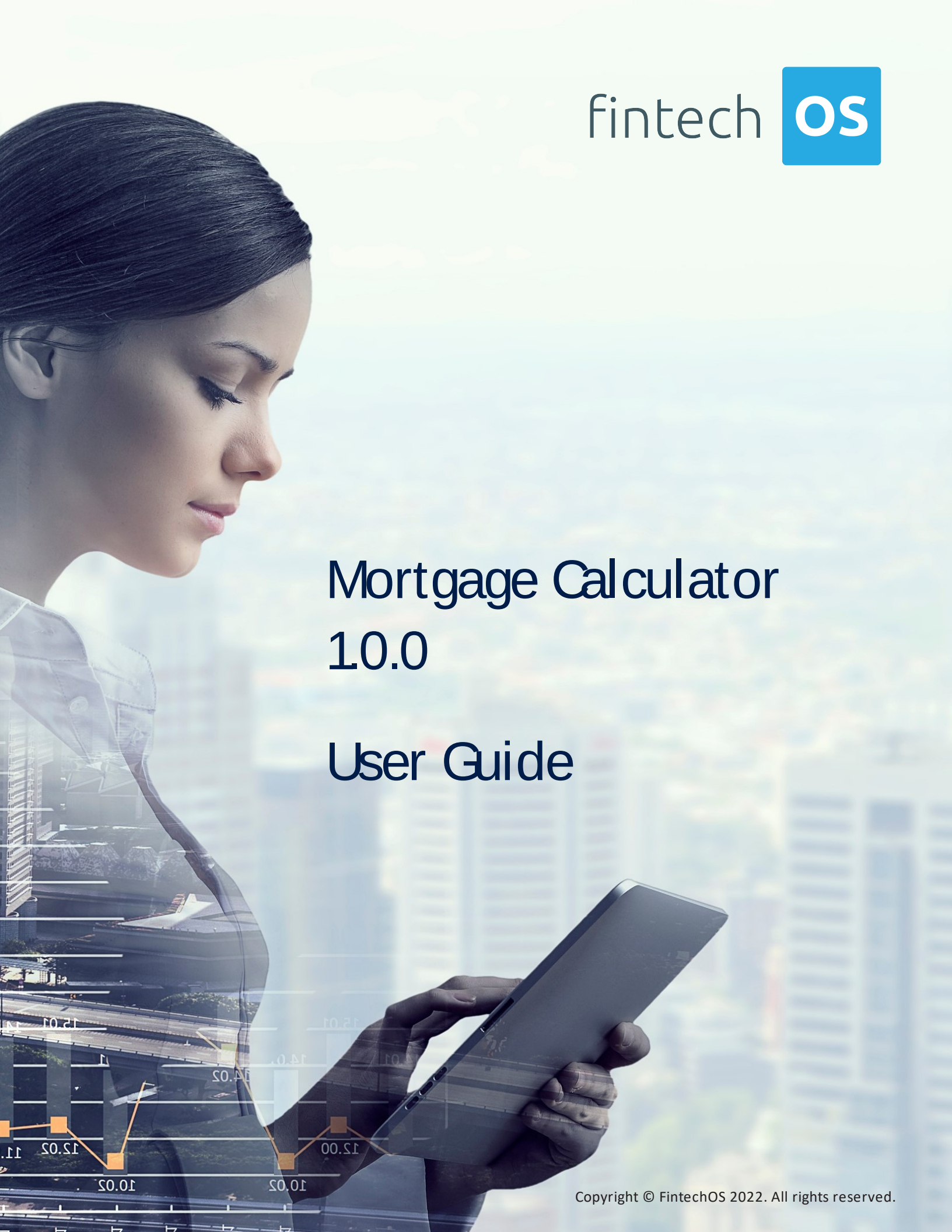

Mortgage Calculator 1.0.0

User Guide

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TOC

Overview

Before applying for a mortgage, consumers wish to know the amount they are eligible for and the costs involved. Each bank has slightly different offers, therefore knowing exactly for what amount you qualify without any commitment, i.e., a contract, is a plus in user experience. FintechOS offers a B2C portal with two simulators. Hence, an un-authenticated customer (a new customer to the bank, un-authenticated in the FintechOS Portal) can know in seconds what type of loan they qualify for. It serves as a starting point to launch the mortgage application.

This page has the functionality to simulate the loan application and return to you, the applicant, a result for your loan request. It can be embedded in a bank's website to offer its clients a quick way to find out if they qualify for any of the mortgage products that are being offered. From this page, the customers can access the Mortgage digital journey containing the steps to acquiring the loan amount (selecting a mortgage type, finding a property, declaring financial data, getting an insurance for the property, signing the contract).

Business Pain Points

The Mortgage Calculator accelerator by FintechOS is aimed at resolving some of the pain points when looking to acquire a mortgage:

- the applicant is un-aware of what are the loan's implications;
- requires various documents before knowing what are the mortgage offers;
- there is no pre-approval;
- the need to create a application.

The Mortgage Calculator accelerator by FintechOS solves these pain points by offering a fully digital seamless way for your customers to find out if they are suitable for a mortgage.

Advantages of the Mortgage Calculator:

- Time-efficient and Unassisted. The process has only a few fields that need to be completed to get an instant decision.
- Digital. The calculator is 100% digital without the need to visit a bank to discover their offering.
- Personalization. This accelerator is highly configurable and can be further enhanced via Innovation Studio to adapt it to any business requirements.
- Advanced formula for calculation. The processor Business Formulas offers an intricate method to build a formula that can calculate the following:
    - the mortgage value
    - the banking products the customer is eligible for.

