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Principles of accounting

03 – Double-entry bookkeeping

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Contextualization of the lesson

Chapter 4 accounting rules and principles (accounting, presentation, evaluation...)

Chapter 1

Business transactions

Accounting system
identify
classify
summarize

Chapter 2

Financial statements

Recipients & decisions

Chapter 3
Double entry bookkeeping
Chart of accounts → 4 classes (assets, liabilities, costs, revenues)
Journal and Ledger → Debit and Credit

Chapter 3 – Objectives

- Understand and know how to use the different accounting tools
  - The **chart of accounts**
  - The accounting books: **journal** and **ledger**

- Understanding and know how to use the double-entry bookkeeping method:
  - **Credit and Debit**
  - Behavior of the **4 account classes**: assets, liabilities & equity, costs and revenues
  - **Accounting business transactions**

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Double entry bookkeeping

In the previous lesson we saw how to analyze business transactions and how they modify the balance sheet and income statement. Rewriting the two statements after each transaction would involve immense work, especially for companies that carry out thousands of transactions a day.

To facilitate the accountant's work, a system was developed in the 15th century to **record business transactions on a daily basis** and quickly process the financial statements at the end of the year. This method, still used today, is called **double-entry bookkeeping**. It broadly works as follows:

- At the beginning of the year, we **open a separate account for each balance sheet and income statement item** (assets, liabilities and etuity, costs and revenues) in which the transactions that concern it are recorded.
- During the year, we **record increases and decreases** caused by business transactions in each account → debit and credit
- At the end of the year, we calculate an **ending balance** for each account transfer their values into into the **income statement** and **balance sheet.**

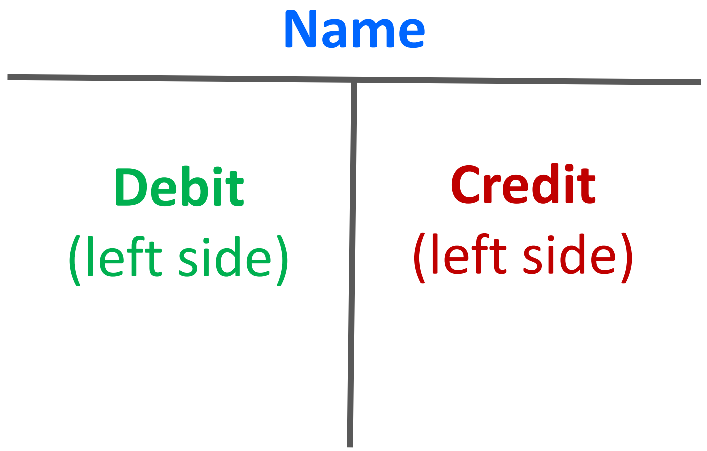
Double-entry bookkeeping: the account

The center of accounting is the **account**. It is a detailed record of all the changes occurred to a particular type of asset, liability/equity, cost or revenue and summarize their total (balance).

They can be represented as a T-shaped table: the upper section indicates the **name** (or title) of the account.

Business transactions are recorded in the two lower sections. The one on the **left** is called **Debit**, while the one on the **right** is called **Credit**. Writing an amount to the debit section is called debiting the account, writing to the credit of an account is called crediting.

The **balance** of an account is the amount remaining in an account. It is the difference between the total amounts written in Debit and Credit. It is called debit balance when the debit>credit (e.g. assets) and credit balance when the credit>debit (e.g. labilities).



Behavior of the 4 classes of accounts

The **class of an account regulates** how **increases and decreases are recorded as debit or credit**. For any account, increases are recorded on one side and decreases on the other. The rules of recording debits and credits is based on the accounting equation (assets = liabilities + equity including result so + revenues - costs) and considering that assets increase on credit and decrease on debit. As a summary:

ASSETS		+	COSTS		=	LIABILITIES & EQUITY		+	REVENUES	
debit	credit		debit	credit		debit	credit		debit	credit
+	−		+	−		−	+		−	+

Behavior of the 4 classes of accounts

Balance sheet accounts are "perma-nent" as they show the value at at a given date and **start with an opening balance** which is equal to the ending balance of the previous period (assets in debit, liabilities & equity in credit).

