Bond Pricer: Part 1.

A (fixed) coupon bond is specified by:

- Coupon dates $T_1 < T_2 < T3 < \ldots < T_n$ (T_n = maturity)
- Fixed coupons $c_1, c_2, \ldots, c_n$
- A principal value N

The ex-dividend price at time $t < T_n$ is

$$p(t) = \sum_{i=1}^{n} P(t, T_i)c_i 1_{\{t < T_i\}} + P(t, T_n)N$$

where $P(t, T)$ is the price of a zero-coupon bond with maturity T or the discount factor.

Exercise

1. Write a documented function that gives you the price of a coupon bond, assuming the coupons are equals.

@parameters:

> coupon rate (c),
>
> maturity (T),
>
> valuation date,
>
> type of composition ("simple compounding", "continuous compounding")
>
> term structure of interest rate ("flat") : Here we will consider that the rate used is constant.
>
> day count convention ("ACT/365", "ACT/360", "30/360")

1. Represent on a graph the evolution of the dirty price $p(t)$

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In [ ]:  # Your code
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