ENTREPRENEURSHIP
for Computer Science and Engineering

Lecture 7:

Financial Intelligence

(Part 1: Financial Accounting)

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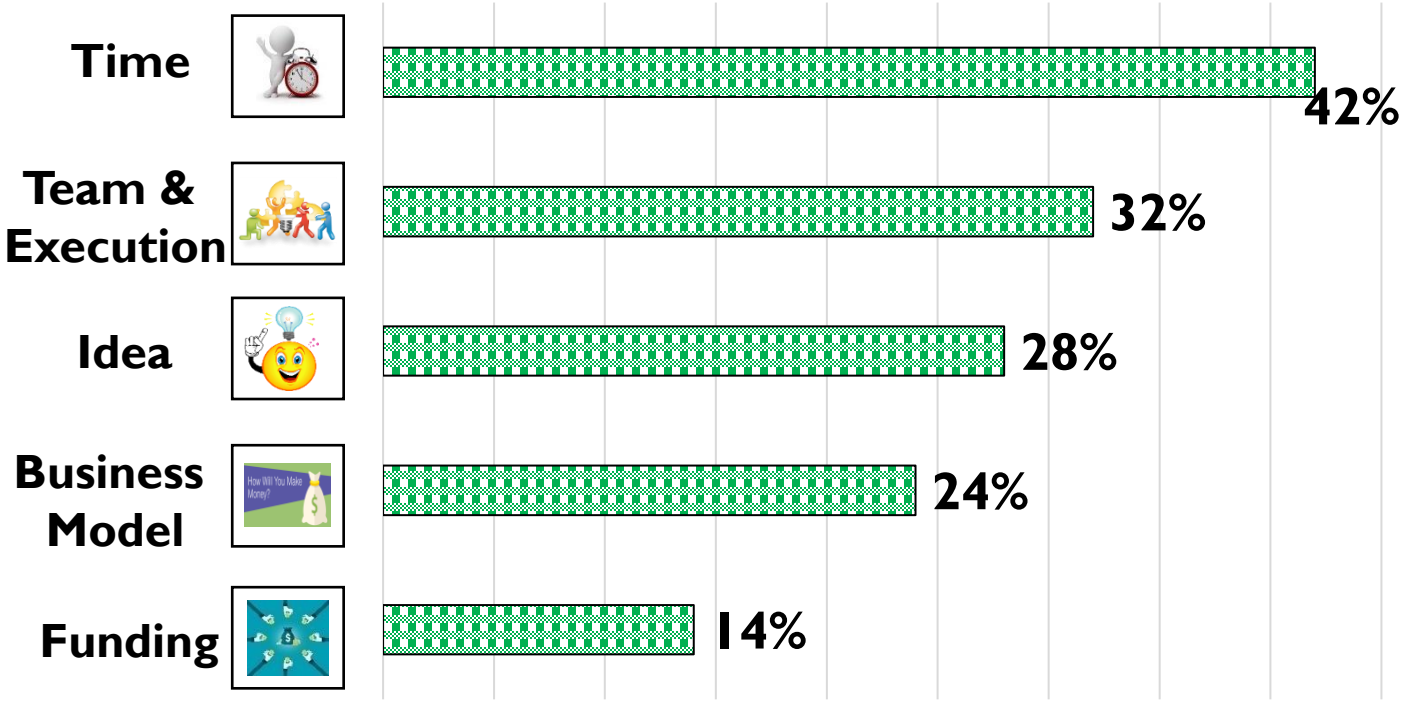
Outline

- Last Session:
  - Calculate the Cost of Customer Acquisition (CoCA)
- This lecture
  - Types of Accounting
  - Financial statements
    - Income statement, retained earnings, balance sheet, and cash flow statement
  - The Depreciation and Amortization Processes
  - Interpreting Financial Statements
  - Bookkeeping
- Announcements:
  - Course website: *https://www.m-zakeri.ir/Entrep/*
  - My lab: *https://www.m-zakeri.ir/lab*
  - Book template:
    - *https://github.com/m-zakeri/Entrep/tree/main/docs/assignments/book*

Recap: What makes startups succeed?

- Factors of success



Factors of success across more than 200 companies

[Based on a study by IdeaLab]

https://www.idealab.com/

Why Financial Intelligence?

- **Finance** and **accounting** together make the language of business.
- They allow you to answer basic questions, alongside *controlling*, *evaluating*, and *planning* operations
  - What does my company own?
  - How much does it owe others?
  - How well did (or will) its operations go?
  - How does it (or should) get the cash to fund itself?
- You need to be able to **interpret** at least *core financial statements*, which will enable you to control, evaluate, and plan operations accordingly
  - We will refer to this process as *financial intelligence (accounting)*
  - **Financial accounting** is a branch of accounting concerned with the summary, analysis, and reporting of financial transactions related to a business.