ASSETS	
Opening balance	
Increases	Decreases

LIABILITIES & EQUITY	
	Opening balance
Decreases	Increases

Income statement accounts are "temporary" as they relate to a given period and are thus reset to zero at the beginning of each period to calculate the result generated in the period and therefore **have no opening balance.**

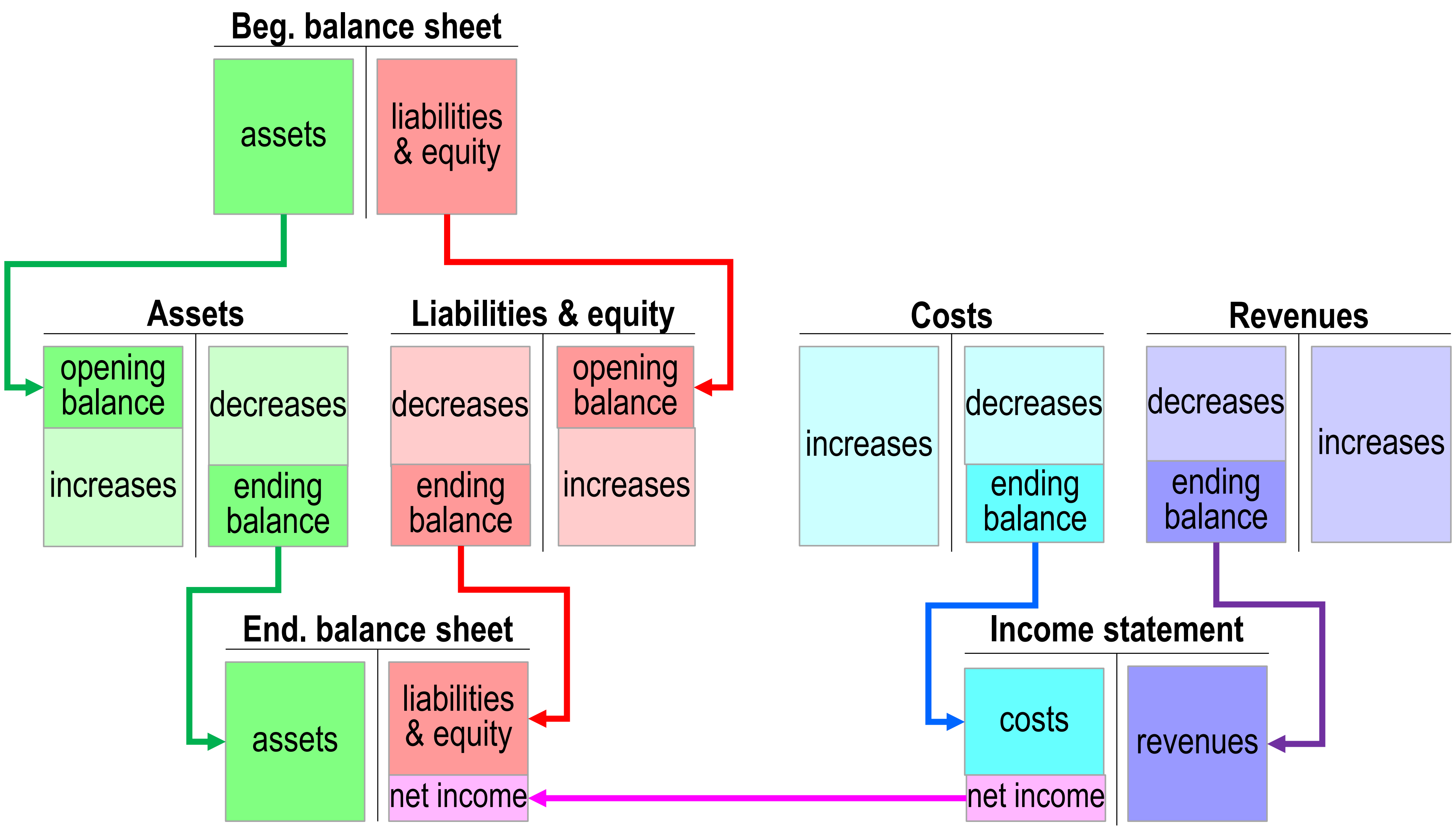
COSTS	
Increases	Decreases

REVENUES	
Decreases	Increases

Behavior of the 4 classes of accounts

At the end of the year, the **balance** of all accounts are **transferred into the ending balance sheet** (assets, liabilities & equity) **and income statement** (costs and revenues)

Net income (the balance of **income statement**) **is transferred to the balance sheet** in a annual income or loss account in equity.



