

MIS 5121: Business Process, ERP Systems & Controls
Week 8: *Authorizations -1, Financial Accounting
and Controlling 2*

Control Failure: Blake Koen's Presentation

- Background:



- Control Failures: 2006 – 2009



- Results:



- Reference:



Control Failure: Shuya Yang's Presentation

- Background:



- Control Failures: 2006 – 2009



- Results:



- Reference:



Control Failure: Celine Qu Presentation

- Background:



- Control Failures: 2006 – 2009



- Results:



- Reference:



External Financial Reporting regulations

Other Reg's

Organization's Objectives & Policies

Balance Sheet

P & L

Notes

FDA etc.

Performance & Policies

Arise through

Must be observed / achieved in

Business Processes

Procurement

Production

Order to \$\$

Finance

IT

Quality

Logistics

HR

...

Contain

Assertions

- Completeness
- Existence, rights
- Accuracy
- Valuation
- Presentation

Risks

Errors & Fraud

- Product quality
- Delivery (OTD)
- Unused capacity
- Excess Costs
- Lower Sales

Minimized by

ISC framework in the ERP environment

- Entity level controls
- Automated application controls
- Manual and semi-automated business process controls
- Authorizations and access protection (confidentiality, integrity)
- IT General controls (change management, operation, security)
- Automated testing and monitoring of business processes, KPIs, etc.

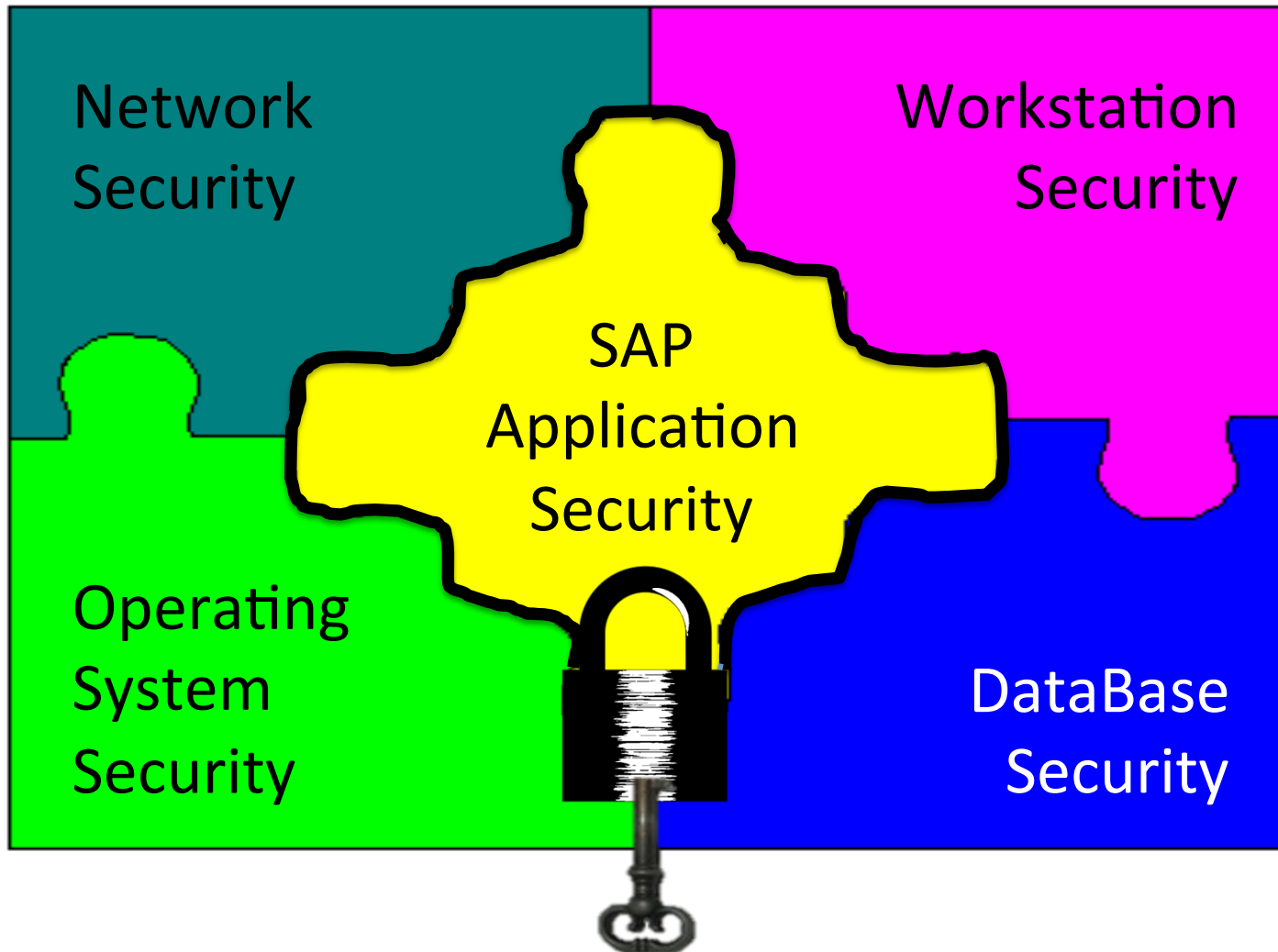
Security: SAP Authorization Concept

Key Information Technology Risks

- System Security
- **Information Security Administration**
- Background Processing (Batch vs. foreground: real-time)
- Powerful User ID's and Profiles
- Instance Profile Security
- Change Management (including Logs and Traces)
- Table Security
- Data Dictionary, Program and Development Security
- Transport Security
- Change Control
- Data Migration
- Data Interface
- Firefighter access