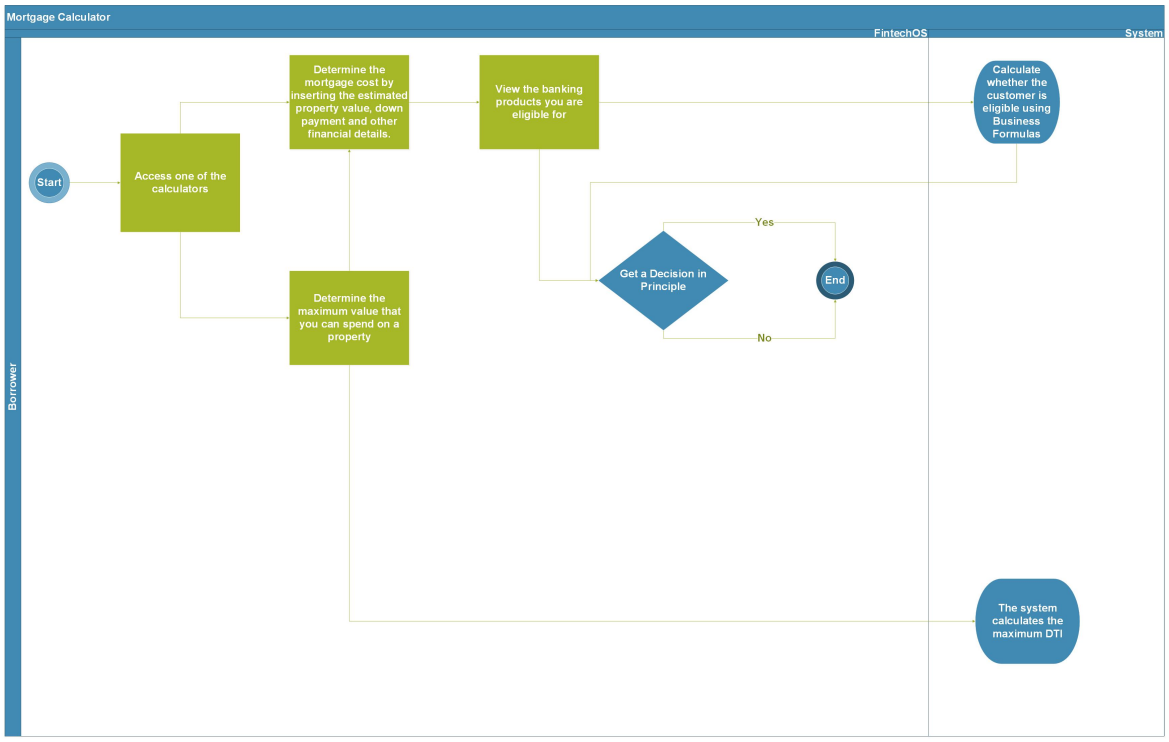
Solution Walkthrough

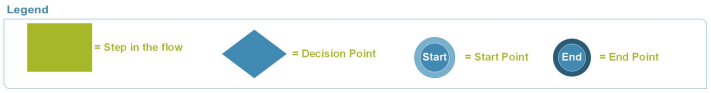
The accelerator Mortgage Calculator is composed of two simulators that aid both customers and back-office employees to determine two important pillars in the decision of acquiring a mortgage: the products the customer is eligible for and the cost of the mortgage. These are the two delimiting factors for the customer to make a commitment.

The calculator can be used in the following two scenarios:

- customers accessing the official website of a bank to get information about the mortgage offer and from the calculator to receive a DIP for Mortgage
- bank employees to give a fast answer to customers in the branch or from the call center informing them of the product options that are suitable, what costs a mortgage implies and the proportions of the deposit and that of the mortgage and even launch the DIP for Mortgage.

Below is a UML diagram showing the main actions part of the Mortgage Calculator.



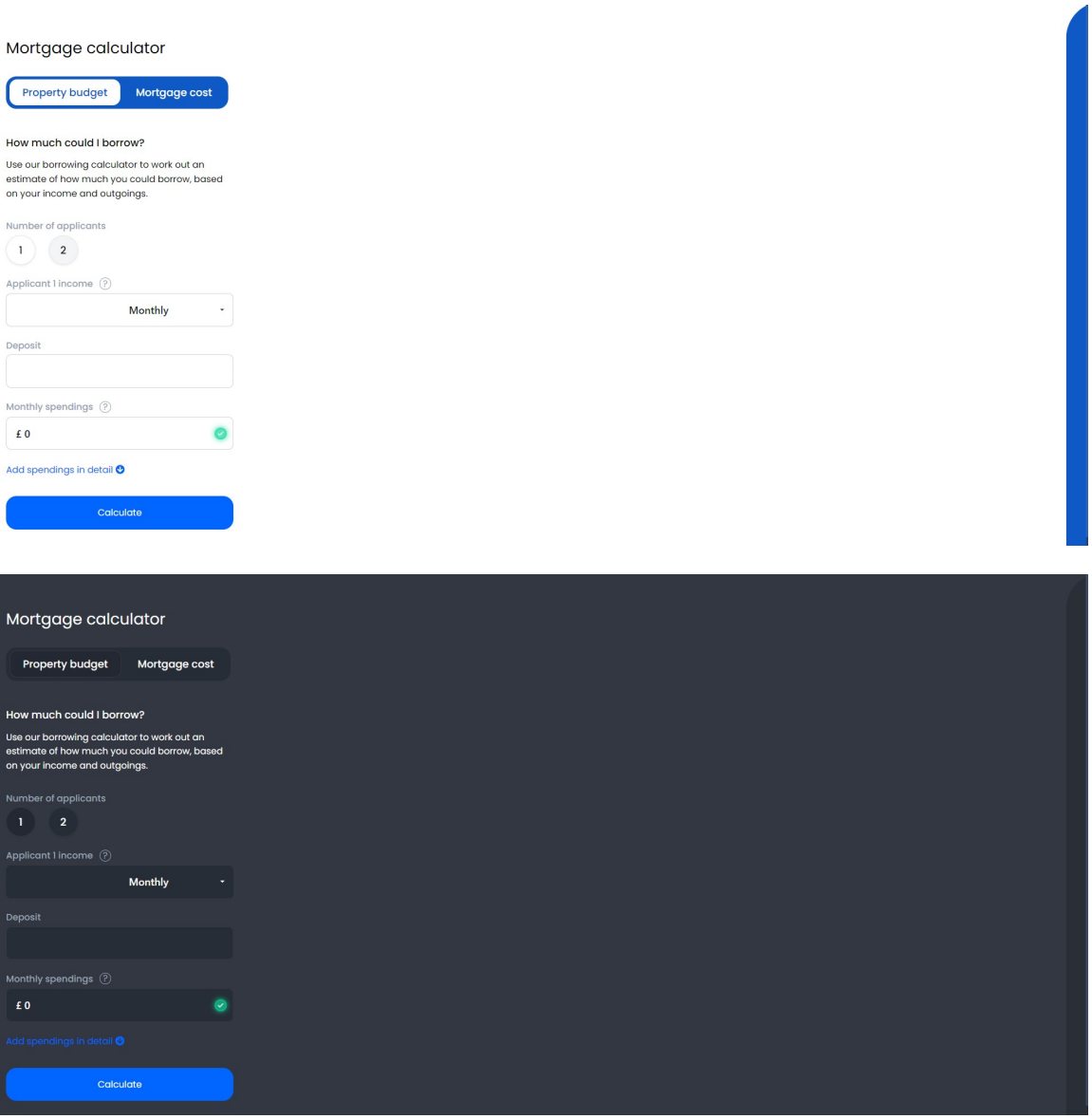


To download the diagram, click here.