Types of (Financial) Accounting

- Two types of accounting

Types of Accounting

- There are two types of accounting:
  1. Accrual accounting
     - It captures *business activities* irrespective of *cash movement*
     - More precisely, transactions are recorded when activities are performed.
     - *E.g.*, HP sold your startup a rack of servers in March 2019, but your startup will pay HP in February 2020.
       - HP will record the sale (as ***accounts receivable***), match it against its related cost, and compute the profit/loss in 2019, although it will receive the money from you in 2020.
       - Your startup will record the sale (as ***accounts payable***) and *accrue* (or *allocate*) the cost of the rack over its useful time.

Types of Accounting

- There are two types of accounting:
  - 2. Cash basis accounting
    - It captures *cash movement* without regard to *business activities*
    - More precisely, transactions are recorded *only* when cash changes hands
      - Anytime you get cash from a customer, you call that *revenue*, even if the product or service is not delivered at that time
      - Anytime you spend cash, you call that *expense*
        - *E.g.*, If you pay a 2-year rent in 2019, all the rent costs will be recorded as an expense in 2019 and NOT over a period of 2 years.

Example: Cash Basis Accounting

- Month 1:
  - You offer a service to a customer where the cost to you is $100.

	Month 1	Month 2	Month 3	Month 4
Revenue				
Expenses	$100			
Profit				
Cash				

Example: Cash Basis Accounting

- Month 1:
  - You offer a service to a customer where the cost to you is $100.
  - The customer pays you $200 for your service.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200			
Expenses	$100			
Profit				
Cash				

Example: Cash Basis Accounting

- Month 1:
  - You offer a service to a customer where the cost to you is $100.
  - The customer pays you $200 for your service.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200			
Expenses	$100			
Profit	200-100= $100			
Cash				

Example: Cash Basis Accounting

- Month 1:
  - You offer a service to a customer where the cost to you is $100.
  - The customer pays you $200 for your service.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200			
Expenses	$100			
Profit	200-100= $100			
Cash	$100			

This can be viewed as an oversimplified "**Income Statement**" (with no taxes, no debt, no interest, etc.), *one of the three core financial statements*

Example: Cash Basis Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200			
Expenses	$100	$200		
Profit	200-100= $100			
Cash	$100			

Example: Cash Basis Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$0		
Expenses	$100	$200		
Profit	200-100= $100			
Cash	$100			

Example: Cash Basis Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$0		
Expenses	$100	$200		
Profit	200-100= $100	-$200		
Cash	$100			

Example: Cash Basis Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$0		
Expenses	$100	$200		
Profit	200-100= $100	-$200		
Cash	$100	100-200=$-100		

Example: Cash Basis Accounting

- Month 3:
  - You received $400 from the customer you offered the service to last month.
  - You receive $200 in advance from a customer that you have to offer a service to next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$0	400+200=$600	
Expenses	$100	$200	$0	
Profit	200-100= $100	-$200	$600	
Cash	$100	100-200=$-100	-100+600=$500	

Example: Cash Basis Accounting

- Month 4:
  - You offer your service to the customer who paid you last month.
  - The service costed you $100.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$0	400+200=$600	$0
Expenses	$100	$200	$0	$100
Profit	200-100= $100	-$200	$600	$-100
Cash	$100	100-200=$-100	-100+600=$500	500-100=$400

Profitable *Non-Profitable* *Profitable* *Non-Profitable*

The business is steadier than what the above seems to imply!

Example: Accrual Accounting

- Month 1:

	Month 1	Month 2	Month 3	Month 4
Revenue				
Expenses				
Profit				
Cash				
Accounts Receivable				
Deferred Revenue				

Money that you will receive in the future for a service/product that you have already delivered.

Example: Accrual Accounting

- Month 1:

	Month 1	Month 2	Month 3	Month 4
Revenue				
Expenses				
Profit				
Cash				
Accounts Receivable				
Deferred Revenue				

Money that you have received in advance for a service/product that you will deliver in the future.

Example: Accrual Accounting

- Month 1:
  - You offer a service to a customer where the cost to you is $100.
  - The customer pays you $200 for your service.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200			
Expenses	$100			
Profit	200-100 = $100			
Cash	$100			
Accounts Receivable	$0			
Deferred Revenue	$0			

Example: Accrual Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

Even though the customer did not pay you!

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400		
Expenses	$100	$200		
Profit	200-100 = $100			
Cash	$100			
Accounts Receivable	$0	$400		
Deferred Revenue	$0			

Example: Accrual Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400		
Expenses	$100	$200		
Profit	200-100 = $100	400-200 = $200		
Cash	$100	100-200 = $-100		
Accounts Receivable	$0	$400		
Deferred Revenue	$0			

Example: Accrual Accounting

- Month 2:
  - You offer a service to a customer where the cost to you is $200.
  - You and the customer agree that they can pay you $400 next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400		
Expenses	$100	$200		
Profit	200-100 = $100	400-200 = $200		
Cash	$100	100-200 = $-100		
Accounts Receivable	$0	$400		
Deferred Revenue	$0	$0		

Example: Accrual Accounting

- Month 3:
  - You receive $400 from the customer you offered the service to last month.
  - You receive $200 in advance from a customer that you have to offer a service to next month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	
Expenses	$100	$200	$0	
Profit	200-100 = $100	400-200 = $200	$0	
Cash	$100	100-200 = $-100	-100+400+200= $500	
Accounts Receivable	$0	$400	$0	
Deferred Revenue	$0	$0	$200	

This is more of a liability; therefore, it is not recorded as revenue.