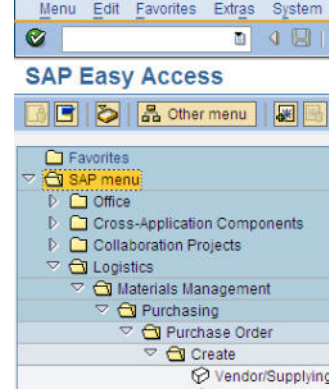


SAP Environment Security Components



SAP Security Terminology

- **Transaction (T-code)**: used to access SAP Functions or run programs. Each function & program in SAP has a t-code assigned to it (e.g. VA01, ME23N, S_ALR_87012291)



- T-code Insights

- All transactions and names stored in table TSTC
- Some common structures: M E 2 3 N

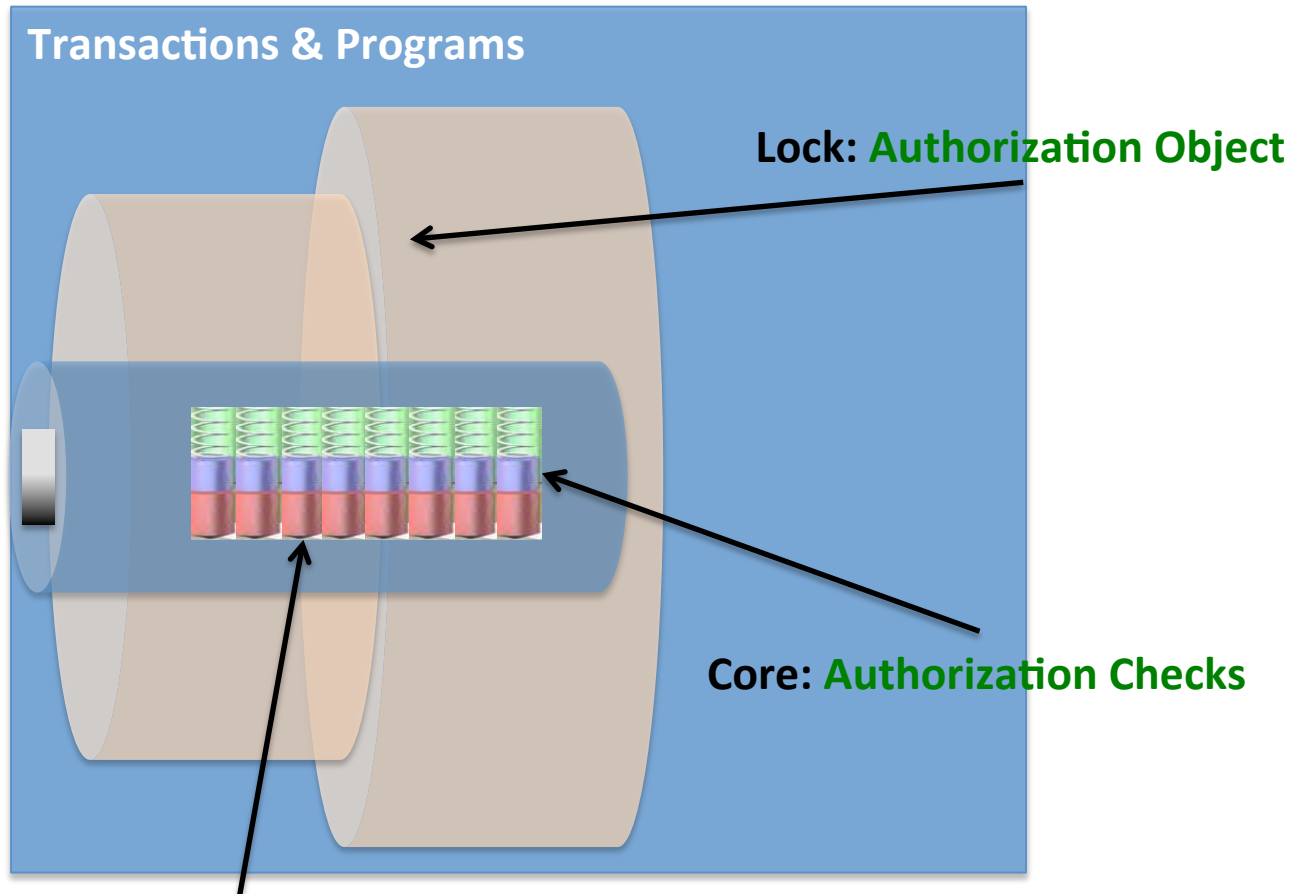
Consult German Dictionary

1 – Create
2 – Change
3 – Display
4, 5 Group Display

N – New version
Of existing transaction

- S_ALR... : System Report
- Z...; Y.... : Custom transaction (non-SAP development) Typically company has naming convention