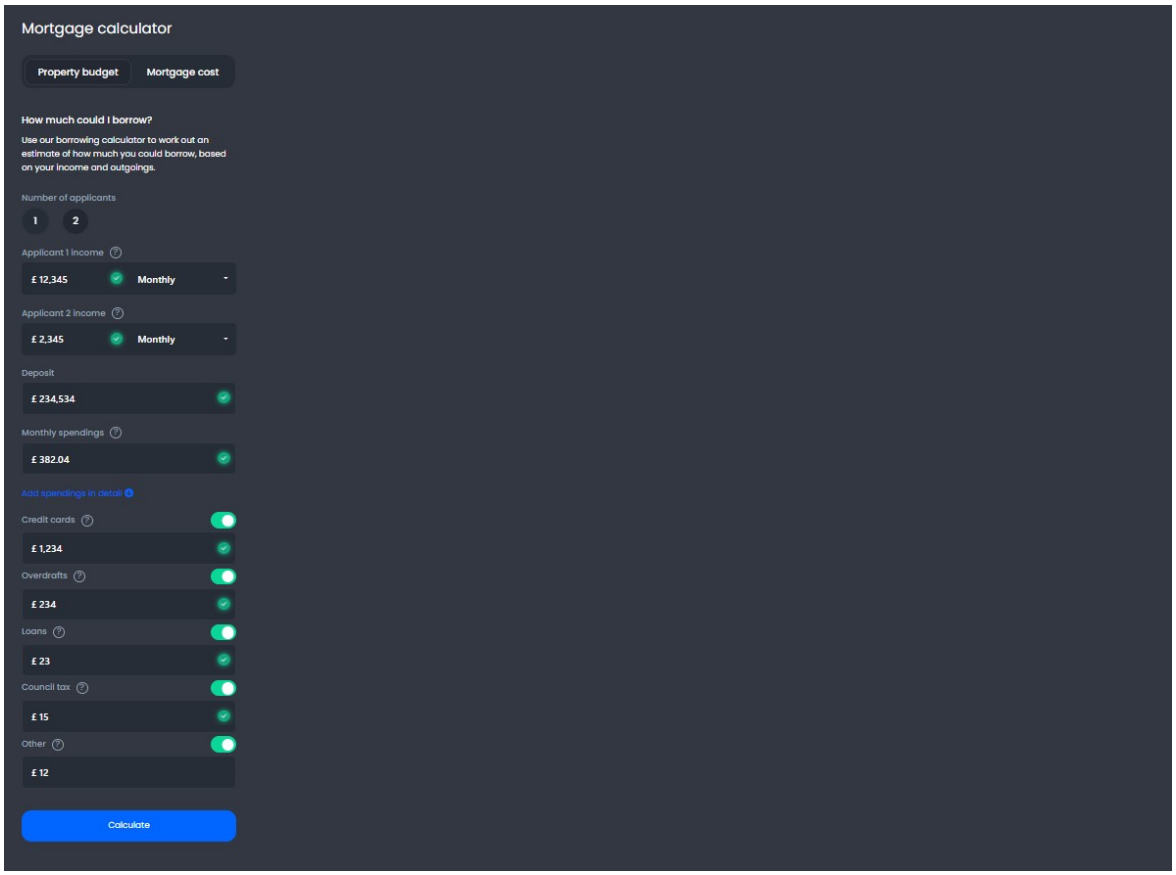
The two calculators are:

Property Budget Simulator

This calculator determines the maximum value for a property the customer can have: the maximum mortgage plus the deposit.



Fill in the fields:



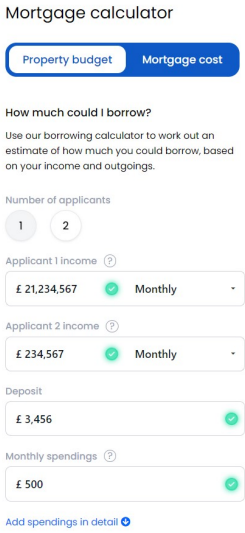
Fields	Data Type	Description
Number of applicants		Select the number of applicants: 1 or 2.
Applicant 1 income	Text	Insert the income for the main borrower.
Deposit	Number	Insert the initial deposit.
Monthly spendings	Number	Insert the expenses for the main borrower.
Add spendings in detail (Break down the expenses into categories)		
Credit cards	Bool	Toggle this in case you have credit cards. A text box is then displayed. Insert the value.
Overdrafts[1]	Bool	Toggle this in case you have overdrafts. A text box is then displayed. Insert the value.

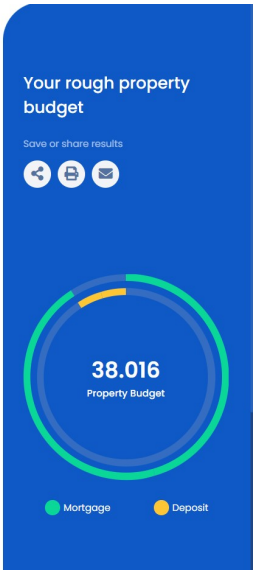
[1]An overdraft is a loan provided by a bank that allows a customer to pay for bills and other expenses when the account reaches zero.

Fields	Data Type	Description
Loans	Bool	Toggle this in case you have loan(s). A text box is then displayed. Insert the value.
Council tax[1]	Bool	Toggle this in case you have such a tax on your dwelling. A text box is then displayed. Insert the value.
Other	Bool	Toggle this in case you have other expenses you need to cover. A text box is then displayed. Insert the value.

Click **Calculate**.

A right-hand side panel opens. It contains the results based on the data inserted. It enables saving and sharing via email or printing the offer or copying the link. The chart explains the value of the mortgage and the value of the deposit.



