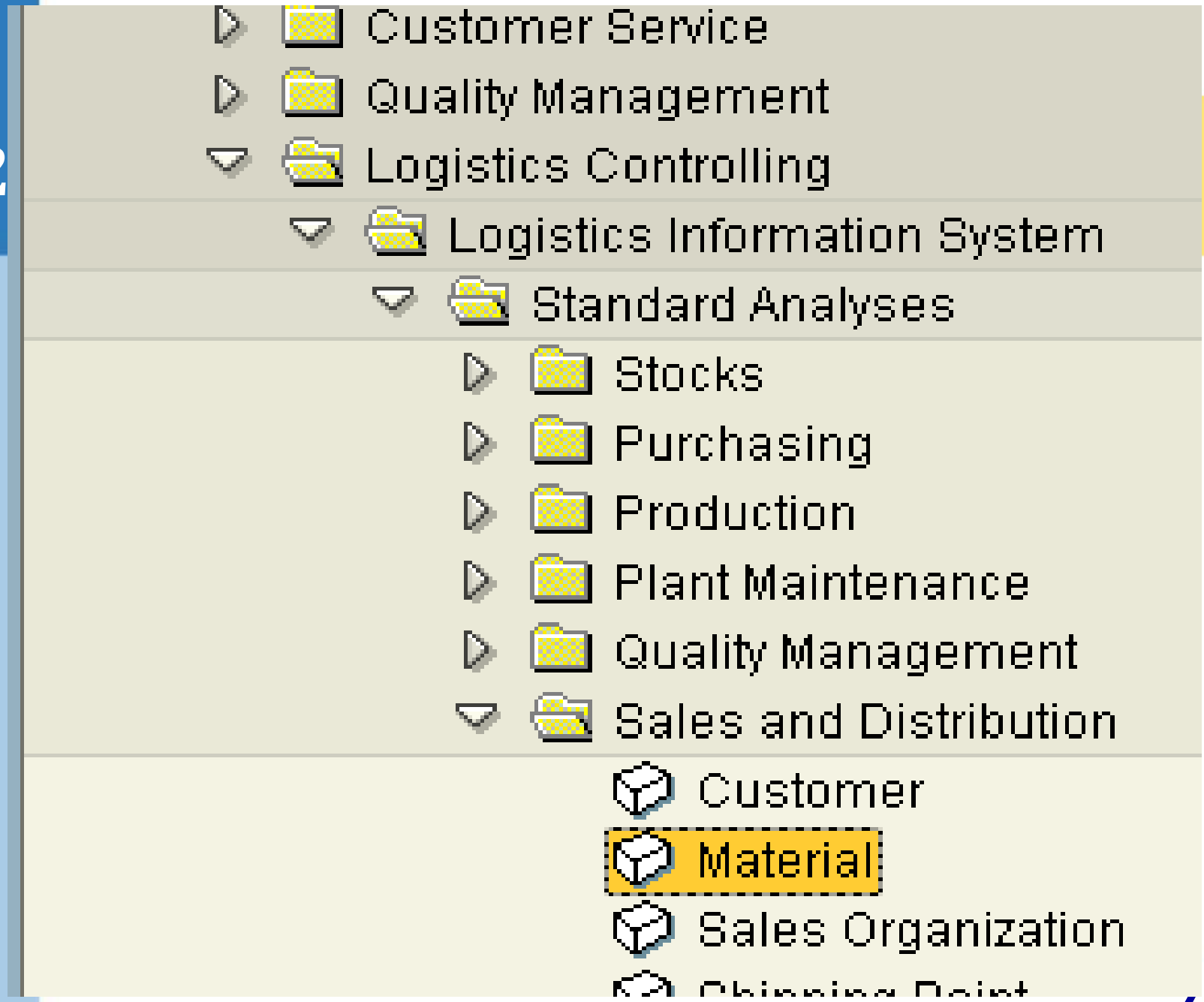
12

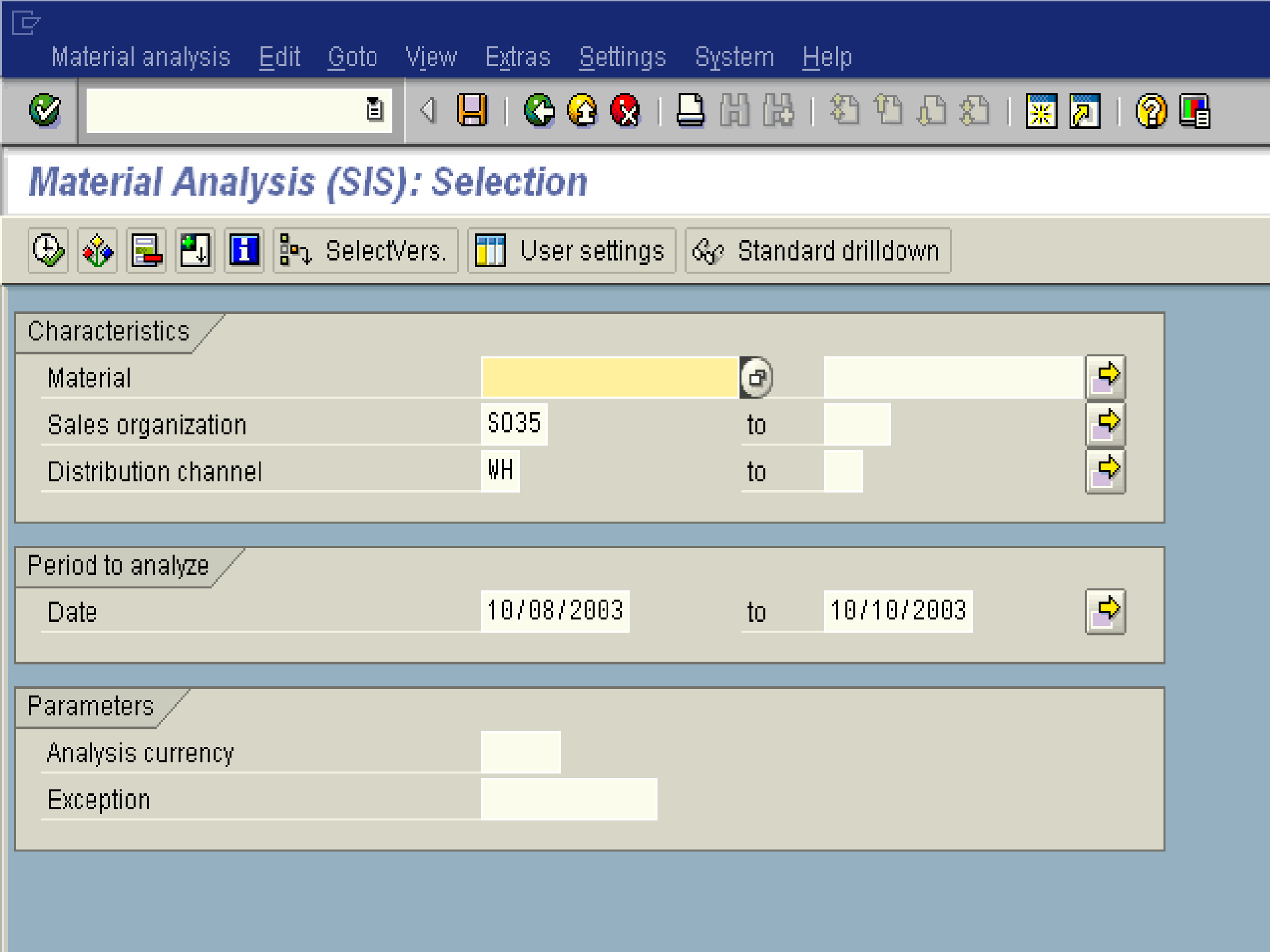

Menu Edit Favorites Extra
SAP Easy Access
Favorites
SAP menu
Office
Logistics
Accounting
Human Resources
Information Systems
Tools

12


Menu
Edit
Favorites
Extras
System
SAP Easy Access
Favorites
SAP menu
Office
Logistics
Materials Management
Sales and Distribution
Logistics Execution
Production
Production - Process
Plant Maintenance
Customer Service
Quality Management
Logistics Controlling
Project System
Environment, Health & Safety
Agency Business
Central Functions
Accounting
Human Resources
Information Systems
Tools

12


Customer Service
Quality Management
Logistics Controlling
Logistics Information System
Standard Analyses
Stocks
Purchasing
Production
Plant Maintenance
Quality Management
Sales and Distribution
Customer
Material
Sales Organization


Material analysis Edit Goto View Extras Settings System Help
Material Analysis (SIS): Selection
SelectVers.
User settings
Standard drilldown
Characteristics
Material
Sales organization
S035
to
Distribution channel
WH
to
Period to analyze
Date
10/08/2003
to
10/10/2003
Parameters
Analysis currency
Exception

References

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- http://sapficotutorial.com/what-is-sap/
- http://sapeducation.in.atos.net/
- http://ktnptl.hubpages.com/hub/What-is-SAP-Everything-you-need-to-know-about-SAP-software
- http://www.saphub.com/abap-tutorial/abap-language/
- www.lithangenovate.com
- http://www.lithangenovate.com/onlinecampaign/SAP_ABAP/

Thank You

Question - Answers

Have a Nice Day!!!