Money that you have received in advance for a service/product that you will deliver in the future.

Example: Accrual Accounting

- Month 4:
  - You offer your service to the customer who paid you last month.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	
Profit	200-100 = $100	400-200 = $200	$0	
Cash	$100	100-200 = $-100	-100+400+200= $500	
Accounts Receivable	$0	$400	$0	
Deferred Revenue	$0	$0	$200	

Example: Accrual Accounting

- Month 4:
  - You offer your service to the customer who paid you last month.
  - The service costed you $100.

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable	$0	$400	$0	$0
Deferred Revenue	$0	$0	$200	$0

The **profits** better reflect the business's activities!

Net Income

- Net Income is the excess of revenues over expenses.

Revenue	$10,000
Expenses	3,000
Net income	$ 7,000

Financial Statements

- Financial reports are crucial for entrepreneurs because they track how your business is performing.
- They can help you make **informed decisions** about the future of your company and show you how to become more efficient.
- Four components of financial statements:
  - **Income Statement**
  - **Balance Sheet**
  - **Cash Flow Statement**
  - **Retained earnings (changes in equity)**

Financial Statements صورت‌های مالی

- **Income Statement سود و زیان:** An income statement shows the *revenue*, *expenses*, and ultimately the amount of ***profit*** or loss generated by a business, for a *specific reporting period*.
- **Balance Sheet ترازنامه:** The balance sheet reports a business's assets, liabilities, and equity at a specific point in time.
  - A company owns and what it owes on a single day/month/year.
- **Cash Flow Statement جریان وجوه نقد:** Your **cash** flow statement offers a summary of the cash and **cash** equivalents coming into and going out of your business.
- **Retained earnings (changes in equity) سود انباشته :** It shows how the distribution of income and transfer of *dividends* سود سهام affects the wealth of shareholders in the company.
  - Profits of previous years that are accumulated till the current period.

Notes to Financial Statements

- Provide additional information not included in the body of statements.
- Does not have to be numeric.
- Examples:
  - Description of accounting policies or explanation of uncertainties and contingencies.
  - Statistics and voluminous details.

The Balance Sheet

- The balance sheet presents:
  - The *assets* owned by your company
  - The *liabilities* owed to others
  - And the accumulated investment of the owners (*i.e.*, *owners' equity*)
- A standard company balance sheet has two sides:
  - Assets on the **left**,
  - Financing on the **right**–which itself has two parts:
    - Liabilities and Ownership Equity.
- As its name implies, the *balance sheet* is a "balance" sheet, where:
  - Assets (A) = Liabilities (L) + Owner's Equity (OE)

The Balance Sheet

- Assets are the resources that the company possesses for future benefits.
  - Examples:
    - Cash
    - Inventory
    - Accounts receivable
    - Equipment
    - Buildings

The Balance Sheet

- Liabilities are dollar-specific obligations to pay or repay, and other commitments to provide products or services to others.
  - Examples:
    - Bank debt
    - Accounts payable (*i.e.*, amount owed to suppliers)
    - Prepaid accounts or "deferred revenues" (*i.e.*, advances from customers to deliver products or services)
    - Taxes owed (or *taxes payable*)
    - Wages owed to employees (or *wages payable*) دستمزدهای معوقه

The Balance Sheet

- Owner's equity is the accumulated dollar measure of the investments made by the owners in the company
  - Examples (*more on these later*)
    - Common stock سهام عادی
    - Paid-in-capital (*i.e.*, the funds raised by the company from equity and not from ongoing operations)
    - Retained earnings *(i.e.*, reinvestment of earnings)

- As its name implies, the *balance sheet* is a "balance" sheet, where:
  - Assets (A) = Liabilities (L) + Owner's Equity (OE)

