Current – Yield- YTM-YTC and Bond Duration

Case-let 1: Apex Textiles Bond

Unique learning point: Clearly separate Current Yield (income-only) from YTM (total return, including capital gain) when a bond trades at a **discount**.

Apex Textiles Ltd. is a stable, mid-sized manufacturer that is funding capacity expansion through a plain-vanilla bond. The bond is currently trading below its face value because market yields have increased since its issuance. The bond has a face value of ₹10,000 and is trading at ₹9,250. It pays an annual coupon at 6.80% (paid once per year). The settlement date is 01-Apr-2025, and the maturity date is 01-Apr-2037. The bond is callable, with the first call date on April 1, 2032, at a call price equal to 103% of the face value. Use day count basis **0 (Actual/Actual)**.

Your task is to compute the bond's current yield, then calculate the YTM using the bond's settlement date, maturity date, coupon rate, price, redemption at maturity (100% of face value), frequency, and basis. Next, compute the **YTC** assuming the bond is called on the first call date at the stated call price. Finally, compute the bond's **Macaulay Duration** using the **YTM you derived** (not the call yield), and then compute **Modified Duration** from that duration and the derived YTM, interpreting what the modified duration implies about price sensitivity.

Case-let 2: BluePeak Logistics Bond

Unique learning point: Understand how **semi-annual coupon frequency** affects **YTM and duration** relative to annual cash flows.

BluePeak Logistics Ltd. finances a modern warehousing network and prefers a bond structure that aligns with its semi-annual cash flow planning. The bond has a face value of ₹25,000 and is currently priced at ₹25,650. It pays a coupon rate of 7.40% per annum with **semi-annual** coupon payments. The settlement date is 15-Jun-2025, and the maturity date is 15-Jun-2036. The bond is callable, with the first call date on June 15, 2031, at a call price of 102% of the **face value**. Use day count basis **2 (Actual/360)**.

Your task is to compute the **Current Yield**, followed by **YTM** using the given inputs and semi-annual frequency. Then compute **YTC** using the first call date and the call price. After obtaining YTM, compute the **Macaulay Duration** using the YTM (and the semi-annual frequency), and compute the **Modified Duration**. Conclude by briefly explaining how semi-annual coupons typically influence duration compared to annual coupons for otherwise similar bonds.

Case-let 3: Crestline Power Bond

Unique learning point: See why **YTC can differ sharply from YTM** when the **call date is relatively near,** and the bond trades at a premium.

Crestline Power Ltd. issued a bond that investors now expect may be called early, as interest rates have declined and refinancing is now attractive for the issuer. The bond has a face value of ₹1,00,000 and is trading at ₹1,06,750. It pays a coupon rate of 8.10% per annum with **quarterly** coupon payments. The settlement date is September 10, 2025, and the maturity date is September 10, 2038. The first call date is September 10, 2030, with a call price of 104% of the **face value**. Use day count basis **1 (30/360)**.

Your task is to compute **the Current Yield, then calculate the YTM using the maturity date and redemption at par (i.e., 100% of face value**). Next, compute **YTC** using the first call date and the stated call price. Then compute **Macaulay Duration** and **Modified Duration** using the **derived YTM** (not YTC) and briefly comment on how the possibility of being called affects the interpretation of yields even though duration here is computed using YTM.

Case-let 4: DeltaMetro Housing Bond

Unique learning point: Understand how **call premium** changes **YTC** and why a bond can have **premium redemption on call** even if maturity redemption is at par.

DeltaMetro Housing Finance Ltd. wants to retain flexibility to redeem debt early if its cost of funds declines, so it embeds a call option with a meaningful call premium. The bond has a face value of ₹50,000 and is currently trading at ₹49,100. It pays a coupon rate of 7.00% per annum with **semi-annual** payments. The settlement date is May 1, 2025, and the maturity date is May 1, 2038. The bond can be called first on May 1, 2033, at a call price of 105% of its **face value**, while redemption at maturity is at **100%**. Use day count basis **0 (Actual/Actual)**.

Your task is to calculate the Current Yield, then determine the **YTM** to maturity. Next compute **YTC** using the first call date and call price (105%). After deriving YTM, compute **Macaulay Duration** using that YTM and then compute **Modified Duration**, and briefly discuss how the call premium pushes the call yield differently compared to the maturity yield.

Case-let 5: Evergreen Pharma Bond

Unique learning point: Connect high-coupon bonds to **lower duration** (faster recovery of value through coupons).

Evergreen Pharma Ltd. issued a higher-coupon bond during a period of tighter credit conditions to attract investors. The bond has a face value of ₹5,000 and trades at a premium of ₹ 40, or near par at ₹5,040. It pays an annual coupon rate of 10.25% with **annual** coupon payments. The settlement date is August 20, 2025, and the maturity date is August 20, 2036. The bond is callable, but the first call date is far in the future—August 20, 2034—at a call price of **101% of face value**, so investors view it as less likely to matter immediately. Use day count basis **1 (30/360)**.