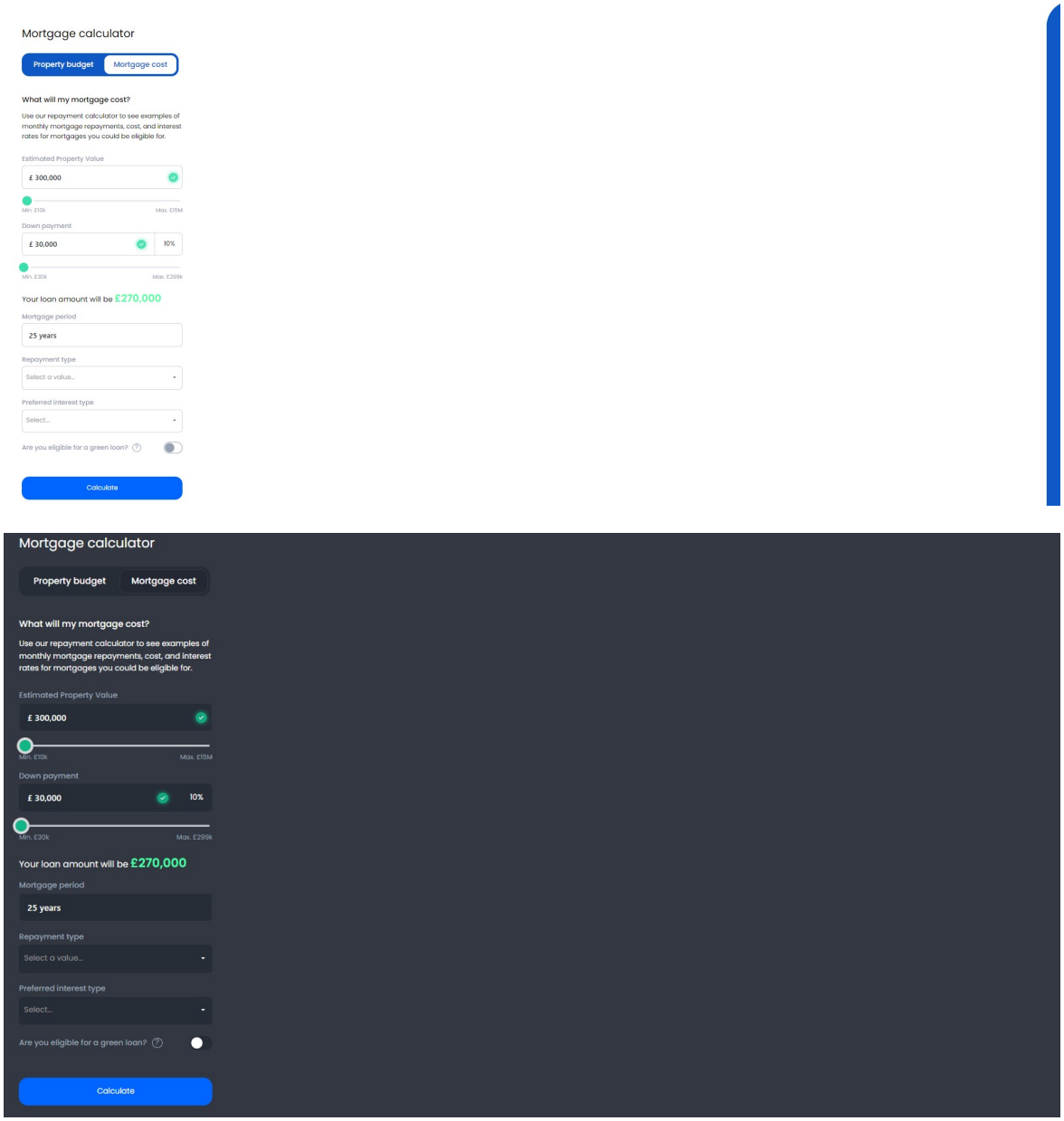


Click **Get a DIP** to launch the DIP For Mortgage process.

Mortgage Cost Simulator

In this simulator a customer can determine what are the offers they are eligible for.

[1]Council tax is a tax on domestic dwellings by local authorities (councils) throughout Britain and is based on the estimated value of your dwelling and the number of people living in it.



Field	Description
Estimated Property Value	Move the slider to adjust the sum by dragging the slider or by manual input in the filled above the slider. The minimum is 10k and the maximum value is 15 million pounds. The default value is 300k pounds. In case you manually input an amount lower/bigger than the minimum/maximum amount permitted, a toast message is displayed.

Field	Description
Down payment[1]	In this field, the system calculates: • the minimum deposit amount: from all the products available, the system fetches the highest **Loan-To-Value (LTV)**[2] available. Using the highest LTV, the system calculates the minimum deposit amount on the selected property value on the previous field. • the maximum deposit amount: based on the property value, it can cover even 99% of the property value. You cannot get a lower loan amount than the product minimum.
Your Loan amount will be	The system displays the calculates the loan amount based on the estimated property value and the deposit amount.
Mortgage Period[3]	By default, the value is 25 years. The value is calculated by getting the available products within Banking Product Factory: the minimum and the maximum period from all of the products defined there.
Repayment type[4]	Choose between: • Equal instalments • Equal principal payments • Only interest.
Preferred **Interest type**[5]	Choose between: • Fixed • Tracker.

[1]A down payment is a sum of money that a buyer pays in the early stages of purchasing an expensive good or service.

[2]LTV is calculated by dividing the deposit by the estimated property value and represented by a %. The system rounds up the % to a full number.

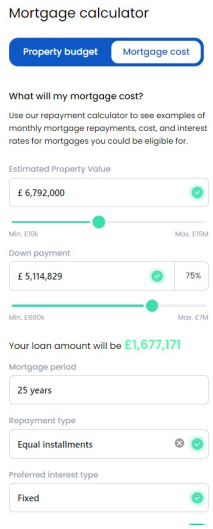
[3]A mortgage term is the number of years you have to pay off your mortgage.

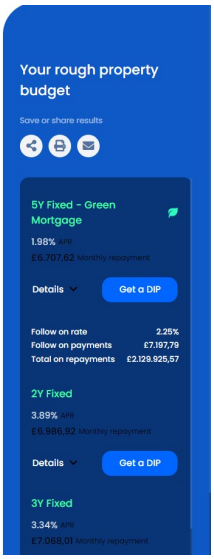
[4]The repayment method will affect the interest expenses during the loan period. There are three different methods for repaying a housing loan: equal payments, equal instalments and fixed equal payments.

[5]When borrowing money with a credit card, loan, or mortgage, there are two interest rate types: Fixed Rate Interest and Variable Rate Interest.

Field	Description
Are you eligible for a **green mortgage** 1?	Toggle this field to get a green loan. Hover over the tooltip to display the message: *A green mortgage is a mortgage which offers a lower interest rate to people who are buying a more energy efficient home. In most cases, to qualify for a green mortgage, you need to be buying a home with a Building Energy Rating (BER) of at least B3 or higher.*

Click **Calculate**. This button is re-labledd with **Recalculate** to allow you to reload the process in you changed the values for on e of the fields below.