SAP Security: Lock Concept

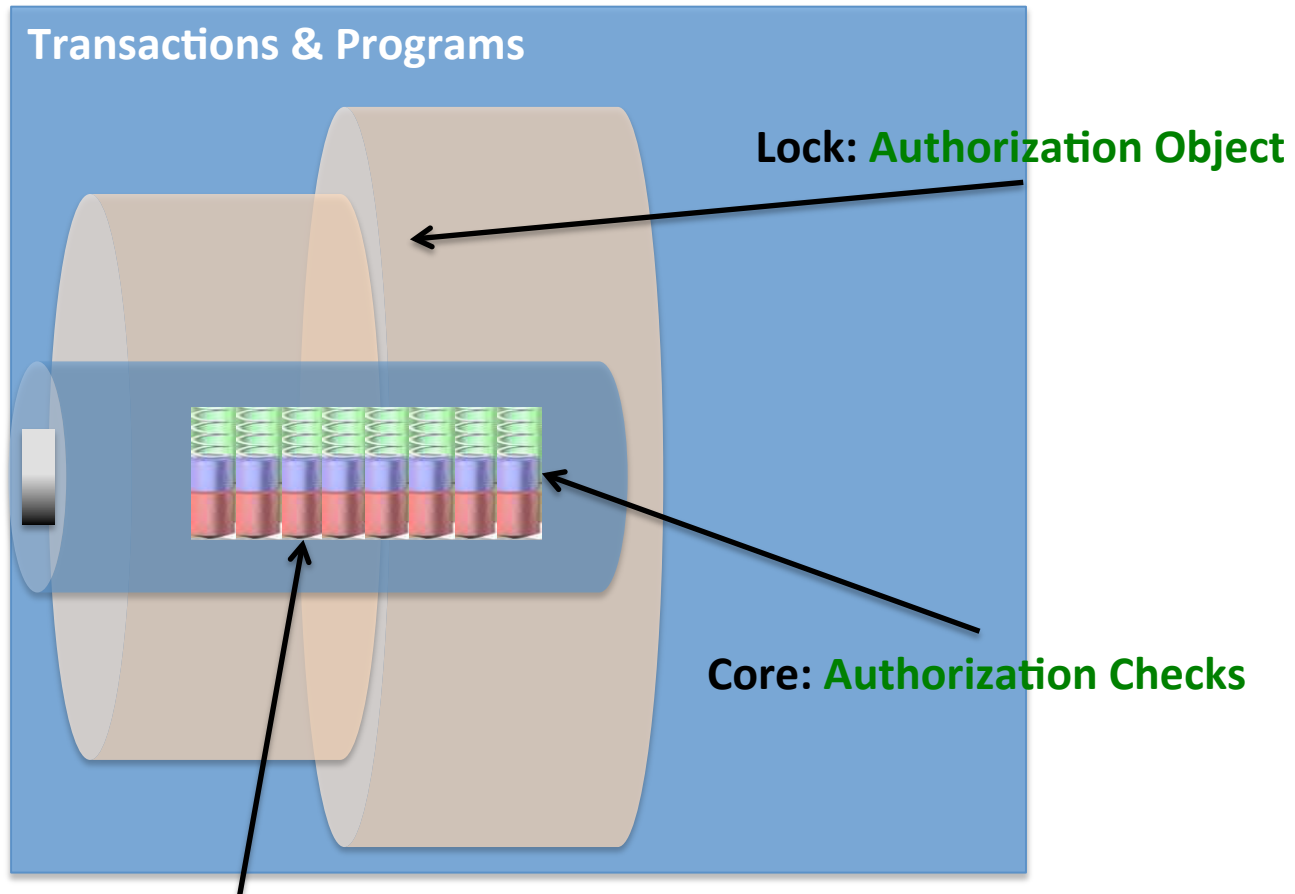


Tumblers: **Authorization Fields**

SAP Security Terminology

- **Authorization Object**: Logical template ('lock')
 - Implements access restrictions in SAP
 - Contains 1+ fields
 - Referenced by authority-check statements coded in programs
 - Often many objects referenced by same program
 - Objects are **AND**ed together
 - More than 900 SAP Supplied authorization objects
 - Examples:
 - V_VBAK_AAT: Sales Document: Auth for Sales Document Types
 - V_VBAK_VKO: Sales Document: Auth for Sales Area
 - F_BKPF_BES: Account Authorization for G/L Accounts

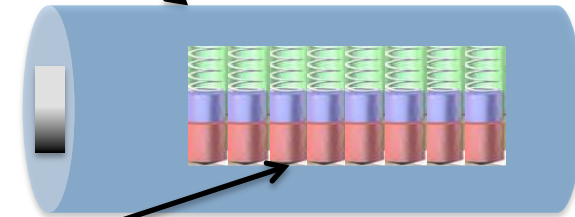
SAP Security: Lock Concept



Tumblers: **Authorization Fields**

SAP Security Terminology

- **Authority Check:** (the lock 'core')
 - Program statement(s)
 - Checks the user's authorizations buffer for fields and values (based on the referenced authorization object)



- **Authorization Field:** (the lock 'tumblers')
 - 1-10 fields used in each object / check.
 - Examples:
 - Activity: function to be performed (create, change, display, etc.)
 - Document type (e.g. sales, purchasing, production, ...)
 - Enterprise Hierarchy node (e.g. company, sales org / area, plant, etc.)
 - Account type (e.g. customer, vendor)

SAP Example

Transaction: **SUIM**
Select Role: '**Z_BPI**'
– **Authorizations** tab

The screenshot shows the SAP 'Display Roles' transaction. The role 'Z_BPI' is selected, with the description 'ZBPI Role for UCC Faculty Access to More Functions'. The 'Authorizations' tab is highlighted with a pink box. Below the tabs, the 'Administration Information' and 'Transaction Inheritance' sections are visible.

Administration Information		Transaction Inheritance
Created	Changed	Derive from Role

SAP Example

Transaction: SUIM - Select Role: 'Z_BPI' – Authorizations tab

The screenshot displays the SAP SUIM transaction interface for role 'Z_BPI'. The main area shows a tree view of authorization objects. The 'Field values' dialog is open, showing the following details:

Field values

- Object: F_FAGL_LDR General Ledger: Authorization for Ledger
- Field Name: BUKRS Company Code

Value Intrvl

'From'	'To'
*	

The background tree view shows the following structure:

- Z_BPI ZBPI Role for UCC Faculty Access to More Functions
 - Manually Basis: Administration
 - Manually Table Maintenance (via standard tools)
 - Manually Table Maintenance (via standard tools)
 - Activity Change, Display
 - Table Authorization Group &NC&, CC, CL, FA
 - Manually Financial Accounting
 - Manually General Ledger: Authorization for Ledger
 - Manually General Ledger: Authorization for Ledger
 - Activity All activities
 - Company Code *
 - Ledger *
 - Record Type All values
 - Version *

