Depreciation Kata

The Kata

- **Calculate the depreciation amount of a single asset for a given financial year.**
- Straight-line depreciation is the most widely used and simplest method. It is a method of distributing the cost evenly across the useful life of the asset.
    - Depreciation per Year = (Asset Cost – Salvage Value) / Useful life
- The depreciation method is straight line depreciation over the economic life of an asset i.e. over the useful life of an asset.
    - The asset cost is the starting cost captured when the asset is acquired.
    - The salvage value is the expected value of the asset at the end of its economic life (this is captured when the asset is acquired).
    - The useful life will be used as the write-off period this is an integer in number of years (This is captured when the asset is acquired).

Example 1

An asset is acquired for R2500 with a useful life of 2 years and a salvage value of R500. The asset was acquired January 1 2017. Calculate the depreciation amount for the financial year ending December 31 2017.

According to the schedule below the depreciation amount for the financial year 01/01/2017 – 12/31/2017 is R1000.

#	Year	Start Book Value	Depreciation Percent	Depreciation Amount	Accumulated Depreciation Amount	End Book Value
1	2017/01/01 - 2017/12/31	R2,500	50.00%	R1,000	R1,000	R1,500
2	2018/01/01 - 2018/12/31	R1,500	50.00%	R1,000	R2,000	R500

Figure 1: Depreciation Schedule of R2500 Asset with R500 salvage value.

Example 2

This example deals with what happens when an asset is acquired part of the way through the year.

An asset is acquired for R2000 with a useful life of 3 years and a salvage value of R500. The asset was acquired January 16 2017. The financial year ends June 30 2017. Calculate the depreciation amount for the financial year ending June 30 2017.

We round January 16 2017 to January 1 2017 thus giving six months of use in the current financial year.

According to the schedule below the depreciation amount for the financial year 07/01/2016 – 06/30/2017 is R250.

#	Year	Start Book Value	Depreciation Percent	Depreciation Amount	Accumulated Depreciation Amount	End Book Value
1	2016/07/01 - 2017/06/30	R2,000	16.67%	R250	R250	R1,750

2	2017/07/01 - 2018/06/30	R1,750	33.33%	R500	R750	R1,250
3	2018/07/01 - 2019/06/30	R1,250	33.33%	R500	R1,250	R750
4	2019/07/01 - 2020/06/30	R750	16.67%	R250	R1,500	R500

Figure 2: Depreciation Schedule of R2000 Asset with R500 salvage value.

Assumptions:

- If the asset is acquired during a month then it is deemed to be acquired on the first day of the month.
- Do not be concerned with an asset being disposed prior to the end of its economic life.
- A financial year can start on the first of any month and will finish on the last day of the month 1 year after that (e.g. start 1 March 2013 end 28 Feb 2014).

Hints

Use triangulation to help discover the proper implementation of the algorithm. E.g. write test for a simple scenario like: useful life of 1 year, asset value of R100, salvage value 0, and asset owned for the entire year. Vary the salvage value from 0 to 25 to 50. Repeat this process for each variable to help drive the correct implementation.

Helpful links

http://www.calculator.net/depreciation-calculator.html