A right-hand side panel opens. It contains the results based on the data inserted. It enables saving and sharing via email or printing the offer or copying the link. Underneath, there are the products you are suitable for:

Product	Name	Class	Subclass	Category
RWM_01	5Y Fixed - Green Mortgage	Retail	Loan	Mortgage
RWM_02	2Y Fixed	Retail	Loan	Mortgage
RWM_03	3Y Fixed	Retail	Loan	Mortgage
RWM_04	5Y fixed	Retail	Loan	Mortgage
RWM_05	3Y Tracker	Retail	Loan	Mortgage

Click **Details** for each to open additional fields:

[1]A bank or mortgage lender offers a house buyer preferential terms if they can demonstrate that the property for which they are borrowing meets certain environmental standards.

- Follow on rate
- Follow on payments
- Total on repayments.

Click **Get a DIP** to launch the DIP For Mortgage process.

Installation

This version is compatible with High Productivity Fintech Infrastructure v22.1. The supported operating system is Microsoft Windows 10, and the supported browser is Google Chrome.

Prerequisites

Download the package from the Marketplace.

Install and configure:

- Standard FintechOS infrasturcture (with B2CPortal and B2CProxy)
- Banking Product Factory v3.0.2
- B2C Setup project or a manually configured B2C security role assigned to a guest user and a frontend domain named B2C.

Package

Once you downloaded the package Mortgage Calculator-1.0.0.zip, unzip the package. It contains the following set-up:

- prereq
- solution (the solution with the templates for the B2C Portal, containing the digital assets)

  This accelerator contains the digital assets:

    - BAN-RMC-I,
    - BAN-RMC-DM,
    - BAN-RMC-SDK.
- data-model
- additional-files (the library with custom controls; the custom files and the report document templates)
- default-products (the banking products)
- reset (it contains SQL procedures to delete records from the database)
- an installation guide.

1 Install the Solution

Add the latest syspackdeployer in the data-model folder, edit the installer and run it in admin mode.

Add the latest syspackdeployer in the solution folder, edit the installer and run it in admin mode.

2 Set up the Additional Files

Copy or upload the custom folder in the B2CPortal folder.

Add the proxy routes in proxy config file.

Restart the application pools/services for B2CPortal and B2CProxy.

3 Install default banking products

Add the latest syspackdeployer in the solution folder, edit the installer and run it in admin mode.

Configurations

The solution can be modified and extended to become suitable to any market and functional specifications of a company. It is built on the form driven flow **FTOS_BARET_RetailMortgageCalculator** with one step **RetailMortgageCalculator** that can be modified to suit different business requirements such as data model modifications, UI modifications, coding modifications in the section tab Advanced, and more.

Follow the steps below to view the accelerator's configurations:

1. Log into Innovation Studio.
2. From the main menu, select **Digital Experience** > **Digital Journeys** > **Form Driven Flows**. From the **Form Driven Flow** page, select **FTOS_BARET_RetailMortgageCalculator** > **RetailMortgageCalculator** step > **Advanced** section tab.
3. In **After Events**, there are some important configuration you can modify to fit your business requirements:

- configure the header buttons **Property budget** and **Mortgage cost**
- display errors:
    - *You are not qualified for any budget!* It is displayed if the customer does not have the minimum **DTI**[1]. If so, consider visiting a branch.
    - *You need to input all data!* It is displayed if you have empty fields. All the fields are mandatory. To get the outcome of the calculator, fill in all the fields.
- set the default values for the income frequency to monthly. If you select yearly income frequency, the system divides the income by 12. If you select weekly income frequency, the system multiplies it by 4, the result is the monthly income.

[1]The Debt-to-Income ratio (DTI) is a personal indicator of a good balance between debt and income. Monthly debt payment amount / Monthly gross amount (before taxes and other deductions).

- display the second income field for the second applicant
- calculate the mortgage periods
- set the minimum product period for the field **Mortgage period**
- set the navigation from button **Get a DIP** from the page **Mortgage Cost** products to the Retail Mortgage flow.

Configuring the Banking Products

This processor creates and maintains products that are used in FintechOS form driven flows and later in digital journeys. The custom products are included in the solution with pre-loaded filters and ranking systems. They are a great place to start, but if for some reason you need further configurations, you have the possibility to modify, extend or define new custom offerings for your customers. Based on your business requirements, create new products or clone the existing one to modify them.

To visualize and to administer them, access the dedicated menu for Banking Product Factory within the Innovation Studio. The Mortgage Calculator accelerator has five products that are different between themselves with regard to the minimum-maximum period intervals, the minimum-maximum amount intervals and the minimum-maximum **advance**[1], **product destination types**[2], and **interest**[3].

The Mortgage Calculator accelerators has the following products configured:

Product	Name	Class	Subclass	Category
RWM_01	5Y Fixed - Green Mortgage	Retail	Loan	Mortgage
RWM_02	2Y Fixed	Retail	Loan	Mortgage
RWM_03	3Y Fixed	Retail	Loan	Mortgage
RWM_04	5Y fixed	Retail	Loan	Mortgage
RWM_05	3Y Tracker	Retail	Loan	Mortgage

[1]The advance percentage from the contract's financed value applicable at the contract level.

[2]The product purpose. This section allows for insertion or removal of existing destinations for a banking product.

[3]The interest rate is the amount a lender charges a borrower and is a percentage of the principal, i.e., the amount loaned.

> **NOTE**
> To modify any of the five existing products, you must create a clone and modify the clone since the products are in Active state.

1. Log into Innovation Studio in Developer mode.
2. Click the main menu icon at the top left-hand corner of the screen.
3. In the main menu, click **Product Factory**.
4. Click **Banking Products** to open the **Banking Products List** page.

For exemplification, here is one product presented in detail. The fields are available for the other products as well with slight variations between them.

5Y Fixed - Green Mortgage

Main Info

The first tab requires the basic elements for the creation of a product such as product type, name, code, hierarchy and features.

Field	Required	Description	Example
Product Type	Yes	The type of product.	Mortgage
External Code	No	The code of the product imported from an external system, if applicable. It can have 10 characters and it is not used in the contract.	N/A
Banking Product Code	Yes	The code of the product. It can have 10 characters and it is used in the contract. It uses a sequencer and the code of the product type.	RWM_01
Name	Yes	The name of the product.	5Y Fixed - Green Mortgage
Class	No	This field is used to place the product in a hierarchy.	Retail
Subclass	No	This field is used to place the product in a hierarchy.	Loan

Field	Required	Description	Example
Category	No	This field is used to place the product in a hierarchy.	Mortgage
Start Date	Yes	The date when the product becomes available.	19/01/2022
End Date	Yes	The last date from when the product is available. From that date forward, the product is no longer available.	29/11/2029
Description	No	Write any description or additional text here.	Floating rates with low interest fees

Details

The Details tab requires further elements such as interest, payment type, top-ups and withdrawals.