Your task is to compute **Current Yield**, then calculate **YTM** to maturity and **YTC** to the first call date. Using the YTM you derive, compute the bond's **Macaulay Duration** and **Modified Duration**, and then explain why a relatively high coupon rate generally reduces duration compared to a lower-coupon bond with similar maturity.

Case-let 6: FrostRiver Utilities Bond

Unique learning point: Observe how long maturity and low coupon rates lead to **high duration and high modified duration** (greater rate risk).

FrostRiver Utilities Ltd. issued a long-dated bond to fund a multi-decade infrastructure upgrade. Because the coupon is relatively low, a larger portion of the value is received later, increasing interest-rate sensitivity. The bond has a face value of ₹2,00,000 and is trading at ₹1,78,500. It pays a coupon rate of 5.90% per annum with **semi-annual** payments. The settlement date is October 1, 2025, and the maturity date is October 1, 2040. The first call date is October 1, 2035, at a call price of 102.5% of the **face value**. Use day count basis **2 (Actual/360)**.

Your task is to calculate the Current Yield, then determine the **YTM** and **YTC** using the appropriate dates and redemption/call prices. Using the **derived YTM**, compute **Macaulay Duration** and **Modified Duration**, and interpret the modified duration as the approximate percentage price change for a 1% change in yield, highlighting why this bond exhibits higher interest-rate risk.

Case-let 7: GreenHaven Renewables Bond

Unique learning point: Understand how quarterly payment frequency changes the timing/weighting of cash flows and affects **duration**.

GreenHaven Renewables Ltd. structures its debt to align quarterly payouts with its project cash inflows. The bond has a face value of ₹75,000 and is currently priced at ₹78,300. It pays a coupon rate of 7.65% per annum with **quarterly** coupons. The settlement date is January 12, 2026, and the maturity date is January 12, 2037. The first call date is January 12, 2032, at a call price of 103% of the **face value**. Use day count basis **0 (Actual/Actual)**.

Your task is to compute **the Current Yield, then calculate the YTM** to maturity and **YTC** to the first call date. Using the YTM you derive, compute **Macaulay Duration** and then **Modified Duration**, and briefly explain how quarterly coupons typically influence the duration compared to less frequent payments, holding maturity broadly comparable.

Case-let 8: Horizon Retail Bond

Unique learning point: Practice a scenario where **the coupon rate is materially below the YTM, strengthening the discount and pushing the** duration characteristics.

Horizon Retail Ltd. issued a bond when rates were low; since then, market yields have risen, so the bond is trading at a noticeable discount. The bond has a face value of ₹1,00,000 and is trading at ₹89,750. It pays a coupon rate of 4.90% per annum with **semi-annual** payments. The settlement date is March 5, 2025, and the maturity date is March 5, 2039. The first call date is March 5, 2034, at a call price of 101.5% of the **face value**. Use day count basis **1 (30/360)**.

Your task is to compute the **Current Yield**, then compute the bond's **YTM** and **YTC** using the stated dates and redemption/call prices. Next, compute **Macaulay Duration** using the **derived YTM**, followed by **Modified Duration**, and explain why a low-coupon, discounted bond tends to exhibit a longer effective cash-flow recovery profile than a higher-coupon bond, even before considering callability.

Case-let 9: IronGate Engineering Bond

Unique learning point: Reinforce that the **modified duration** depends on both **duration and yield level**, and interpret it as a practical measure of risk.

IronGate Engineering Ltd. issued a mid-term bond to finance the purchase of specialized equipment. The bond has a face value of ₹50,000 and is priced at ₹52,400. It pays an annual coupon rate of 6.60% with **annual** payments. The settlement date is 01-Jul-2025, and the maturity date is 01-Jul-2036. The bond is callable with a first call date of July 1, 2031, at a call price of 104.5% of the **face value**. Use day count basis **2 (Actual/360)**.

Your task is to calculate the current yield, then determine YTM and YTC based on the maturity and call assumptions. Using the **YTM you compute**, calculate **Macaulay Duration** and **Modified Duration**, and interpret the modified duration as an approximate percentage price change for a 1% yield change, explicitly linking the risk interpretation to the derived yield level.

Case-let 10: Keystone Digital Infrastructure Bond

Unique learning point: Integrate **return measures (CY, YTM, YTC)** with **risk measures (duration, modified duration)** and provide a coherent interpretation.

Keystone Digital Infrastructure Ltd. finances long-term digital networks and issues a bond tailored for income-seeking investors; however, the embedded call feature means the realized return may differ depending on whether the issuer calls the bond. The bond has a face value of ₹5,00,000 and is currently trading at ₹5,21,250. It pays a coupon rate of 8.30% per annum with **quarterly** payments. The settlement date is February 20, 2026, and the maturity date is February 20, 2038. The first call date is February 20, 2031, with a call price of 103.5% of the **face value**. Use day count basis **0 (Actual/Actual)**.

Your task is to compute the **Current Yield**, then compute **YTM** and **YTC** using the stated maturity and call assumptions. Using the **YTM you derive**, compute **Macaulay Duration** and **Modified Duration**, and then write a short-integrated interpretation explaining what the three yield measures imply about potential return outcomes and what modified duration implies about interest-rate risk, all based on the same set of bond inputs.