Rules of double-entry bookkeeping: debit = credit

Accounting is based on a double-entry system of that records the dual effects of a transaction:

- **Each business transaction affects at least two accounts**
- The movements are **inserted in opposite sections** so that the **total amounts recorded in debit is equal to the total amount recorded in credit**

When faced with a business transaction, three questions must essentially be asked:

1. **Which accountsare affected?**
2. **How much do they increase or decrease?**
3. **The amount must be recorded in debit or credit (for that account class)?**

Accounting tools

For accounting transactions you need:

- The **chart of accounts**: the **list of all accounts** that the company uses to record transactions. Each account has a unique number associated with it.

- The **journal** in which **all the transactions** are recorded in chronological order with the date, the names of the accounts that are debited and credited and the amounts.

- The **general ledger** where **the amounts** recorded in the journal are posted for each account in the debit and credit sections. It is used to calculate the ending **balances**.

1	**Assets**	2	**Liabilities**
10	***Current assets***	*20*	***Short-term liabilities***
100	**Cash and cash equivalents**	**200**	**Accounts payable (trade creditors)**
1000	Cash	2000	Accounts payable (trade creditors)
1020	Bank	2030	Advance payments from third parties
1060	Current assets with a stock exchange price		
110	**Accounts receivable (trade receivables)**	**210**	**Short-term interest-bearing liabilities**
1100	Accounts receivable (trade receivables)	2100	Short-term bank current account
1109	Allowance for doubtful accounts	2108	Short-term mortgages
		2120	Short-term leasing commitments

Date	Description	Debit account	Credit account	Debit	Credit
02.01.2023	Invoice collection	Cash	Accounts receivable	500.00	500.00
03.01.2023	Bank deposit	Bank	Cash	400.00	400.00
05.01.2023	Payment to supplier	Accounts payable	Bank	800.00	800.00

Cash

OpB	2'000.00	400.00	03.01
02.01	500.00		

Bank

OpB	7'500.00	800.00	05.01
03.01	400.00		

Accounting tools – The chart of accounts

The **chart of accounts** is the list of all accounts used to record business transactions,. It is key because it defines what information is obtainable from the acounting system. In an attempt to standardize accounting, various standard plans have been created:

- **Swiss SME Plan (Sterchi, 1996)**
- **Sectoral plans** (often created by trade associations, e.g. hospitals, banks, public bodies...)

A good chart of accounts should:

- be **hierarchycal**, grouping the accounts in **classes**, **groups**, **accounts** and sub-accounts
- have **account numbers** formed by several digits reflecting hierarchy, where the first may be the class (1 = assets), the second the group (11 = current assets), the third the account and so on
- be **adapted** to the company reality and the sector it belongs to
- be **clear**, **pure**, **complete** and **continuous**

Accounting tools – The chart of accounts - Adaptation

While an accounting plan must be adapted to the specificities of each firm, it is useful to start from a **general reference plan**.

To ease this adaptation, some professional associations developed **sectoral plans** that consider the specificities of the sector.

These plan still needs to be **adapted to the specificities of each company,** evaluating whether to add or remove some accounts and adapt the level of detail based on company particularities and the information needs of the different accounting users.

General Chart of Accounts
(SME Chart of Accounts)

↓

Sectoral accounting plans of professional associations			
Banks and insurances	Electrical installers	Hospitals	Hotels & restaurants

↓

Individual accounting plans			
Raiffeisen	Electrasim SA	EOC Hospital	Splendide Royal Hotel

Accounting tools – The SME chart of accounts

In this course we will use,
whenever a specific chart of accounts is not provided, a **simplified version of the SME chart of accounts** which you can find on the icorsi platform.