Field	Required	Description	Example
Bank Account Type	Yes	Select the type.	Loan Term Account
Is Revolving	No	Allows a business to borrow money as needed for funding working capital needs and continuing operations such as meeting payroll and playable.	null
Auto Disbursement	Yes	Specifies if the disbursement is automatically performed when the contract is approved.	true
Max No Disbursements	No	The maximum number of disbursements that can be configured for this product.	undefined
Is Guaranteed	Yes	This checkbox marks the product as secured or unsecured.	true
Allow Collateral Partial Release	No	A partial release is a mortgage provision that allows some of the collateral to be released from a mortgage after the borrower pays a certain amount of the loan.	null
Collateral Cover Percent	No	The percent that the collateral person on the contract pays. It usually is over 100%.	undefined

Field	Required	Description	Example
Allow CoDebtor	No	Select if another debtor exists for this product.	true
Allow Refinancing	No	Select if the account can be refinanced for this product.	false
Number of CoDebtors	No	Set the maximum number of debtors possible for this product.	2

Payment Schedule Types grid

In the Payment Schedule Types section, the following fields are available:

Field	Required	Description	Example
Periodicity Type	Yes	Select the regularity of payments.	Monthly
Holiday Shift For Repayment Installments	Yes	This checkbox marks if the holidays are considered for the calculation of the maturity schedule.	undefined
Holiday Shift Method	No	Select from the list the method to be used when calculating the due date if that date falls to a holiday. The due date can be shifted before or after the holiday. Possible values: • None - the due date is not shifted. • Forward - the due date is shifted to the last working day before the initially calculated due date. • Backward - the due date is shifted to the next working day after the initially calculated due date.	Forward

Field	Required	Description	Example
Defer Due Date	Yes	If you select the checkbox, the payment schedule calculates the next payment amount as if the due date has not changed even when the due date falls on a holiday. This checkbox is selected by default.	true
Grace Type	No	Select one from the list.	none
Product Grace	No	Select one from the list.	
Grace Days for Repayment	No	Select one from the list. Insert the number of days for which the grace applies.	undefined
Penalty for grace period	No	If you select the checkbox, the penalty interest is applied on the loan contract without taking into consideration the grace period defined at contract level, being calculated for the difference between system date - due date, if the grace period passed and the customer didn't pay the due amounts. If you leave this checkbox unselected, the penalty interest is applied on the loan contract taking into consideration the grace period defined at contract level, being calculated for system date - due date + grace days for repayment.	undefined

For Associated Payment Schedule Types, the Payment Schedule Types contain:

Equal installments

Field	Required	Description	Example
Name	No	Insert a suggestive name for the type.	Equal installments
Payment schedule code	No	Insert a code for the type to keep track of them.	MEIM360

Field	Required	Description	Example
Product Type	No	Select a product type to associate with the payment schedule type. Depending on the Product Type, different calculation rules are triggered. For example, the product type Overdraft has only the payment at maturity.	Mortgage

Field	Required	Description	Example
Schedule Interest Calculation Type	No	Select from the list a type of calculation for the interest. When an annual interest rate is specified, in order to calculate the Installment for an interval of days, first the annual interest rate should be transformed in to a daily base. To make this transformation there are some accepted conventions. Innovation Studio implemented the following conventions: 30/360, 30/365, Actual/Actual, where Actual for years can be either 365 or 366. Other schedule interest calculation types can also be defined, as needed. In practice may be also encountered the Actual/360 or Actual/365.	30/360

Field	Required	Description	Example
Is With Equal Installments	No	Select the checkbox if the installments are equal. If there are Commissions that appear on the Payment Schedule, these Commissions are added to the equal Installments, not included within.	true
Installment Value Custom	No	If you select the checkbox, with multiple disbursements, the Principal component of the Installments is the one calculated for the entire Financed Amount, even if it was not entirely disbursed. For example, if Financed Amount is 10.000 EURO and the value calculated for Principal component of the Installments is 800 EURO, and the customer disburses only 5.000 EURO, the Principal component remains 800, but the Interest is calculated for 5.000 EURO that were disbursed.	true

Field	Required	Description	Example
Use Fix Maturity Date (from Activation Date)	Yes	If you select the checkbox, then the Maturity Date equals to Activation Date plus the Contractual Period in Months, i.e. the number of installments depends on the Activation Date. If the checkbox remains unselected, the number of installments are fixed, the Maturity Date is equal to the First Installment plus the Contractual Period in Months, e.g. Installment date is on the first day of the month, this results in the Maturity day to be the first day of the month.	null
Measurement Unit	Yes	Select from the list the type of measurement unit applicable for the payment schedule type.	Months

For the PAYMENT SCHEDULE TYPE DETAILS:

Column Repayment Schedule	Calculation Method
AnalysisFee	FeeOnce
RemainingValue	RemainingFormula
PMT	FixedValue
Interest	Effective Rate

Column Repayment Schedule	Calculation Method
Principal	ColumnFormula
TotalInstallment	ColumnFormula

Equal principal payments

Field	Required	Description	Details
Name	No	Insert a suggestive name for the type.	Equal principal payments
Payment schedule code	No	Insert a code for the type to keep track of them.	MEIM360
Product Type	No	Select a product type to associate with the payment schedule type. Depending on the Product Type, different calculation rules are triggered. For example, the product type Overdraft has only the payment at maturity.	Mortgage

Field	Required	Description	Details
Schedule Interest Calculation Type	No	Select from the list a type of calculation for the interest. When an annual interest rate is specified, in order to calculate the Installment for an interval of days, first the annual interest rate should be transformed in to a daily base. To make this transformation there are some accepted conventions. Innovation Studio implemented the following conventions: 30/360, 30/365, Actual/Actual, where Actual for years can be either 365 or 366. Other schedule interest calculation types can also be defined, as needed. In practice may be also encountered the Actual/360 or Actual/365.	30/360

Field	Required	Description	Details
Is With Equal Installments	No	Select the checkbox if the installments are equal. If there are Commissions that appear on thePaymentSchedule, these Commissions are added to the equal Installments, not included within.	false
Installment Value Custom	No	If you select the checkbox, with multiple disbursements, the Principal component of the Installments is the one calculated for the entire Financed Amount, even if it was not entirely disbursed.	true

