

Dark Time of Money (iPhone/iPad/iPod touch application)

Operation manual Ver 1.5 (2019/ 1/25)

At the beginning: Please touch the numeric location "where you want to input or change" in the sheet. Numeric is entered. And calculation result is automatically displayed when you fill desired value. No explanation is necessary for basic calculations, I think. This manual includes only the minimum functional description.

Attention: This application is intended to modify numeric easily. Conversely, numeric may be changed by unintentionally touch. Please check by yourself carefully any value, if you use it to practical purpose. I make no warranty and can't respond to claims of any kind of damage.

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(All figures in this manual is iPhone 3.5inch, iOS9.x)

Calculation Sheet

Three same interest sheets (below blue/pink/green), one % sheet (orange) and one total sheet (purple) are attached. (See P.9)
 For distinction, each sheet has a different color.

The screenshot shows a financial calculator interface with the following elements:

- Present Value (Savings):** A numeric input field showing $-00,000,000.00$.
- Interest rate(%) / Year:** An empty input field.
- Deposit:** A numeric input field showing $-1,200.00$ with a lock icon on the left.
- Number of Years:** A numeric input field showing $0,000,000,000.$.
- Future Value (Recieve):** A numeric input field showing $00,000,000.00$.
- Interest/Year:** A selector field showing 12 .
- Deposit/Year:** A selector field showing 12 .
- Deposit at:** A selector field showing **End**.
- Bottom Bar:** Contains icons for System Settings (gear), 2 Memory (plus), and Clear (C).

Numeric part: Thin color squares are for numerical input or calculation result display. Input guide numeric is dimmed before entering numeric in the input section. **Touch directly** the most significant digit of the numeric. The digit changes by the following action. Adjust each digit to necessary numerical values by repeatedly similar touch actions. (See P.4)

Keyboard appears if you press the left side button. (Before numeric input. See P.6)

Where it is not the input section, a touch changes it to the input section.

Button becomes 'lock' when numeric exist. You can lock the numeric by it.

Label part: Dark color behind includes label for each value. Below operations are attached.

Sheet Change: Touch and move right or move left.

Select Label (Interest/% sheet only): Touch and move down or move up.

Copy/Paste a sheet: Touch and select from balloon. (Selector is available in the case it works.)

Sheet text is stored in pasteboard. You can paste it into another application like E-mail. When pasting, all numerical is fit to setting of the field. But locked field is skipped.

Selector: Thin color three square of interest sheet bottom is selector. You can choose by the touch (up or down) from the defined content.

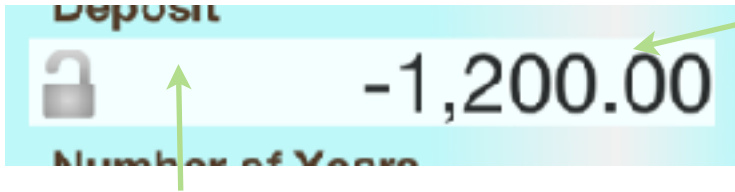
Clear this sheet numerical (excluding memory) or selected one numerical/memory.

System Settings (See P.7)

2 Memory

Numerical Input

The touch operation differs whether in blank or on numeric.



On numeric, value of below table is added to or subtracted from the touched digit .
When moving up or down, continuous operation is allowed, to adjust the value.
Only the touched digit is affected and other digits are kept.

In blank, right table functions are attached.

	Add 1 in front of highest digit	
Insert 1 digit '0' last	Copy/Paste (See below)	Delete last 1 digit
	Switch plus and minus	

	+2(-8)	
Insert 1digit	+1(-9)	Delete 1digit
	+9(-1)	

Copy/Paste a numeric

- (1) Touch blank in front of the numeric you want to copy. It becomes thin color.
 - (2) Touch destination numeric field. The value (1) is copied. Or touch again same (1). The value is stored in pasteboard.
 - (3) At no input situation on the input field, by a touch blank in front of numeric guide, the value in pasteboard is pasted.
- The memory button is possible to use instead of numeric.

Interest sheet is automatically calculated when whole except one is filled.

By 2 place entries in % sheet, elsewhere are calculated.

Total sheet calculation is done when that can be calculated.

Interest calculation sheet

This chapter explanation is required part only compared with the general financial calculator.

The image shows a financial calculator interface with several input fields and a result field. The fields are as follows:

- Present Value (Savings):** -100,000.00
- Interest rate(%)/Year:** 1.20
- Deposit:** 0.00
- Number of Years:** 180./365
- Future Value (Recieve):** 100,591.78
- Interest/Year:** 0
- Deposit/Year:** 365
- Deposit at:** End

Annotations with green arrows point to the following fields:

- Present Value (Savings): -100,000.00
- Interest rate(%)/Year: 1.20
- Number of Years: 180./365
- Deposit/Year: 365

At the bottom of the interface, there are four icons: a gear (settings), a club (share), a heart (favorites), and a 'C' (clear).

