Let suppose the bond works on rules like follow:

- Person gives 300'000 GBP to bank and take that bond;
- Every year owner gets money which calculates as next:

$$z \to z \cdot r_{\{on\ issuance\ Date\}}$$
$$where\ z — start\ amount, r_{\{on\ issuance\ Date\}} — rate\ on\ issuance\ date$$

- Every month interest rate could be different. (There are few factories (which implements IRateFactory interface) for it in project)
- Bond can be sold to another person. In that case its price is less then start amount. It calculates as

$$z \to (1 - discount) \cdot z,$$
$$where\ \mathbf{discount}\ is\ value\ which\ was\ given\ by\ seller\ site.$$

- At the expiration date ($= start\ date + maturity\ years$) the amount has to be return to its current owner.

Given:

Amount = z;

StartDate – bond start date;

ExpirationDate – bond expiration date ($= start\ date + maturity\ years$)

ReBuyingDate – bond re-Owning date;

Discount;

To get rate by date: (IRateFactory)

Solution:

$$Profit1 = (-z + z \cdot (1 - discount)) + YieldForFirst14Years$$
$$YieldForFirst14Years = 14 \cdot z \cdot r_{\{on\ issuance\ Date\}}$$
$$Profit2 = (z \cdot (1 - discount) - z) + YieldsForLast16Years$$
$$YieldForFirst16Years = 16 \cdot z \cdot r_{\{on\ issuance\ Date\}}$$