Field	Required	Description	Details
Use Fix Maturity Date (from Activation Date)	Yes	If you select the checkbox, then the Maturity Date equals to Activation Date plus the Contractual Period in Months, i.e. the number of installments depends on the Activation Date. If the checkbox remains unselected, the number of installments are fixed, the Maturity Date is equal to the First Installment plus the Contractual Period in Months, e.g. Installment date is on the first day of the month, this results in the Maturity day to be the first day of the month.	null
Measurement Unit	Yes	Select from the list the type of measurement unit applicable for the payment schedule type.	Months

For the PAYMENT SCHEDULE TYPE DETAILS:

Column Repayment Schedule	Calculation Method
AdministrationFee	FixedValue
AnalysisFee	FeeOnce
RemainingValue	RemainingFormula
Interest	Effective Rate
Principal	ColumnFormula
TotalInstallment	ColumnFormula

Only interest

Field	Required	Description	Details
Name	No	Insert a suggestive name for thetype.	Only interest
Payment schedule code	No	Insert a code for thetypeto keep track of them.	MOPM
Product Type	No	Select a producttypeto associate with thepaymentscheduletype. Depending on the ProductType, different calculation rules are triggered. For example, the producttypeOverdrafthas only thepaymentat maturity.	Mortgage

Field	Required	Description	Details
Schedule Interest Calculation Type	No	Select from the list a type of calculation for the interest. When an annual interest rate is specified, in order to calculate the Installment for an interval of days, first the annual interest rate should be transformed in to a daily base. To make this transformation there are some accepted conventions. Innovation Studio implemented the following conventions: 30/360, 30/365, Actual/Actual, where Actual for years can be either 365 or 366. Other schedule interest calculation types can also be defined, as needed. In practice may be also encountered the Actual/360 or Actual/365.	30/360
Is With Equal Installments	No	Select the checkbox if the installments are equal. If there are Commissions that appear on the Payment Schedule, these Commissions are added to the equal Installments, not included within.	false

Field	Required	Description	Details
Installment Value Custom	No	If you select the checkbox, with multiple disbursements, the Principal component of the Installments is the one calculated for the entire Financed Amount, even if it was not entirely disbursed.	true
Use Fix Maturity Date (from Activation Date)	Yes	If you select the checkbox, then the Maturity Date equals to Activation Date plus the Contractual Period in Months, i.e. the number of installments depends on the Activation Date. If the checkbox remains unselected, the number of installments are fixed, the Maturity Date is equal to the First Installment plus the Contractual Period in Months, e.g. Installment date is on the first day of the month, this results in the Maturity day to be the first day of the month.	true
Measurement Unit	Yes	Select from the list the type of measurement unit applicable for the payment schedule type.	Months

For the PAYMENT SCHEDULE TYPE DETAILS:

Column Repayment Schedule	Calculation Method
AdministrationFee	FixedValue
AnalysisFee	FeeOnce
RemainingValue	RemainingFormula
Interest	Effective Rate
Principal	ColumnFormula
TotalInstallment	ColumnFormula

For the Product Destination Types grid:

- First time buyer
- Green Loan.

Availability

The Availability tab determines the monetary range and the time frame when the product is available for customers.

Field	Required	Description	Example
Currency	Yes	Choose the currency for this banking product.	GDP
Period Type	No	Choose one: Days/Weeks/Months/Years/Once.	Months
Minimum Period	No	The minimum duration of the product mentioned in the contract.	1
Maximum Period	No	The maximum duration of the product mentioned in the contract.	480
Minimum Amount	No	The minimum amount of the product for which the bank opens a contract.	500
Maximum Amount	No	The maximum amount of the product for which the bank opens a contract.	9500,000
Minimum Advance (%)	No	The minimum down payment that must be paid for the leasing contract to be signed.	10%
Maximum Advance (%)	No	The maximum advance that can be paid for the leasing contract to be signed.	90%

Dimensions

The Dimensions tab displays the interests, commissions, insurances, discount and questions valid for a product.

Interests & Commissions: for Interest RWM_01

Field	Value
Banking Product	5Y Fixed - Green Mortgage
Code	IRWM_01
Item Name	Interest RWM_01
Start Date	19/01/2022
End Date	29/11/2029
Interest List	IRWM_01
Commission List	Mortgage fee 0
Minimum Interest Rate (%)	undefined
Is Negotiable	null

Configuring the Business Formulas

Business Formulas processes different inputs from your digital journey in order to generate desired outputs. By inserting arguments and using them in steps, the system creates complex calculations to be triggered in a flow.

Access **Innovation Studio** > **Automation Blocks** > **Business Formulas** > **Formulas** > **RMC_ProperyBugetCalulator**. This formula calculates the debt-to-income, the current debt-to-income, the maximum value for the monthly instalment, the maximum value of the mortgage the customer can take on.

Field	Value
Name	RMC_ProperyBugetCalulator
Formula Input	RMC_ProperyBugetCalulator
Start date	25/02/2022 10:28
Version	1

The formula steps are:

Name	Master Type	Subtype	Calculation type	Formula
DTI	Simple Type	Decimal	Normal	`result = spendings/incomes * 100;`
availableDTI	Simple Type	Decimal	Normal	`result = maxDTI - DTI;`

maxInstallment	Simple Type	Decimal	Normal	`if (availableDTI > 0)`
				`  result = incomes * availableDTI / 100;`
				`else result = (decimal)0;`

maxLoanAmount	Simple Type	Decimal	Normal	`if (availableDTI > 0) {`
				`  var amount = maxInstallment * ((1 - (1 / (POWER(1 + interestRate / 100 / 12, period)))) / (interestRate / 100 / 12));`
				`  if (amount < minAmount) {`
				`  amount = (decimal)0;`
				`  }`
				`  else if (amount > maxAmount) {`
				`  amount = maxAmount;`
				`  }`
				`  result = amount;`
				`}`
				`else result = (decimal)0;`

Name	Master Type	Subtype	Calculation type	Formula
adjustedMaxLoanAmount	Simple Type	Decimal	Normal	`if (availableDTI > 0 && maxLoanAmount > 0) { var depositPercentage = deposit / maxLoanAmount * 100; if (depositPercentage < minAdvance) { result = deposit * 100 / minAdvance; } else result = maxLoanAmount; } else result = (decimal)0;`
propertyBuget	Simple Type	Decimal	Normal	`if (availableDTI > 0 && adjustedMaxLoanAmount > 0) result = adjustedMaxLoanAmount + deposit; else result = (decimal)0;`

Configuring the Flow Settings

This menu part of Innovation Studio is used to build processors used in the journey for specific actions that are triggered. It is easy to modify any parameter of the processor by accessing the dedicated processor settings and changing the value from the key-value pair.