1 Assets

10 Current assets

100 Cash and cash equivalents and current assets with a stock exchange price
1000 Cash
1020 Bank
1060 Current assets with a stock exchange price

110 Accounts receivables (trade receivables)
1100 Accounts receivables (trade receivables)
1109 Allowance for doubtful accounts

114 Other current receivables
1140 Short-term loans
1160 Receivables from shareholders
1170 Prepaid VAT 1 (on materials, goods, services and energy)
1171 Prepaid VAT 2 (on investments and other operating expenses)
1176 Withholding tax receivables
1190 Other short-term receivables

120 Inventories and non-invoiced services
1200 Inventories of commercial goods
1208 Advance payments for commercial goods
1210 Inventories of raw materials
1260 Inventories of finished products
1270 Inventories of in-process products
1280 Non-invoiced services (work in progress)

130 Accrued income and prepaid expenses
1300 Prepaid expenses
1301 Accrued income

14 Fixed assets (capital assets)

140 Financial assets
1400 Long-term securities
1440 Long-term loans
1460 Long-term loans to shareholders

148 Investments (shareholdings)
1480 Investments (shareholdings)

150 Tangible fixed assets
1500 Machinery and equipment
1509 Adjustment of machinery and equipment value
1510 Furniture and fixtures
1519 Adjustment of furniture and fixtures value
1520 Office machinery and ICT
1529 Adjustment of office machines and ICT value
1530 Vehicles
1539 Adjustment of vehicles value
1598 Advance payments for movable fixed assets
1600 Real estate
1608 Advance payments for real estate
1609 Adjustment of real estate value

170 Intangibile fixed assets
1700 Patents, know-how, licenses, rights, development
1709 Adjustment of patents, know-how, licenses, rights, development value
1770 Goodwill
1799 Adjustment of goodwill value

180 Non-paid up capital
1850 Non-paid up capital

Accounting tools - Sector chart of accounts example

Here is an extract from **chart of accounts for life insurers** from FINMA. Sector plans are more detailed, particularly for the accounts most relevant to the sector.

finma

Eidgenössische Finanzmarktaufsicht FINMA
Autorité fédérale de surveillance des marchés financiers FINMA
Autorità federale di vigilanza sui mercati finanziari FINMA
Swiss Financial Market Supervisory Authority FINMA

Chart of accounts/data entry form insurance companies
Life insurers

Balance sheet und P&L		Minimum classificati		
Level 0	Level 1	Level 2		
		ISO-FINMA Nr	Accounting Plan-Nr	ISO Name
	1 **ASSETS**	1	A1000	**Assets**
		1.1	A1010	Investments
		1.1.1	A1011	Real estate
		1.1.2	A1012	Participations
		1.1.3	A1013	Fixed income securities
		1.1.4	A1014	Loans
		1.1.5	A1015	Mortgages
		1.1.6	A1016	Equity securities
		1.1.7	A1017	Other investments
		1.2	A1020	Investments from unit-linked
		1.3	A1030	Receivables from derivative
		1.4	A1040	Deposits made under
		1.5	A1050	Cash and cash equivalents
		1.6	A1060	Insurance reserves, ceded
		1.7	A1070	Fixed assets
		1.8	A1080	Deferred acquisition costs
		1.9	A1090	Intangible assets
		1.10	A1100	Receivables from insurance
		1.11	A1110	Other receivables
		1.12	A1120	Other assets
		1.13	A1130	Unpaid share capital
		1.14	A1140	Accrued income
		1.15	A1150	Total Assets

101100000	**Investment property/Real estate held for investment**
101110000	**Residential properties**
101110100	Single-family houses
101110110	Write-downs and impairments for single-family houses
101110200	Multi-family houses
101110210	Write-downs and impairments for multi-family houses
101110300	Condominium ownership
101110310	Write-downs and impairments for condominium ownership
101120100	Office and administration buildings
101120110	Write-downs and value adjustments for office and administration buildings
101130000	**Mixed-use real estate**
101130100	Mixed-use real estate (non-attributable usage <= 30%)
101130110	Write-downs and impairments for mixed-use real estate (non-attributable
101130200	Mixed-use real estate: proportion of retail area in city centre locations
101130210	Write-downs and impairments for mixed-use real estate: proportion of reta
101140000	**Other real estate**
101140100	Property with building lease agreement (granting)
101140110	Write-downs and impairments for property with building lease agreement
101140200	Property with building lease agreement (assuming)
101140210	Write-downs and impairments for property with building lease agreement
101140300	Various real estate properties
101140310	Write-downs and impairments for various real estate properties
101150100	Real estate under construction
101150110	Impairments for real estate under construction
101160100	Building land
101160110	Value adjustments for building land

Accounting tools – The journal

The journal **records business transactions in chronological order**. It also provides a complete record of each transaction that contains at least the **date**, the **account(s) to be debited**, the **account(s) to be credited** and the **debit and credit amount(s)**.

To facilitate the comprehensibility and verifiability of accounting, a brief description of the transaction and the identification of the source documents are often also included.