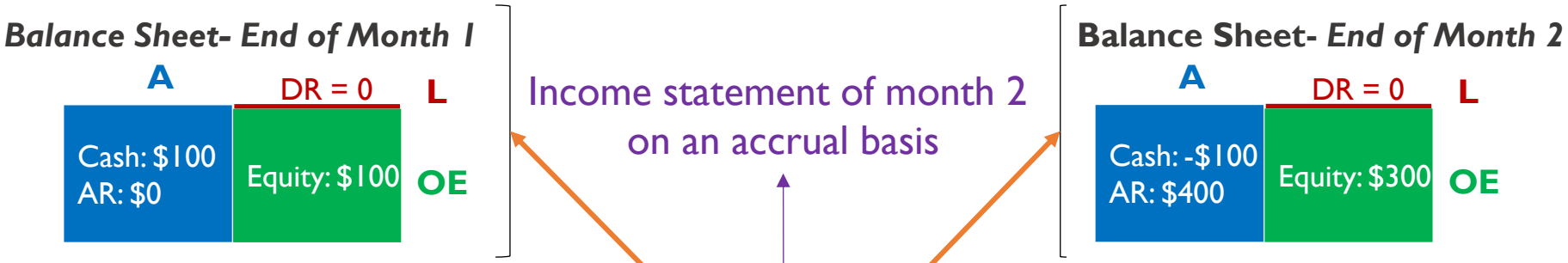
Sample Small Business Balance Sheet

- https://en.wikipedia.org/wiki/Balance_sheet
- https://www.codal.ir/

Assets (current)		Liabilities and Owners' Equity		
Cash	$6,600	***Liabilities***		
Accounts Receivable	$6,200	Notes Payable	$5,000	
Assets (fixed)		Accounts Payable	$25,000	
Tools and equipment	$25,000	*Total liabilities*		$30,000
		Owners' equity		
		Capital Stock	$7,000	
		Retained Earnings	$800	
		Total owners' equity		$7,800
Total	**$37,800**	*Total*		**$37,800**

A Toy Example

- The balance sheet:

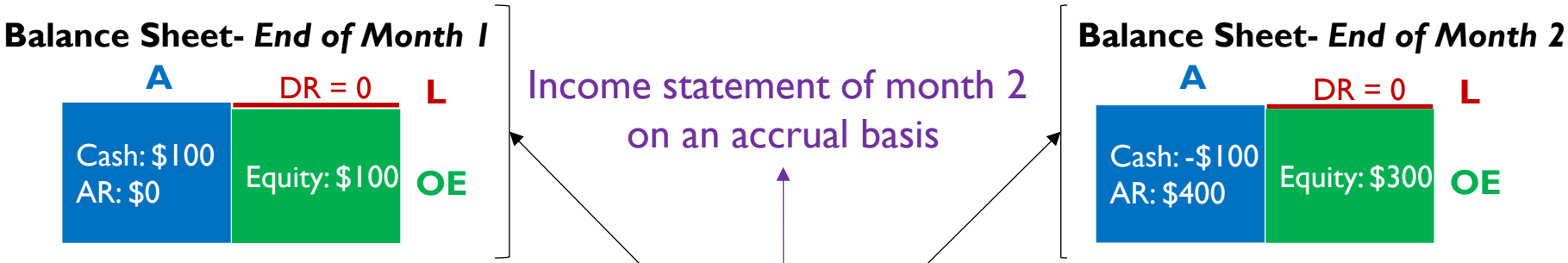


	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = Liabilities (L) + Owner's Equity (OE)

A Toy Example

- The balance sheet:



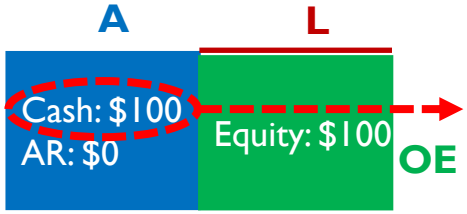
	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400

The ***balance sheet*** is a snapshot of a company's holdings ***at a given time***, while the ***income statement*** shows the "flow" of activities and transactions ***over a specific period of time***.

Assets (A) = Liabilities (L) + Owner's Equity (OE)

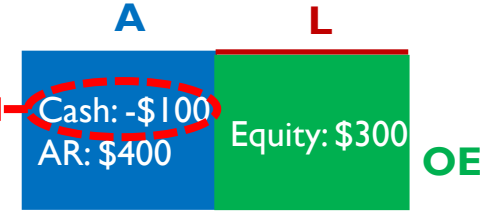
A Toy Example

Balance Sheet- *End of Month 1*



Cash went from positive to negative, although we made a profit of $200!

