American University of Beirut
Maroun Semaan Faculty of
Engineering and Architecture

Introduction to Financial Engineering

ENMG 602

T-Accounts
[Voice over Slides Video]
(Chapter 2, Antle)

T-accounts, Debits and Creditst

- A convenient way for constructing balance sheets based on a large number of transactions is to utilize T-accounts.

- A T-account has three parts
  - Title of the account
  - A left or *debit* side
  - A right or *credit* side

T-accounts, Debits and Credits

- Debits (left-side entries) increase assets and decrease liabilities and equities.
- Credits (right-side entries) increase liabilities and equities and decrease assets.

Assets

Increase	Decrease
(Dr.)	(Cr.)

Liabilities/Equities

Decrease	Increase
(Dr.)	(Cr.)

T-accounts, Debits and Credits

- A recorded transaction involves one debit entry and a one credit entry of the same amount to two different T-accounts.
- This double-entry accounting preserves the accounting identity

  (ASSETS = LIABILIES + EQUITIES, or Dr. = Cr.).
- Knowing how to work with T-accounts is useful to answer "what-if" questions when analyzing financial statements.

Websell T-accounts

- Recall that Websell transactions were as follows:

- On January 1, owners invest $1,000 K in business
- On January 2, 2004, Websell sells $2,000 K of bonds
- On January 3, 2004, Websell purchases equipments for $300 K.

Websell T-accounts

1. On January 1, owners invest $1,000 K in business
2. On January 2, 2004, Websell sells $2,000 K of bonds
3. On January 3, 2004, Websell purchases equipments for $300 K.
4. On January 3, 2004, Websell prepays one-year rent for $75 K.
5. On January 5, 2004, Websell purchase $2 K of merchandise on credit from OfficeMax.
6. On January 5, 2004, Websell pays $1 K to OfficeMax.

Webselll T-accounts

Websell T-Accounts (amounts in thousands)

Cash

	Dr.	Cr.	
(1)	1,000	300	(3)
(2)	2,000	75	(4)
		1	(6)
	2,624		

Supplies

	Dr.	Cr.
(5)	2	
	2	

Prepaid Rent

	Dr.	Cr.
(4)	75	
	75	

Equipment

	Dr.	Cr.
(3)	300	
	300	

Accounts Payable

	Dr.	Cr.	
(6)	1	2	(5)
		1	

Bonds Payable

Dr.	Cr.	
	2,000	(2)
	2,000	

Common Stock

Dr.	Cr.	
	1,000	(1)
	1,000	

Trial Balance

- The T-accounts in a given time period are used to make a trial balance listing the debits and credits by account.
- The trial balance is then used to construct the balance sheet for the period.

Trial Balance

Websell, Inc.
Trial Balance as of January 7, 2004
(amounts in thousands)

ACCOUNT	DR.	CR.
Cash	$2,624	
Supplies	2	
Prepaid rent	75	
Equipment	300	
Accounts payable		$ 1
Bonds payable		2,000
Common stock		1,000
Totals	$3,001	$3,001

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Accounting Information System [Voice over Slides Video] (Chapter 2, Antle)

Accounting Information System

- In practice, recording a transaction to a T-account involves the following steps
  - *Analyze Transaction*. Determine if and how a transaction affects the balance sheet (i.e. determine which assets, liabilities or equities it increases or decreases).
  - *Journalize Transaction*. Record it chronologically in a journal.