Date	Source doc.	Description	Debit account	Credit account	Debit	Credit
02.01.2023	0001	Invoice collection on cash, #SO3002, X SA	Cash	Accounts receivable	500.00	500.00
03.01.2023	0002	Deposit of cash on bank account	Bank	Cash	400.00	400.00
05.01.2023	0003	Payment to supplier, #PO4012, Y SA	Accounts payabe	Bank	800.00	800.00

Accounting tools – The ledger

The **ledger** is the **collection of all the accounts**. The amounts recorded in the journal are copied (posted) in the debit and credit sections of the respective accounts. This alllows to keep track of the developments of each single account and calculate its balance. At a minimum, each account has a header and the two debit and credit sections, but in practice it can present other details like reference to the journal entry, source documents and keep a running balance.

1000 Cash	
OB) …	
2.1) 500	3.1) 400

1020 Bank	
OB) …	
3.1) 400	5.1) 800

1100 Accounts receivable	
OB) …	
	2.1) 500

2000 Accounts payable	
	OB) …
5.1) 800	

Note: OB = Opening balance

Phases of bookkeeping – The accounting cycle

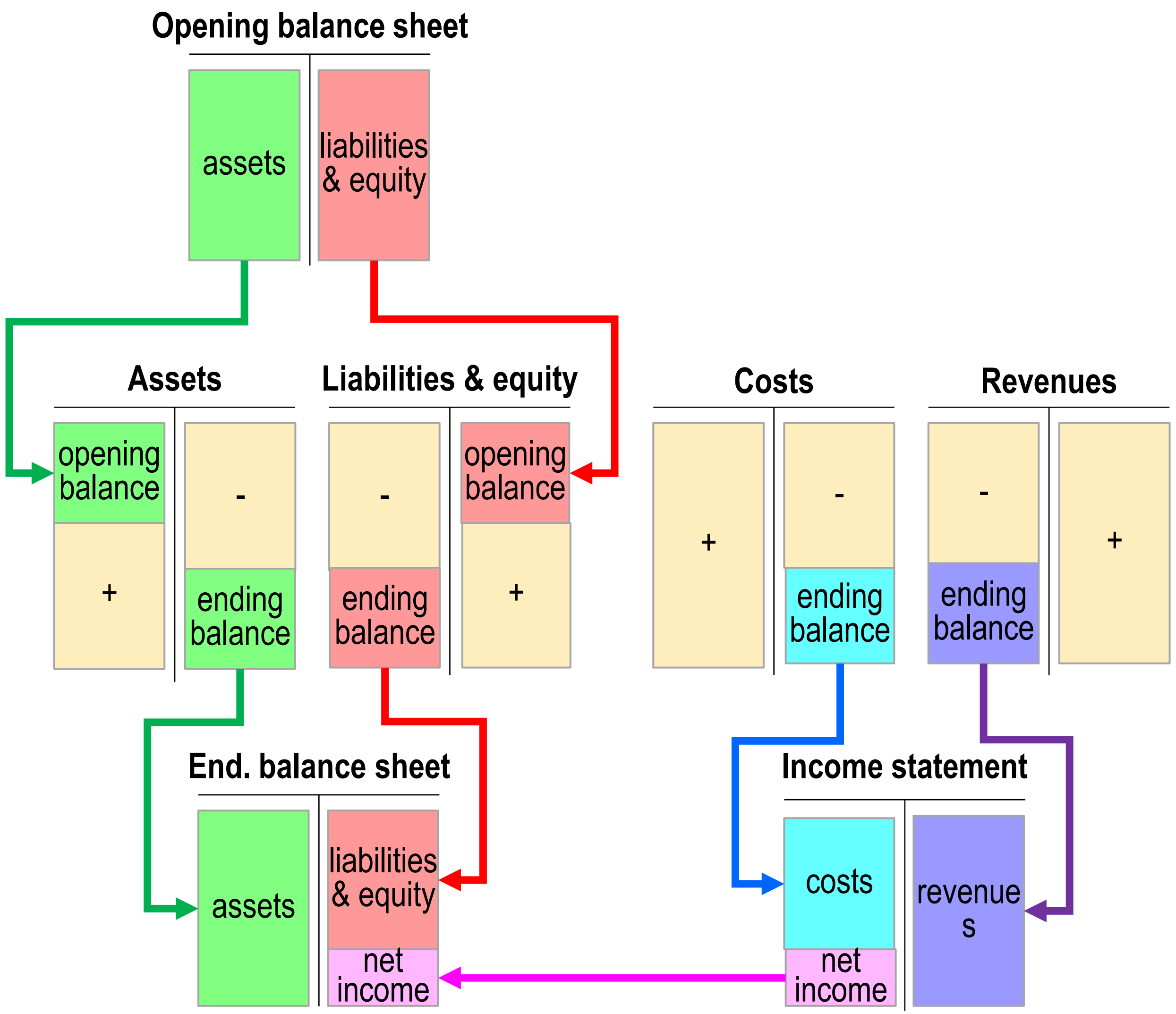
1. **Open the accounts** at beginning of period, posting the opening balance of the balance sheet accounts
   → assets ¦ balance sheet, balance sheet ¦ liabilities & equity