Enter outgo money to the financial institution by negative, and income money from it by positive. Calculation result display also follow the rule.

Mainly in the interest rate, there are cases calculation is terminated even if there is solution mathematically. The value is judged no meaning. (In order to avoid unresponsive)

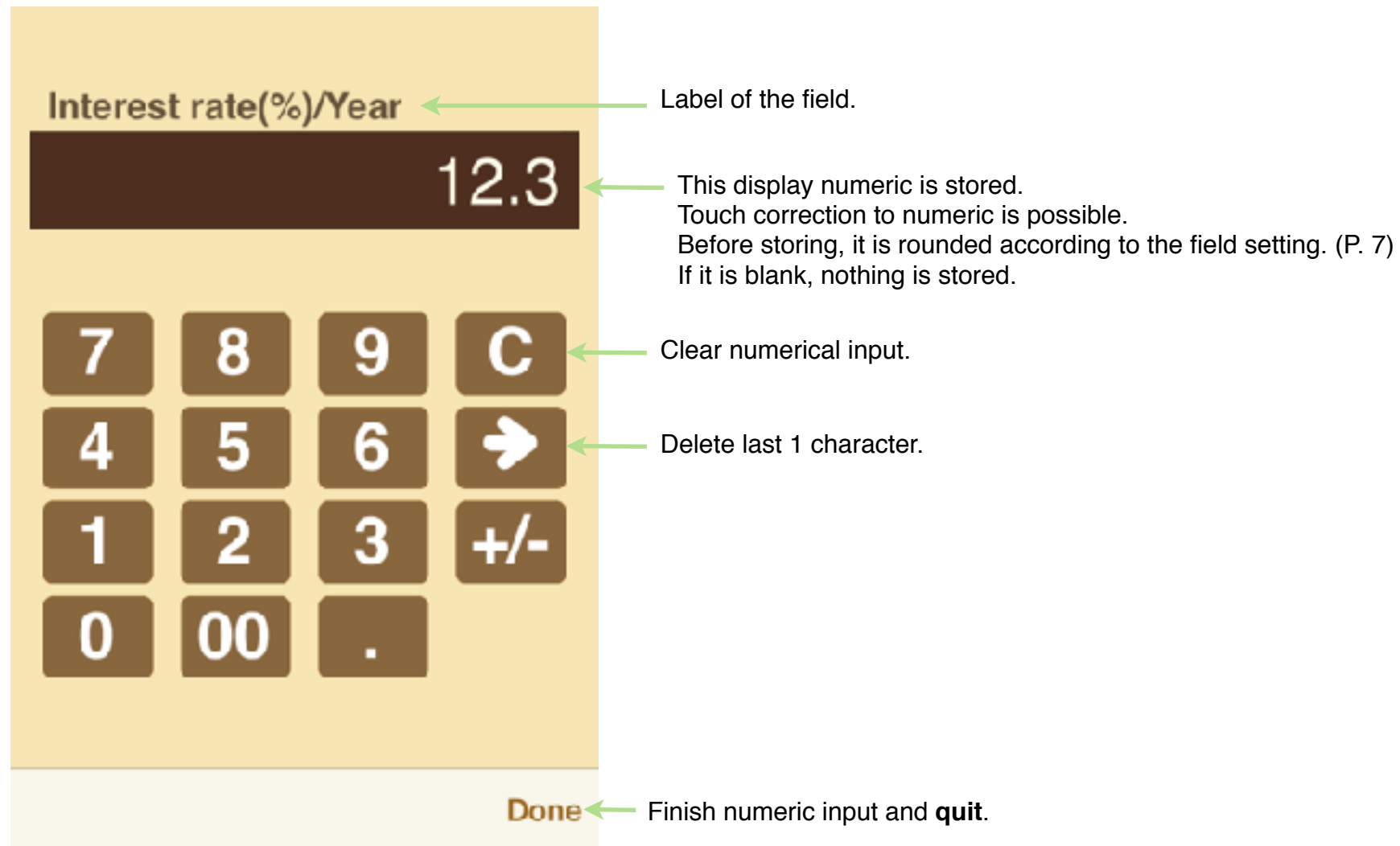
This application demands the number of years, instead of the number of periods (in general financial calculator).

If the known number is the number of periods, or if the number of periods is necessary as result, this button convert the value to fraction. However, since fraction display is used only convenience of this situation, it becomes decimal at copy/paste of the sheet, or at next launch of this app.

If you want to see the number of periods again, you have to set it the result field and press this button.

When it is 0, simple interest calculation is done. Otherwise, compound interest.

Keyboard



System Settings



Numeric is classified 3 kinds(Money/Rate(%)/Amount). Choose **rounding digit** for each.

Rounding rule is same in all numeric. (Round down/Round off/Round up)

Decimal point/separator type

- Blank: default of the unit
- ., : 1,234,567,890.
- ., : 1.234.567.890,
- . : 1 234 567 890.
- , : 1 234 567 890,
- ' : 1'234'567'890.