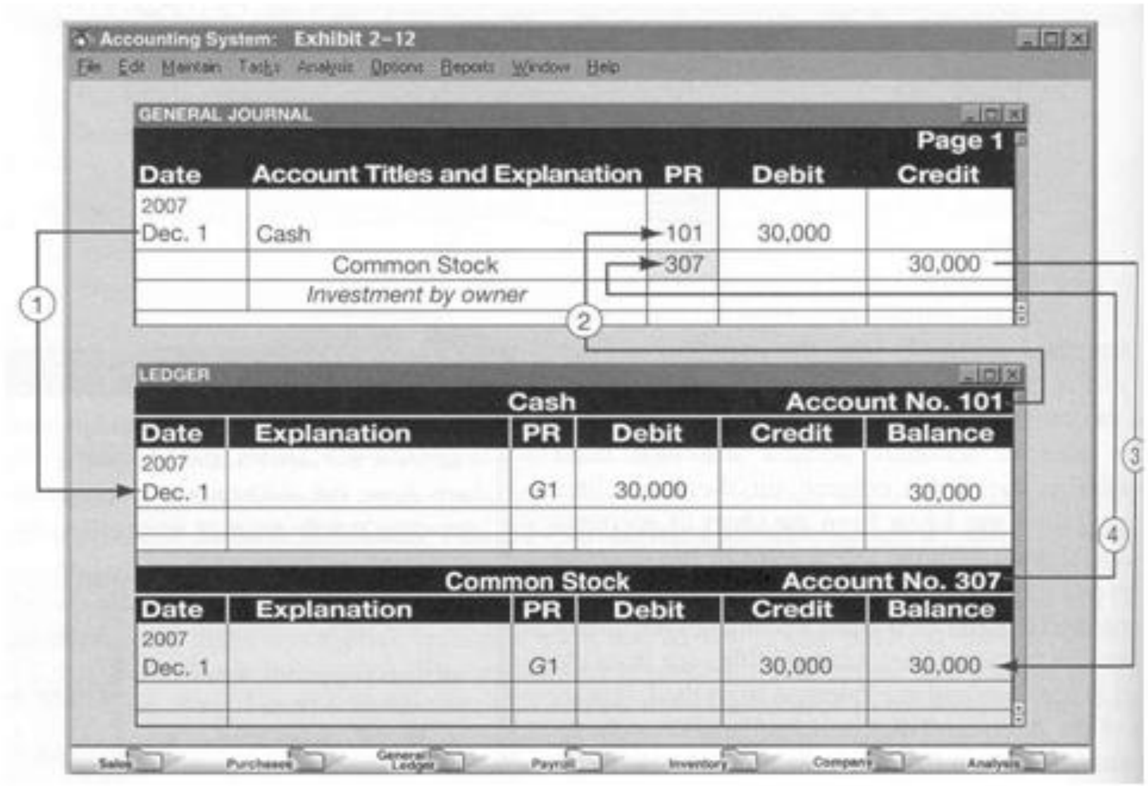
Accounting Information System

GENERAL JOURNAL

Date	Account Titles and Explanation	PR	Debit	Page 1 Credit
2007 Dec. 1	Cash		30,000	
	Common Stock			30,000
	Investment by owner.			
Dec. 2	Supplies		2,500	
	Cash			2,500
	Purchased supplies for cash.			

Accounting Information System

- Posting a transaction to a T-account (e.g., cash, common stock) transfers the information from the journal to *ledger accounts*.



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Balance Sheet Analysis [Voice over Slides Video] (Chapter 2, Antle)

Analysis Using the Balance Sheet

- Analysis using financial statements is usually done through *financial ratios.*
- One ratio based on the balance sheet is

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}}.$$

- A related measure is

$$\text{working capital} = \text{current assets} - \text{current liabilities}.$$

Analysis Using the Balance Sheet

- The current ratio is a measure of *liquidity*.

- Liquidity refers to the short-term ability of a company to pay its maturing obligations and meet unexpected needs for cash.

- For example, the current ratio can be used by a supplier to decide whether to offer a company a line of credit.

Analysis Using the Balance Sheet

- The current ratio, as well as other ratios, is useful to compare the values over several years and to compare with competitors and industry average.
- For example, Best Buy’s current ratio for the years 2005 and 2004 are 1.39 and 1.27 respectively.
- The corresponding 2005 ratios for Circuit City (a competitor) is 2.13 and that of the industry is 1.8.

Analysis Using the Balance Sheet

- Best Buy’s ratios are lower than the competitor and industry benchmark, which indicates some risk in meeting short term obligations.

- However, since Best Buy’s current ratio is significantly > 1, we conclude that the risk of loan defaulting is not too critical.

Analysis Using the Balance Sheet

- Another ratio based on the balance sheet based is

$$\text{debt-to-equity-ratio} = \frac{\text{total liabilities}}{\text{total equities}}.$$

- This ratio measures the level of debt relative to total equity.

- E.g., a debt-to-equity ratio of 2 indicates that debt holders contributed \$2 for each \$1 contributed by equity holders in the company's financing.

Analysis Using the Balance Sheet

- Since debit financing must be repaid (with interest also) this kind of financing is risky.

- Debt-to-equity-ratio ratio is a measure of *solvency*.

- Solvency reflects the ability of a company to survive over the long run.