2. **Record the business transactions** during the period
   → What accounts? How much Increase/decrease? In debit/credit?

3. **Record the closing operations** to comply with acc. norms
   → What accounts? How much Increase/decrease? In debit/credit?

4. **Prepare the income statement** by transferring the balances of costs and revenues accounts to the income statement
   → income statement ¦ costs, revenues ¦ income statement

5. **Prepare of the balance sheet** by transferring the balances of assets, liabilities, equity and net income to balance sheet
   → balance sheet ¦ assets, liabilities & equity ¦ balance sheet
   → income statement ¦ balance sheet (if income, viceversa if loss)



Phases of bookkeeping – 1 Opening accounts

1. Opening of accounts based on the initial balance sheet:

Debit account	Credit account	Debit	Credit
Cash		50	
Accounts receivable		250	
Inventoires of goods		300	
Furniture		400	
	Opening balance sheet		1000
Opening balance sheet		1000	
	Accounts payable		280
	Bank		120
	Basic capital		600

Account	Debit	Credit
Cash	50	
Accounts payable		280
Accounts receivable	250	
Bank		120
Inventories of goods	300	
Furniture	400	
Basic capital		600
Costs of goods		
Annual income		
Salaries		
Revenues		
Rent		
Depreciation		

Phases of bookkeeping – 2 & 3 Reconding transactions

2.Customer payment to bank account 80

Debit account	Credit account	Debit	Credit
Bank	Accounts receivable	80	80

3. Purchase of goods on credit: 250 pieces for CHF 3.00 each

Debit account	Credit account	Debit	Credit
Inventories of goods	Accounts payable	750	750

4. Payment to suppliers from the bank accoung: 600

Debit account	Credit account	Debit	Credit
Accounts payable	Bank	600	600

5. Sale of goods on credit: 280 pieces at fr . 4 each

Debit account	Credit account	Debit	Credit
Accounts receivable	Revenues	1120	1120
Costs of goods	Inventory of goods	840	840

Cash	
50	

PFP debts.	
600	280
	750

Accounts receivable	
250	80
1120	

Bank	
80	120
	600

Inventories of goods	
300	840
750	

Furniture	
400	

Basic capital	
	600

Costs of goods	
840	

Annual income	

Salaries	

Revenues	
	1120

Rent costs	

Depreciation	

Phases of bookkeeping – 2 & 3 Reconding transactions

6. Customer payments to bank account, 1000

Debit account	Credit account	Debit	Credit
Bank	Accounts receivable	1000	1000

7. Payment of salaries with bank account, 150

Debit account	Credit account	Debit	Credit
Salaries	Bank	150	150

8. Payment of rent with bank account, 30

Debit account	Credit account	Debit	Credit
Rent costs	Bank	30	30

9. Depreciation of fixed assets, 20%

Debit account	Credit account	Debit	Credit
Depreciation	Furniture	80	80

Cash	
50	

PFP debts.	
600	280
	750

Accounts receivable	
250	80
1120	**1000**

Bank	
80	120
1000	600
	150
	30

Inventories of goods	
300	840
750	

Furniture	
400	**80**

Basic capital	
	600

Costs of goods	
840	

Annual income	

Salaries	
150	

Revenues	
	1120

Rent costs	
30	

Depreciation	
80	

Phases of bookkeeping – 4 & 5 Closing accounts

Transfer costs & revenues to income statement

Debit account	Credit account	Debit	Credit
Income statement	Costs of goods	840	840
Income statement	Salaries	150	150
Income statement	Rent costs	30	30
Income statement	Depreciation	80	80
Revenues	Income Statement	1120	1120