Separator location

- : 1234567890.
- 3-3-3 : 1,234,567,890.
- 2-2-3 : 1,23,45,67,890.
- 4-4-4 : 12,3456,7890.

Number type

20 type numerics are available and switch by touch.

Finish this setting screen and **quit**.

Reset: Use it only when you want to initialize this application.

Reload button: Return to the situation this application starts.

Calculation hint

Total sheet is designed to do simple Addition/Subtraction/Multiplication/Division.

Like below examples, after setting result field location, input 2 numerical.

Addition/Subtraction

12+35=47 example.

(47-35=12, 47-12=35 are input result field location difference.)

Multiplication/Division

420÷12=35 example.

(35×12=420, 420÷35=12 are input result field location difference.)

% sheet is designed to do simple percent calculation of normal calculator.

Like below examples, input 2 numerical. (Notice plus/minus sign.)

Percent-Plus

120+25%150 example.

(120×25%30, 30÷25%120 are input result field location difference.)

Percent-Minus

120-25%90 example.

(120× -25% -30, -30÷ -25%120 are input result field location difference.)

Price1	12.00
Amount1	0,000,000,000.
Price2	35.00
Amount2	0,000,000,000.
Total	47.00

Price1	35.00
Amount1	12.
Price2	00,000,000.00
Amount2	0,000,000,000.
Total	420.00

Fees Excluded	150.00
Fees Included	120.00
Fees	-30.00
Fees Rate(/Fees In. %)	-25.00

Fees Excluded	90.00
Fees Included	120.00
Fees	30.00
Fees Rate(/Fees In. %)	25.00

Attached calculations in this Application

This application is specialized to 'Time value of money' calculation. By scrolling right and left, you can switch the sheet to other sheet.

1. 'Time value of money' 3 sheets

By scrolling up and down, you can switch to other guidance (4 kinds * 2[year or period], calculation is the same) in the sheet.

Present Value (Savings)		
Present Value	-10,000.00	
Interest Rate(%)/Year	5.00	
Deposit	-100.00	
Number of Years	10.	
Future Value (Receive)	31,998.32	
Interest/year	Deposits/year	Deposit at
12	12	End

Present Value (Loan)		
Present Value	10,000.00	
Interest Rate(%)/Year	10.00	
Payment	-96.50	
Number of Years	20.	
Future Value (Left)	-0.00	
Interest/year	Payment/year	Payment at
12	12	End

Present Value (Annuity)		
Present Value	-72,124.37	
Interest Rate(%)/Year	3.00	
Withdrawal	400.00	
Number of Years	20.	
Future Value (Left)	-0.00	
Interest/year	Withdrawal/year	Withdrawal at
12	12	End





Present Value (Savings)		
Present Value	-10,000.00	
Interest Rate(%)/Period	5.00	
Deposit	-100.00	
Number of Periods	10.	
Future Value (Receive)	31,998.32	
Interest/Prd	Deposits/Prd	Deposit at
12	12	End

Present Value		
Present Value	4.55	
Interest Rate(%)/Period	8.00	
Payment	0.00	
Number of Periods	100.	
Future Value	-10,000.00	
Interest/Prd	Payment/Prd	Payment at
1	1	End

2. Percent calculation for fees

Fees Excluded	
	1,080.00
Fees Included	
	1,200.00
Fees	
	120.00
Fees Rate (/Fees In. %)	
	10.00

3. Total calculation (2items)

Price1	
	9.00
Amount1	
	18.
Price2	
	4.00
Amount2	
	12.
Total	
	210.00

Modification history

Modifications → Ver1.0.1

- iOS7 adaptation.

Modifications → Ver1.2.0

- Whole review and modification. (Mainly visual problems and some bugs.)
- Add twitter button. (And Landscape view after tweet. Twin screen on i-Pad, or enlarge number on i-Phone)

Modifications → Ver1.3.0

- Multi-language and customize of guidance.
- Available all numeric code in iOS.

Modifications → Ver1.4.0

- iOS8/9 adaptation.
 - Rise Landscape view to basic function (+ i-Pad multitask).
 - Handoff.
- The function after tweet changes. (Left-handed keyboard and customize of guidance.)
- Right/left operations on numeric change to delete/insert.
- Touch operation on keyboard numeric is allowed.
- Change number of years
- Improvement of some operation.
- Some bug fix.

Modifications → Ver1.4.1

- Enlarge rate calculation range.
- When payment time is 360/365, denominator of the fraction bug fix.
- Arabic/Hebrew label message.
- iPad Pro icon
- Some improvement of usability.

Modifications → Ver1.5

- In input of Fraction, touch operation becomes to hold fraction shape.
- Delete twitter button because iOS11 or after doesn't support it.
- iPhoneX/XR/XS type display.