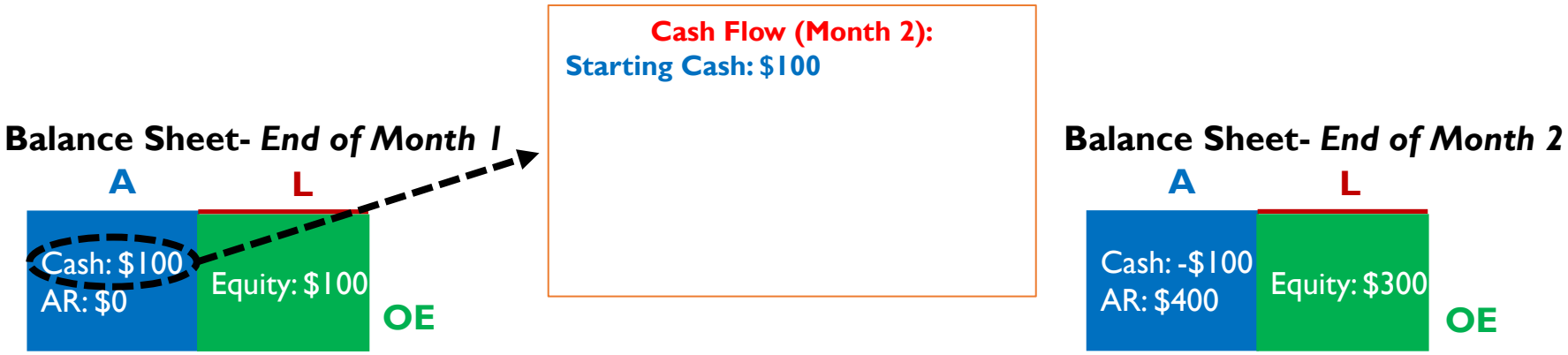
Balance Sheet- *End of Month 2*



	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

- How can we lose $200 in cash, although we made a profit of $200?
- How can we ***reconcile*** the fact that we got $200 in income with the fact that we lost $200 in cash?
- This reconciliation is done via the ***cash flow statement***.

A Toy Example



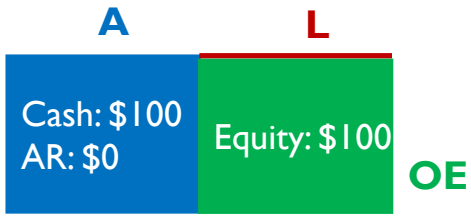
	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = *Liabilities (L)* + *Owner's Equity (OE)*

A Toy Example

Cash Flow (Month 2):
Starting Cash: $100
Net Income: $200

Balance Sheet- *End of Month 1*

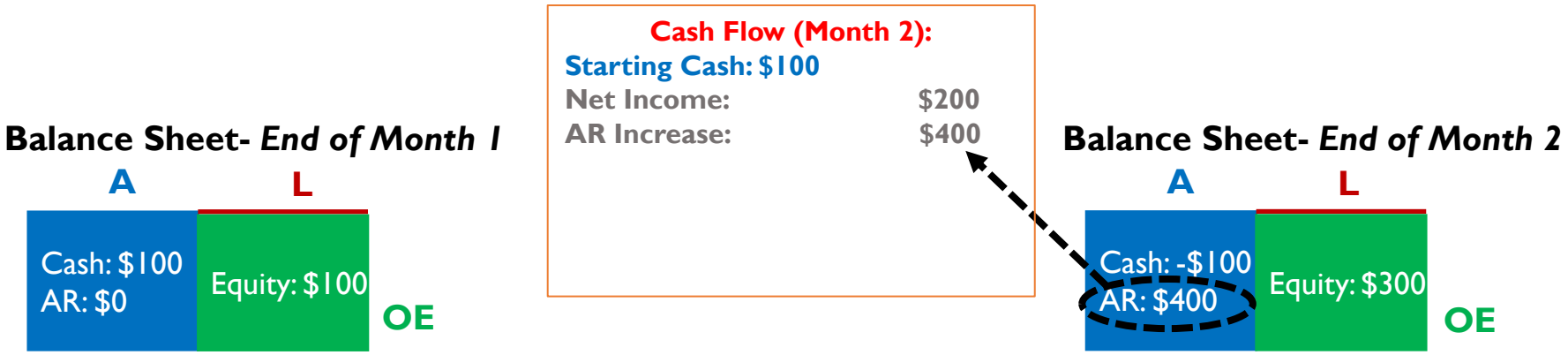


Balance Sheet- *End of Month 2*

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = Liabilities (L) + Owner's Equity (OE)

A Toy Example

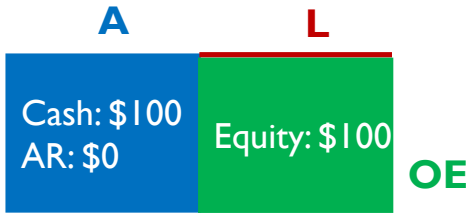


	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = *Liabilities (L)* + *Owner's Equity (OE)*

A Toy Example

Balance Sheet- *End of Month 1*

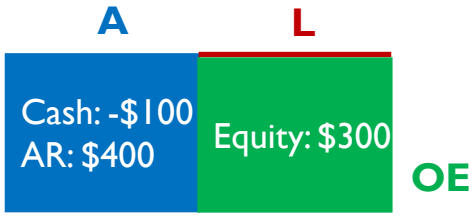


Cash Flow (Month 2):

Starting Cash: $100

Net Income:	$200
AR Increase:	$400
Cash from Operations:	**-$200**

Balance Sheet- *End of Month 2*

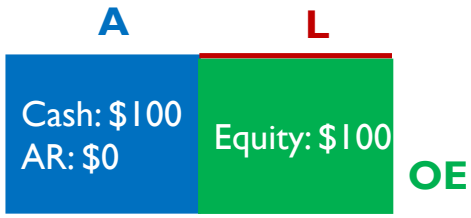


	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = *Liabilities (L)* + *Owner's Equity (OE)*