SAP Security: Key Concept

Lock: **Authorization Object**

Key Slot

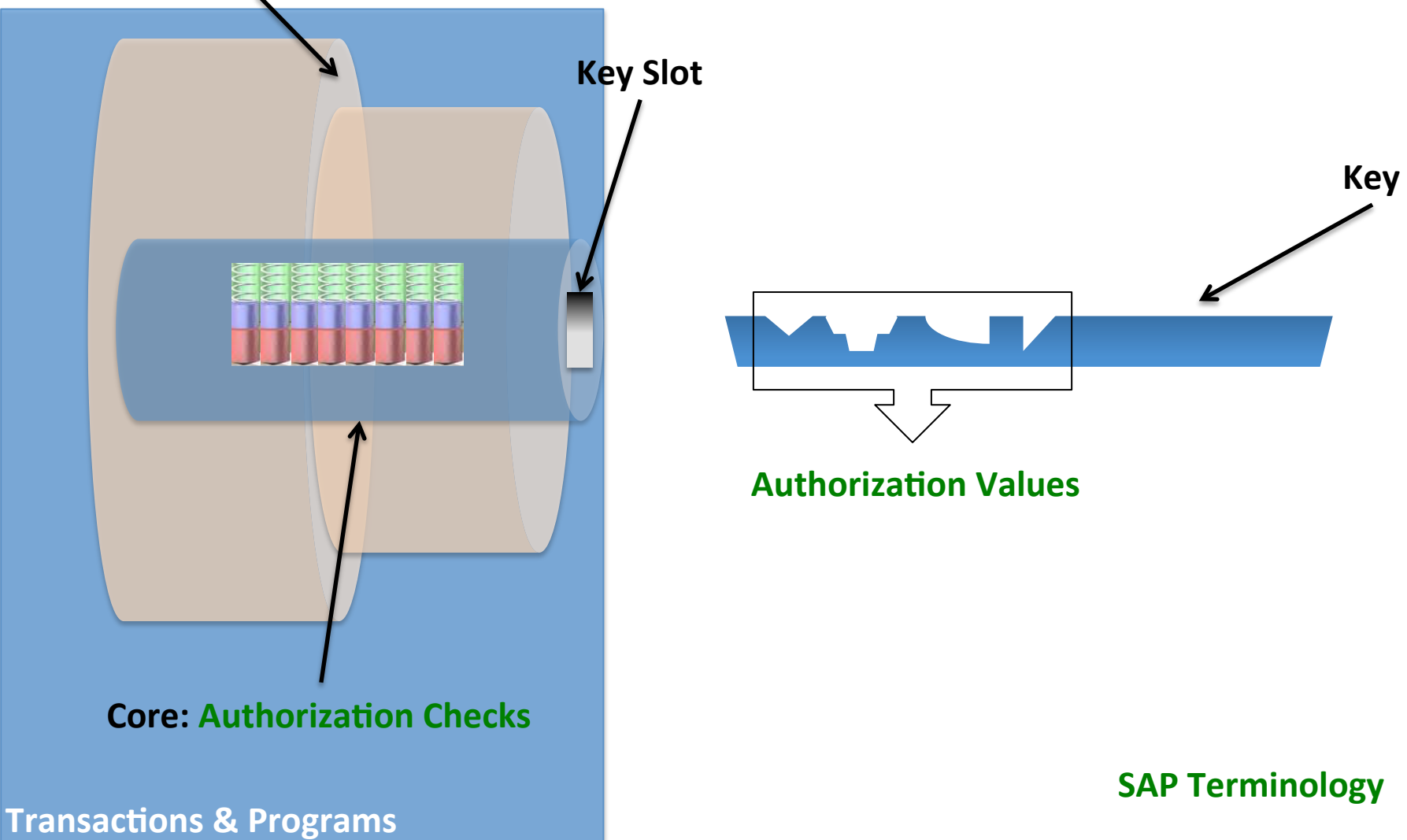
Key

Core: **Authorization Checks**

Authorization Values

SAP Terminology

Transactions & Programs



SAP Security Terminology

- **Authorization Values:**

- Collection of fields & values ('keys') referencing authorization objects
- Contained in user's assigned authorization roles / profiles
- May or may not match values checked by an authorization check statement