Transfer of net income to balance sheet

Debit account	Credit account	Debit	Credit
Income statement	Annual income	20	20

Transfer of assets & liabilities to balance sheet

Debit account	Credit account	Debit	Credit
Balance sheet	Cash	50	50
Balance sheet	Bank	180	180
Balance sheet	Accounts receivable	290	290
Balance sheet	Balance sheet	210	210
Balance sheet	Furniture	320	320
Accounts payable	Balance sheet	430	430
Basic capital	Balance sheet	600	600
Annual income	Balance sheet	20	20

Cash

Debit	Credit
50	
	Bal 50

Accounts payable

Debit	Credit
600	280
Bal 430	750

Accounts receivable

Debit	Credit
250	80
1120	1000
	Bal 290

Bank

Debit	Credit
80	120
1000	600
	150
	30
	Bal 180

Inventories of goods

Debit	Credit
300	840
750	**Bal 210**

Furniture

Debit	Credit
400	80
	Bal 320

Basic capital

Debit	Credit
	600
Bal 600	

Costs of goods

Debit	Credit
840	
	Bal 840

Annual income

Debit	Credit
	20
Bal 20	

Salaries

Debit	Credit
150	
	Bal 150

Revenues

Debit	Credit
	1120
Bal 1120	

Rent costs

Debit	Credit
30	
	Bal 30

Depreciation

Debit	Credit
80	
	Bal 80

Income statement

Costs of goods	840	Revenues	1120
Salaries	150		
Rent costs	30		
Depreciation	80		
Net income	**20**		

Balance

Cash	50	Accounts pay.	430
Bank	180	Basic capital	600
Accounts rec.	290	Annual income	20
Inventories	210		
Furniture	320		
Total assets	**1050**	**Total liabilities**	**1050**

Accounting software

To ease bookkeeping, there are accounting software that automate phases like posting from the jounral to the ledger, calculating end balances and prepa-ring the financial statements.

The user typically only needs to define the chart of accounts and make the accounting entries in the journal.

Chart of accounts

↓

Journal

↓

Ledger

↓

Financial statement

	Section	Group	Account	Description	BClass	Sum In	Opening	Balance CHF
5			1000	Cash	1	100	50.00	50.00
6			1020	Bank	1	100	-120.00	180.00
7			1060	Current listed securities	1	100		
8		**100**		**Cash, cash equivalents and current listed securities**		**10**	**-70.00**	**230.00**
9								
10			1100	Accounts receivable (trade receivables)	1	110	250.00	290.00
11			1109	Allowance for doubtful accounts	1	110		
12		**110**		**Accounts receivable (trade receivables)**		**10**	**250.00**	**290.00**

	Doc	Debit A/C	Debit A/C Des.	Credit A/C	Credit A/C Des.	Amount CHF
1	2	1020	Bank	1100	Accounts receivable (trade receivables)	80.00
2	3	1200	Inventories of commercial goods	2000	Accounts payable (trade creditors)	750.00
3	4	2000	Accounts payable (trade creditors)	1020	Bank	600.00
4	5	1100	Accounts receivable (trade receivables)	3200	Revenues from resale of goods	1'120.00
5	5	4200	Costs of goods sold	1200	Inventories of commercial goods	840.00
6	6	1020	Bank	1100	Accounts receivable (trade receivables)	1'000.00
7	7	5000	Salaries	1020	Bank	150.00
8	8	6000	Rent costs	1020	Bank	30.00
9	9	6800	Depreciation	1510	Furniture	80.00

1020 Bank

	Doc	Description	C-Acct.	Debit CHF	Credit CHF	Balance CHF
1		Initial balance				-120.00
2	2	Customer payment	1100	80.00		-40.00
3	4	Payment to supplier	2000		600.00	-640.00
4	6	Customer payment	1100	1'000.00		360.00
5	7	Payment of salaries	5000		150.00	210.00
6	8	Payment of rent	6000		30.00	180.00
7		**Total transactions**		**1'080.00**	**780.00**	**180.00**

ASSETS	31.12.2024
Cash	50.00
Bank	180.00
Accounts receivable (trade receivables)	290.00
Inventories of commercial goods	210.00
Furniture	320.00
TOTAL ASSETS	1'050.00