A Toy Example

Balance Sheet- *End of Month 1*



Cash Flow (Month 2):
Starting Cash: $100
Net Income: $200
AR Increase: $400

Cash from Operations: -$200
Ending Cash: -$100

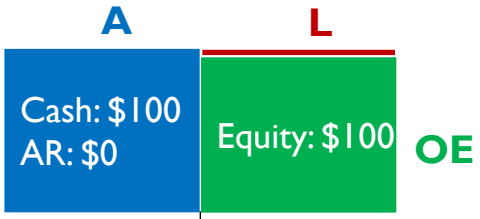
Balance Sheet- *End of Month 2*

	Month 1	Month 2	Month 3	Month 4
Revenue	$200	$400	$0	$200
Expenses	$100	$200	$0	$100
Profit	200-100 = $100	400-200 = $200	$0	$100
Cash	$100	100-200 = $-100	-100+400+200= $500	500-100=$400
Accounts Receivable (***AR***)	$0	$400	$0	$0
Deferred Revenue (***DR***)	$0	$0	$200	$0

Assets (A) = Liabilities (L) + Owner's Equity (OE)

Summary of the Three Financial Statements

Balance Sheet- ***End of Month 1***



Demonstrates "balances" as of a specific date

Cash Flow (Month 2):

Starting Cash: $100

Net Income:	$200
AR Increase:	$400
Cash from Operations:	-$200
Ending Cash: -$100	

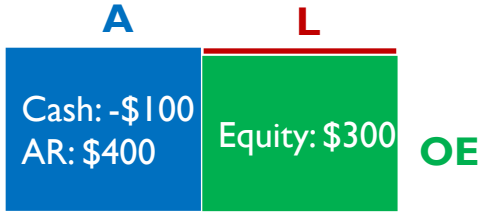
Income Statement (Month 2):

Revenue:	$400
Expenses:	$200
Income:	$200

Demonstrates how changes in income and balance sheet accounts affect cash

Demonstrates the flow of activities over a specific period (e.g., a month)