Lock: **Authorization Object**

Key Slot

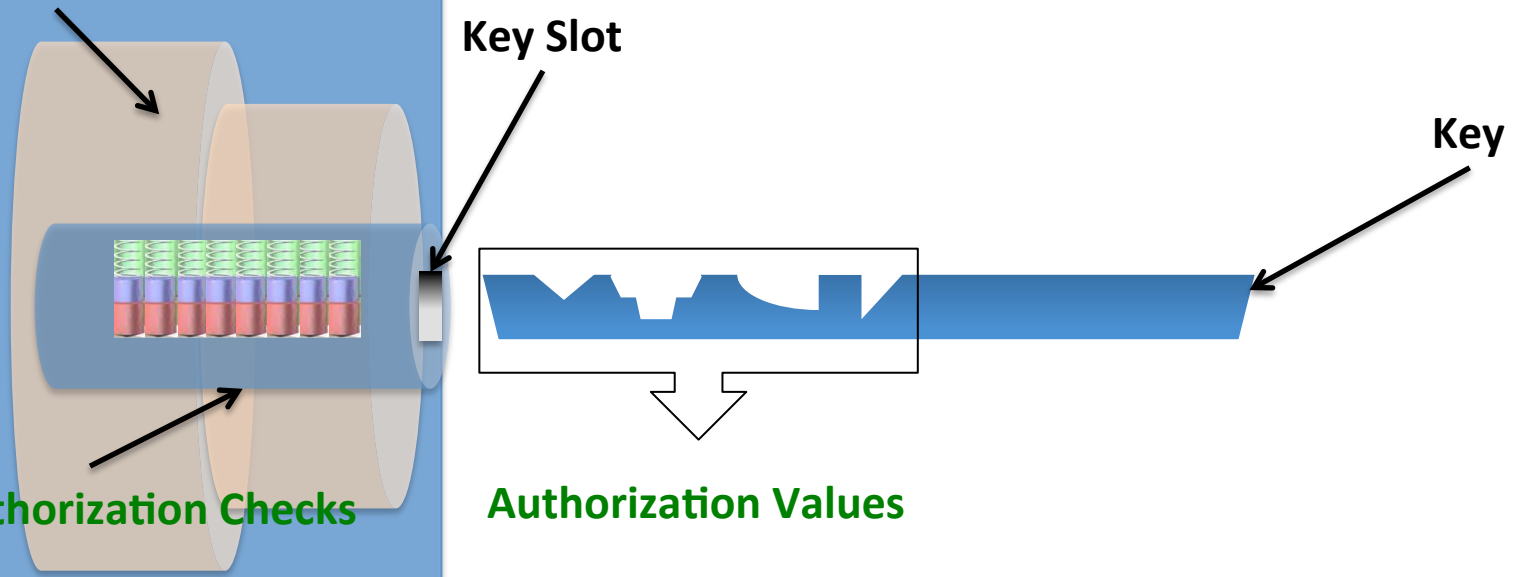
Key

Core: **Authorization Checks**

Authorization Values

Transaction / Program

SAP Terminology



SAP Security Terminology

- **Role**: grouping of privileges
 - Assigned to SAP users, user groups or other roles
 - In general: roles contain logic used to generate profiles
 - Logic in roles includes transactions and user assignments making it the starting point for setting up and maintaining authorizations
 - Can resemble a job description i.e. sales representative, accountant, treasurer
- **Profile**: used to access SAP Functions or running programs.
 - Assigned to users in the user master record
 - Could represent a simple job position
 - Contain authorization and authorization objects
- The basic difference is that the roles contain the "profile" and "user master data"

SAP User IDs

Transaction: **SU01 / SU01D**

Select Role: 'user ID'

Display Users

Menu ◀ Back Exit Cancel System Display/

User

Changed By Status

Address Logon Data SNC Defaults Parameters Roles

Personal Data

Title

Last name

First name

Academic Title

Complete name

Language

Work Center

Function

Department

Room Number Floor Building code

Communication

Telephone Extension

Mobile Phone

Display Users

Menu ◀ Back Exit Cancel System Display/

User

Changed By Status

Address Logon Data SNC **Defaults** Parameters Roles P

Start menu

Logon Language

Decimal Notation

Date Format

Time Format (12/24h)

Spool Control

OutputDevice

Print immed.

Delete After Output

Personal Time Zone

Time Zone

Sys. Time Zone

SAP User Roles / Profiles

Transaction: SU01 / SU01D - 'Roles' and 'Profiles' tabs

Display Users

Menu ◀ Back Exit Cancel System ◿ Display/Change

User

Changed By Status

Address Logon Data SNC Defaults Parameters **Roles** Profiles Groups Personalization Lic. Data

Reference User

Role Assignments

Role User master record

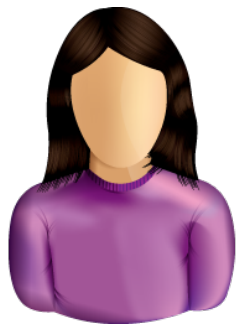
Status	Role	...	Start Date	End Date	Role name
	Z_BPI		07/23/2014	12/31/9999	ZBPI Role for UCC Faculty Access to More Functio
	Z_GBI_SCC_US		06/26/2013	12/31/9999	All SAP_ALL authorizations (except BC, CA, HR)

Address Logon Data SNC Defaults Parameters Roles **Profiles**

Assigned Authorization Profiles

Profile	Type	Text
IDES_DEVELOP		All authorizations without user authorizations
IDES_USER		Profile for IDES user (w/o development and customizing)
T-A4010009		Profile for role Z_GBI_SCC_US
T-A40100091		Profile for role Z_GBI_SCC_US
T-A40100092		Profile for role Z_GBI_SCC_US
T-A40100093		Profile for role Z_GBI_SCC_US
T-A40100094		Profile for role Z_GBI_SCC_US
T-A40100095		Profile for role Z_GBI_SCC_US

Application Security: Example



User

Business Job / Role (e.g. Buyer)

SAP Enterprise Central Component (ECC)

Role:
Maintain
Purchase
Requisitions

T-code: ME51
Create
Purchase Req

T-code: ME52
Change
Purchase Req

Role: Display
Purchase
Requisitions

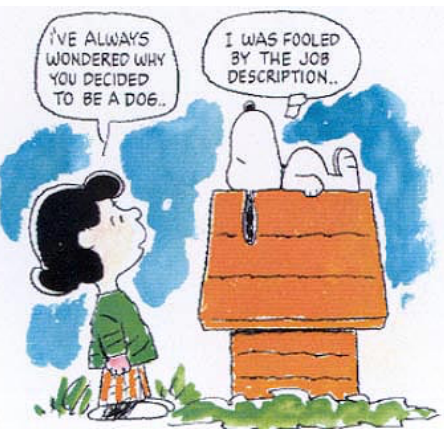
T-code: ME5K
Reqs by
account Assign

SAP Business Intelligence System (BI)