Access **Innovation Studio** > **Digital Experience** > **Digital Journeys** > **Processor Settings** > **RetailMortgageCalculator**

Defaults

```
{
    "currencySymbol": "£",
        "defaultCurrencyCode": "GBP",
            "maxDTI": 39.98,
                "productClass": "Retail",
                    "productSubclass": "Loan",
                        "productCategory": "Mortgage",
                            "minEstimatedPropertyValue": 10000,
                                "maxEstimatedPropertyValue":
15000000,
                                    "stepEstimatedPropertyValue":
1000,

"defaultEstimatedPropertyValue": 300000,
                                            "stepDownPayment": 1000,
                                                "defaultPeriod":
300,
                                                    "purposeName":
"First time buyer",
                                                        "colorMode":
"Light",

"paymentScheduleName": "Equal installments",

"interestTypeName": "Collection",

"journeyRedirect": "FTOS_BARET_WelcomeScreen"
}
```

You can modify the values from the code above such as the `colorMode` for the theme from `Light` to `Dark` or the maximum vale of the **debt-to-income**[1]. The `productClass`, `productSubclass`, `productCategory` are used to generate the

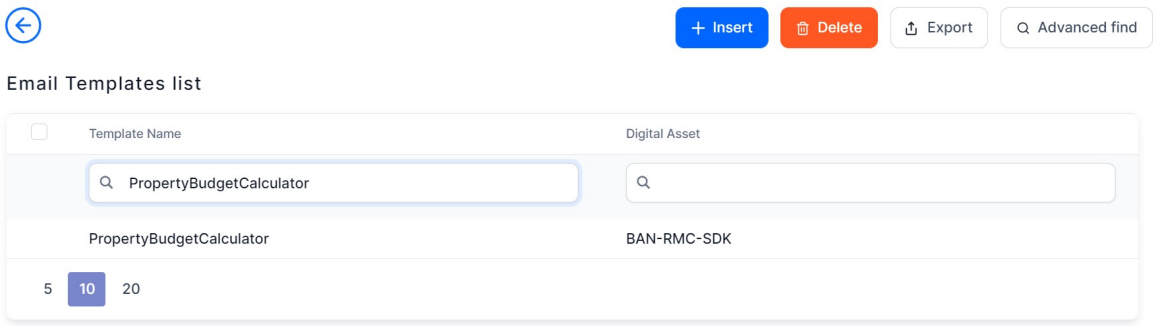
[1]The Debt-to-Income ratio (DTI) is a personal indicator of a good balance between debt and income. Monthly debt payment amount / Monthly gross amount (before taxes and other deductions).

products for "Mortgage Cost Simulator" on page 9. The `minEstimatedPropertyValue`, `maxEstimatedPropertyValue`, `stepEstimatedPropertyValue` are used for the slider.

Configuring the Email

An email is sent to the customer to see the result of the calculation. You can modify the template to suit the branding of the bank. To access the template, follow these steps:

1. Log into Innovation Studio.
2. From the main menu, select **Admin** > **Email templates** > **PropertyBudgetCalculator**.



Use the text editor features to modify as needed. The email template is used by the script "FTOS_BARET_SendBudgetCalculatorEmail" on the next page.

Server Automation Scripts

Within Innovation Studio, there are bits of code that execute several actions, which embody a business need such as: filtering products, saving session storage, returning products and setting amounts or periods. On-demand automation scripts are available for being called from any object or context.

FTOS_RMC_GetProductsBoundaries

This script gets the data from FTOS_BP_BankingProduct, FTOS_BP_Class, FTOS_BP_SubClass, FTOS_BP_Category and from FTOS_BP_BankingProduct with the status VWApproved. It gets the products incuding their FTOSBPBankingProductId, minimum amount, maximum amount, minimum period, maximum period, minimum advance.

Input: var `flowSettingsName`; var `processorSettingsName`

Output: boolean

FTOS_BARET_RMCProperyBuget

This script decides the products available for the inputted data.

Input: var `flowSettingsName`; var `processorSettingsName`; var `deposit`; var `incomes`; var `spendings`; var `period`

Output: var `result`

FTOS_RMC_SaveBugetCalculatorData

This script updates the `budgetCalculatorJSON` in the entity FTOS_BARET_Loan.

Input: var `loanId`

Output: `budgetCalculatorJSON`

FTOS_BARET_SendBudgetCalculatorEmail

This script sends the email with the template `PropertyBudgetCalculator`

Input: var `email`; var `url`.

Output: sends email.

Glossary

A

Advance

The advance percentage from the contract's financed value applicable at the contract level.

APR

Annual percentage rate. APR is an annualized representation of your interest rate.

C

Council tax

Council tax is a tax on domestic dwellings by local authorities (councils) throughout Britain and is based on the estimated value of your dwelling and the number of people living in it.

D

debt-to-income

The Debt-to-Income ratio (DTI) is a personal indicator of a good balance between debt and income.
Monthly debt payment amount / Monthly gross amount (before taxes and other deductions).

Decision in principle

It offers an easy way for customers to view product requirements before advancing to the next step in the digital journey.

Down payment

A down payment is a sum of money that a buyer pays in the early stages of purchasing an expensive good or service.

G

green mortgage

A bank or mortgage lender offers a house buyer preferential terms if they can demonstrate that the property for which they are borrowing meets certain environmental standards.

I

Interest

The interest rate is the amount a lender charges a borrower and is a percentage of the principal, i.e., the amount loaned.

Interest rate

The interest rate is the amount a lender charges a borrower and is a percentage of the principal—the amount loaned.

Interest type

When borrowing money with a credit card, loan, or mortgage, there are two interest rate types: Fixed Rate Interest and Variable Rate Interest.

L

Loan-To-Value (LTV)

LTV is calculated by dividing the deposit by the estimated property value and represented by a %. The system rounds up the % to a full number.

M

Mortgage Period

A mortgage term is the number of years you have to pay off your mortgage.

O

Overdrafts

An overdraft is a loan provided by a bank that allows a customer to pay for bills and other expenses when the account reaches zero.

P

Product destination types

The product purpose. This section allows for insertion or removal of existing destinations for a banking product.

R

Repayment type

The repayment method will affect the interest expenses during the loan period. There are three different methods for repaying a housing loan: equal payments, equal instalments and fixed equal payments.