Balance Sheet- ***End of Month 2***

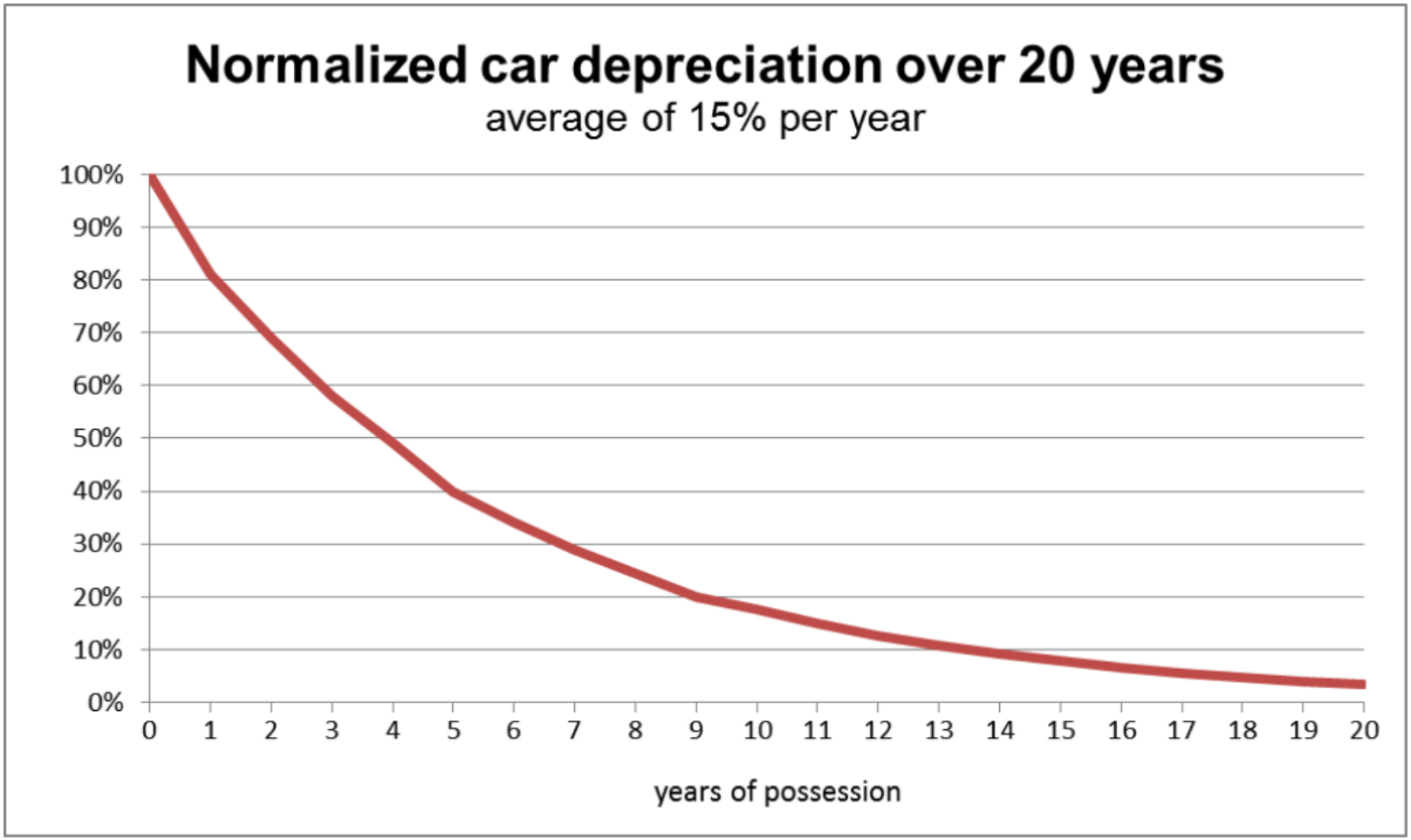


Assets (A) = Liabilities (L) + Owner's Equity (OE)

The Depreciation Process

- In accountancy, **depreciation** is any method of allocating such net cost to those periods in which the organization is expected to benefit from the use of the asset.
- Depreciation is the process of **deducting the cost** of **an asset** over its useful life.
- Assets are sorted into different classes, and each has its own **useful life**.

The Depreciation Process



The Depreciation Process

- A toy example
- Assume that:
  - You have bought a car for $30K to use it as a taxi under Uber
  - The car has a useful life of 3 years, after which you have to buy another one (say, again for $30K)
  - You have also hired a driver to drive the car, who will cost you $50K **every year.**
  - You come up with a steady revenue of $70K **per year.**

The Depreciation Process

A series of 1-year ? statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue										
Driver Expense										
Cost of the Car										
Operating Profit										

The Depreciation Process

A series of 1-year income statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue										
Driver Expense										
Cost of the Car										
Operating Profit										

The Depreciation Process

A series of 1-year income statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense										
Cost of the Car										
Operating Profit										

The Depreciation Process

A series of 1-year income statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Cost of the Car										
Operating Profit										

The Depreciation Process

A series of 1-year income statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Cost of the Car	30K	0	0	30K	0	0	30K	0	0	30K
Operating Profit										

The Depreciation Process

A series of 1-year income statements

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Cost of the Car	30K	0	0	30K	0	0	30K	0	0	30K
Operating Profit	-10K	20K	20K	-10K	20K	20K	-10K	20K	20K	-10K

- The business is steadier than what the above seems to imply (you lose money every three years, which might entail that something strange is going on)!
- This problem can be addressed via *depreciating* (i.e., *spreading*) the cost of the car over its lifetime

The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

By the end of year 1, the car is 10K worth less

The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

By the end of year 2, the car is also 10K worth less…

The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

- This is called **straight-line depreciation** استهلاک خط مستقیم, as it is computed by dividing 30K/3
- You can apply other types of depreciation where you can (for example) depreciate faster in the first year than in later years (this method is referred to as **accelerated depreciation**).

The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

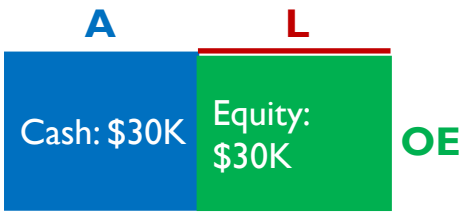
How does depreciation impact the **balance sheet**?

The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Balance Sheet-

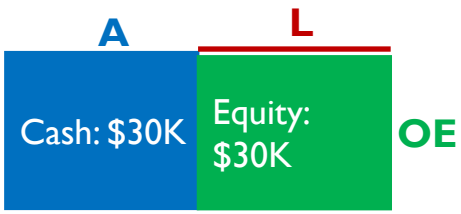
At the beginning of Year 1



The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Balance Sheet-
At the beginning of Year 1

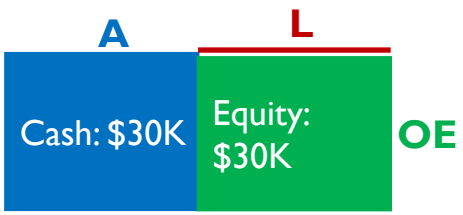


Balance Sheet-
At the end of Year 1

The Depreciation Process

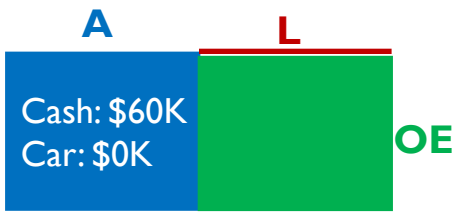
YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Balance Sheet-
At the beginning of Year 1