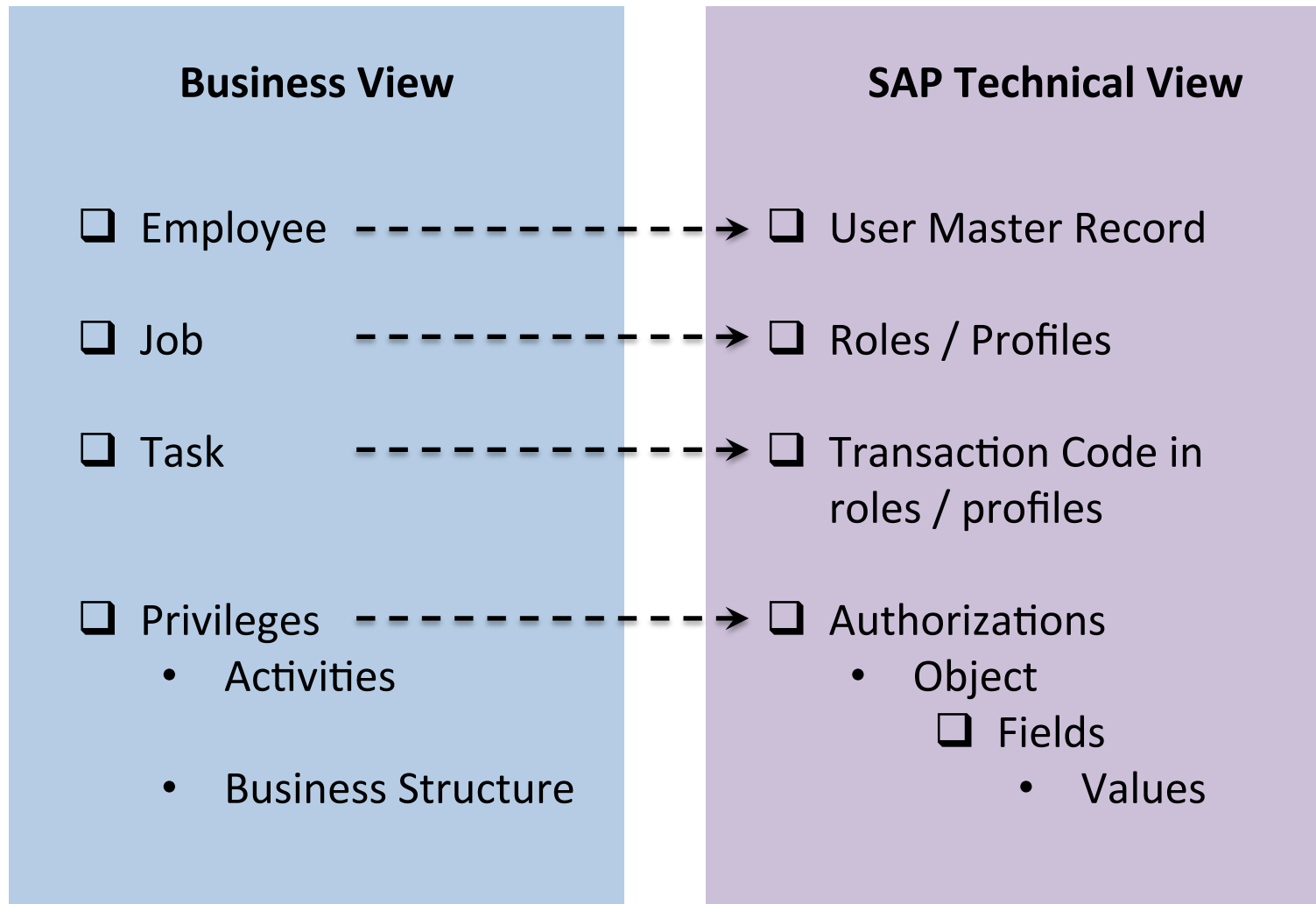
Role:
Procurement
Reports

T-code: ME51
Create
Purchase Req

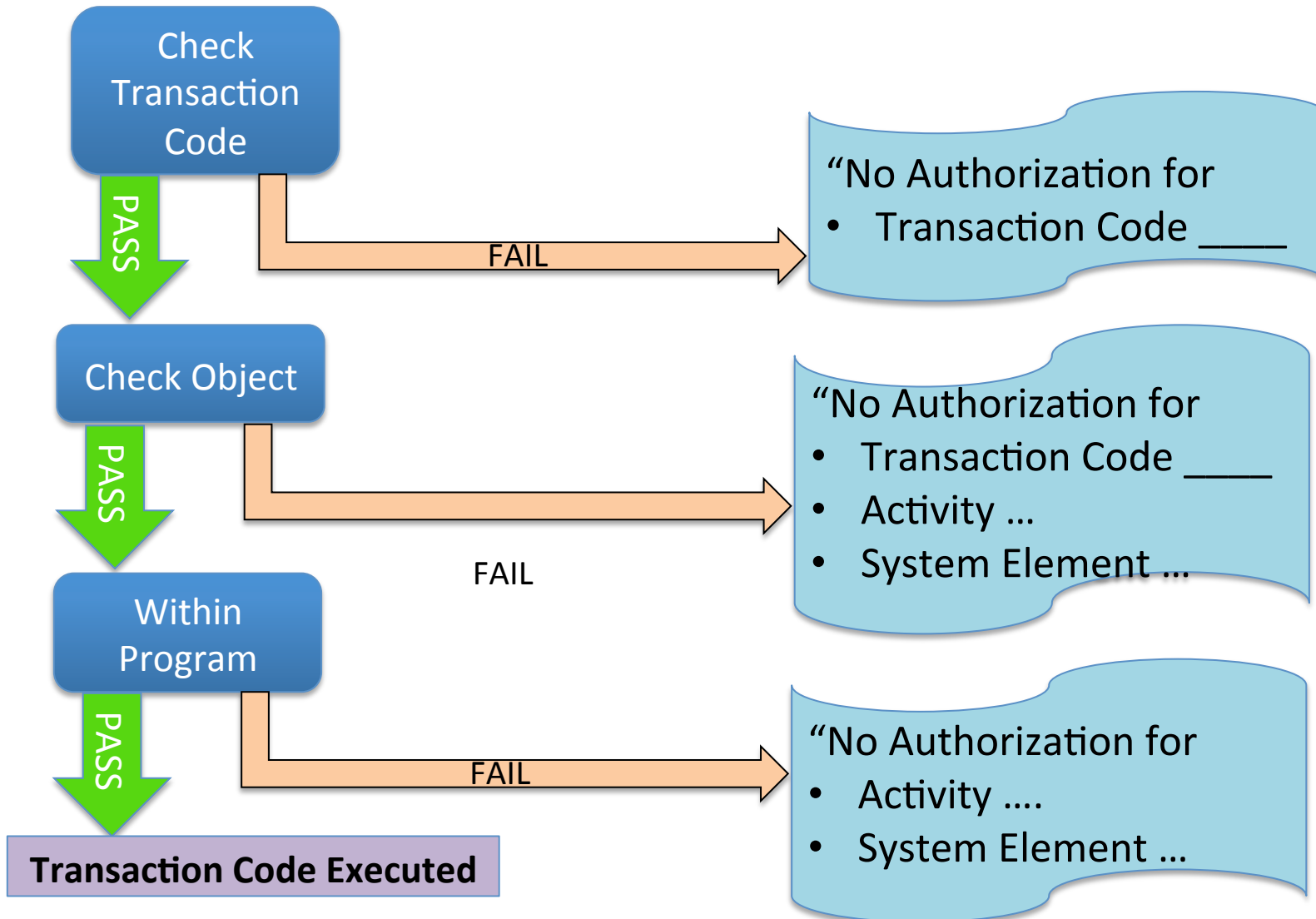
T-code: ME51
Create
Purchase Req



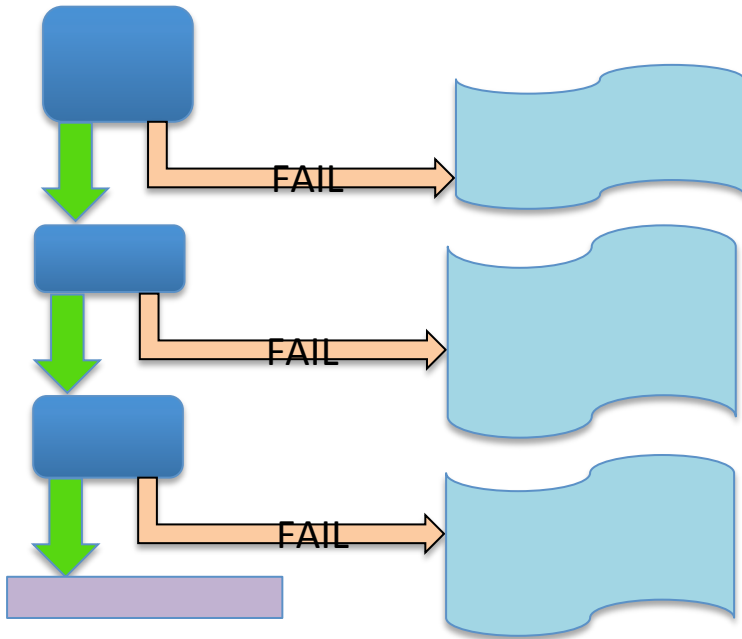
SAP Security: Business vs. Technical View






SAP Security: Logic to Access



SAP Security: Diagnosis



- **SU53**: Display authorization data for failed checks
 - Identifies transaction checked (note sometimes SAP transitions to other transactions e.g. during drill downs)
 - Authorization objects and fields checked and values used / available
 - Helps identify 'missing' authorizations

- ▼  Authorization check failed
 - ▼  Date 03/05/2015 Time 09:47:20 Transaction SMEN
 - ▼  Authorization Obj. S_USER_PRO User Master Maintenance: Authorization Profile
 - Authorization Field ACTVT Activity
 - Authorization Field PROFILE Auth. profile in user master maintenance

SAP Authorization Concept Overview

- SAP Authorizations allow you to protect transactions and programs from unauthorized use
 - ‘New’ custom transactions must include authorization objects to be controlled (if missing – open to every user)
- Access must be explicitly granted through use of authorizations
- Authorizations are assigned to roles (profiles) which in turn are assigned to User Master Records (User IDs)
- Only users with active user master records can log onto system. User IDs needed for:
 - Dialog: people via screens
 - System: batch processes
 - Communication / interfaces

Reading Assignment Questions:

- What is a critical authorization?
- Why the time limit for roles of authorization objects doesn't have a specific end date (valid to 31.12.9999)? Isn't that a control weakness?