Balance Sheet-
At the end of Year 1

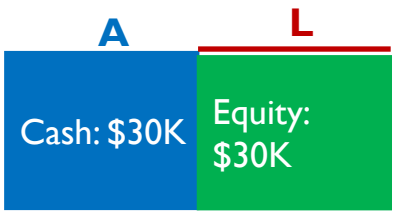
Balance Sheet-
At the end of Year 3



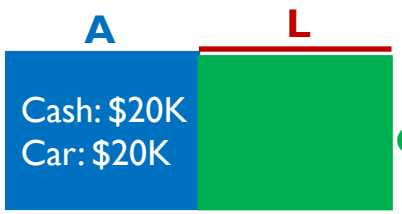
The Depreciation Process

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

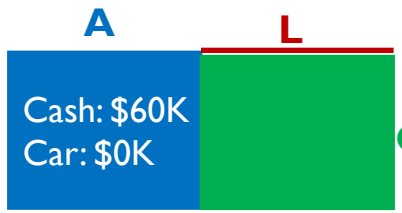
Balance Sheet-
At the beginning of Year 1



Balance Sheet-
At the end of Year 1



Balance Sheet-
At the end of Year 3



Balance Sheet-
At the beginning of Year 4

The Depreciation Process

- A toy example of a **cash flow statement**

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

How does depreciation impact the **cash flow statement**?

The Depreciation Process

- A toy example

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Cash Flow (Y1):

Starting Cash: $30K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: -$30K

Ending Cash: $20K

Depreciation is added back to the profit because it has been counted for in the "capital expenditure" (or what sometimes referred to as "property, plant, and equipment")

$30 (the starting cash) + $20 (the cash from ops) - $30 (the capital exp)

The Depreciation Process

- A toy example

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Cash Flow (Y1):
Starting Cash: $30K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: -$30K

Ending Cash: $20K

Cash Flow (Y2):
Starting Cash: $20K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: $0

Ending Cash: $40K

The Depreciation Process

- A toy example

YEAR	1	2	3	4	5	6	7	8	9	10
Revenue	70K	70K	70K	70K	70K	70K	70K	70K	70K	70K
Driver Expense	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K
Car Depreciations	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K
Operating Profit	10K	10K	10K	10K	10K	10K	10K	10K	10K	10K

Cash Flow (Y1):
Starting Cash: $30K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: -$30K

Ending Cash: $20K

Cash Flow (Y2):
Starting Cash: $20K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: $0

Ending Cash: $40K

Cash Flow (Y3):
Starting Cash: $40K
Profit: $10K
Depreciation: +$10K

Cash from Operations: $20K
Capital Expenditure: $0

Ending Cash: $60K

The Amortization Process

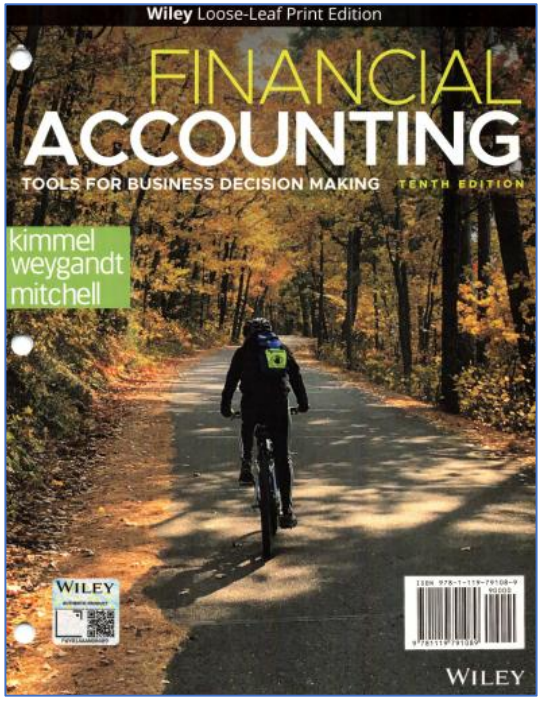
- Like depreciation, amortization is a method of spreading the cost of an asset over a specific period of time, which is usually the course of its useful life.
- However, amortization spreads the costs of *intangible* (or non-hard) assets, while depreciation spreads the costs of *tangible* (or hard) assets
- Examples of *intangible* assets are
  - Patents,
  - Trademarks,
  - and copyrights.
- Examples of *tangible* assets are
  - Manufacturing equipment,
  - Business vehicles,
  - and computers.

The Amortization Process

- Because they are intangible, amortized assets do not have a ***salvage value***,
  - The estimated resale value of an asset at the end of its useful life.
- **Depreciated assets**, by contrast, often have a *salvage value*.
  - An asset's salvage value must be subtracted from its cost to determine the amount by which it can be depreciated.

Reading Exercise

- Read **Chapters 1, 2, and 4** of the "Financial Accounting: Tools for Business Decision-Making" book
  - 2022 by Paul D. Kimmel *et al.*
- Read *SepidarSystem* blogs and tutorials:
  - https://www.sepidarsystem.com/blog/financial-statements-and-notes/



Next Class

- Financial accounting (Part II)
  - Interpreting Financial Statements