- *I want to hear experiences in real accounting departments. Do they experience the same levels of controls described in the book, is there authorizations and user types as well?*
- Can SAP do automated analysis and flag any suspicious transactions?
- Has the implementation of SAP really reduced the chance or number of frauds? Did many of the large companies that experienced huge frauds use SAP? [Link1](#)

Question:

Is 'Ignorance' a valid Security Technique?



Answer: In Two (2) Weeks

Financial Accounting and SAP System Controls

Finance: Fixed Assets

- Basics
 - Asset creation
 - Build (Project Systems)
 - Purchase
 - Manufacture
 - Records:
 - Asset details (creation date, descriptions, location, company, ...)
 - Asset class
 - Initial Valuation
 - Depreciation Keys and Methods (chart of depreciation – varies by country)
 - Account determination
 - Asset History Sheet
 - Activities
 - Post asset values
 - Post / recalculate depreciation
 - Closing



Finance: Fixed Assets

- Low Value Assets
 - Are not capitalized -> operating expense in year acquired
 - Need 'rules' / boundaries
 - Taxes and Statute rules
 - Nature of business (one companies fixed assets are another's current assets)

- Risks

-
-
-

- Controls:

-
-
-



Finance: Fixed Assets

- Risks
 - Does asset exist?
 - Is it valued correctly? Capital vs. expense
 - Incorrect valuation
 - To I Own it?
 - Timing (esp. for long build projects)
- Controls:
 - Strong policies documents, trained, followed
 - Detailed audit of high value, special case assets
 - Search for Strange / different patterns of assets depreciation expense



Finance: Month-end Close



- Closing transactions (SAP Standard and Custom)
 - Reports of changes
 - Reconciliation reports
 - Error Reports (gaps / duplicates in document number assignments)
 - Account balance reclassification
 - Analysis of reconciliation accounts (e.g. GR / IR)
 - Update monthly data (e.g. currencies)
 - Revaluations (standard cost updates and related postings)
 - Depreciation, variances, etc. calculations
 - Post adjustment entries
 - Create Financial reports
- Month-end close easier with vision to be ready to close each day (handle all loose ends right away)
- Period (e.g. Quarter) and year-end similar

Finance: Overview

- Risks / Controls in Finance
 - Document Parking
 - Manual Transactions
 - Fixed Assets
 - 1-time Business Partners
- Key configuration: Company codes
 - Definition Active vs. not (control tool)
- Financial Master Data
 - Chart of Accounts
 - Tolerances
- Real-time vs. Manual Postings
 - When each is used
 - How each is controlled
- Reconciliation: Control tool

Break Time



Start Recording





Remaining Exercises



- Exercise 3: Journal Entries Due: *March 17*
- Exercise 4: Segregation of Duties Due: March 31
- Final Case: Risk / Control Matrix Due: April 28
- Work for these will be completed by 2 person Teams
 - Tried to pair those with some accounting background with someone who does not
 - One (1) submission by each team
 - Share the grade

(2016)



Journal Entries Exercise



- Primary learning objectives are:
 - Experience concepts of beginning financial accounting
 - Review the accounting cycle
 - Work with a manual accounting information system
 - Experience how an ERP system handles the steps of the accounting cycle



Exercise 3: Journal Entries



- Agenda (2016)
 - This Class (*March 7*): Steps 1 – 3 (Manual steps)
 - Next Class (*March 14*): Step 4 (SAP steps)
 - *Due March 17 11:59 PM*: Assignment Submission

Exercise 3: Journal Entries



- **Step 1:** Record the daily transactions
 - Record if appropriate, (some events may not involve journal entries)
 - Record into Excel
 - Review the post these journal entries into t-accounts (Excel automation) and the calculated account balances using cell formulas in Excel.
 - Review t-account balance flow into your Excel worksheet as a trial balance. Assure validity of links within spreadsheet that expedites the process and minimize risk of an error in data entry

Exercise 3: Journal Entries



- **Step 2:** Record the adjusting entry transactions
 - Record if appropriate, (some events may not involve journal entries) into Excel
 - Review the post these journal entries into t-accounts (Excel automation) and the calculated account balances using cell formulas in Excel.
 - Review t-account balance flow into your Excel worksheet as a trial balance. Assure validity of links within spreadsheet that expedites the process and minimize risk of an error in data entry



Exercise 3: Journal Entries



- **Step 3:** Review closing entries
 - Review closing entries in your trial balance as if this were a year-end close. (Do not enter the closing entries in your t-accounts.)

Extra Slides

Exercise 3: Journal Entries

Step 4: Use SAP ERP system to make all above entries using the general ledger system in SAP.

(Instructions for using the SAP ERP system start on page 13 of this document)

- a) Accounting → Financial Accounting → General Ledger → Information System → General Ledger reports → Master Data → Chart of Accounts → Chart of Accounts (S_ALR_87012326) Examine the **GLXX** chart of accounts (**XX** is your assigned SAP student login ID#.)
- b) Accounting → Financial Accounting → General Ledger → Posting → Enter G/L Account Document (FB50) Record beginning account balances in the SAP general ledger. Enter as one composite journal entry (first journal entry). Use journal entry date of January 1. Be sure to compare to Excel spreadsheet to make sure the entries are correct.



Exercise 3: Journal Entries



Step 4: Using SAP general ledger system

c) Accounting → Financial Accounting → General Ledger → Posting → Enter G/L Account Document (FB50) Record the daily transactions for January in the SAP general ledger

- Do each journal entry as a separate entry, not as one giant composite entry,
- Use appropriate dates – this allows for a good audit trail.



Exercise 3: Journal Entries



Step 4: Using SAP general ledger system

- d) Display the trial balance. Compare this to your manual entries. If the trial balance does not match your manual entries, research the errors and make necessary corrections.

Options for viewing the journal entries:

- **Document Journal:** Information System → General Report Selection → Financial Accounting → General Ledger Reports → Document → General → Compact Document Journal → Compact Document Journal (S_ALR_87012289)
- **Source Document Drill Down:** Accounting → Financial Accounting → General Ledger → Account → Display/Change Line Items (FBL3N)
- **Line Item Journal:** Information System → General Report Selection → Financial Accounting → General Ledger Reports → Document → General → Line Item Journal → Line Item Journal (S_ALR_87012291)

Exercise 3: Journal Entries



Step 4: Using SAP general ledger system

- e) Accounting → Financial Accounting → General Ledger → Posting → Enter G/L Account Document (FB50) Record the adjusting entries.
- f) Accounting → Financial Accounting → General Ledger → Periodic Processing → Closing → Carry Forward → Balance Carryforward (New) (FAGLGVTR) Simulate closing the books as of January 31 using the SAP utility.
- **Do not** enter closing entries into the general ledger. These entries would be done automatically through the SAP month-end closing function.

Finance: 1-time Business Partners

- Customers or vendors
 - Used for rarely used, single use business partners
 - Generic 1-time master data records created (created once)
 - Unique address, etc. for each of several real 1-time partner are maintained in transaction documents
- Risks
 - Bypasses Segregation of duties between master and transaction data processing (master data not needed)
 - No credit limit – fraudulent actions possible
 - Cash outflow to alternate payees / addresses
- Controls:
 - Don't Use
 - Analyze transaction use with 1-time partners
 - Compensating controls (e.g. authorization)

