

# free42 Date Tools

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## 1 Metadata

The home for this HTML file is: <https://richmit.github.io/hp42/date.html>

A PDF version of this file may be found here: <https://richmit.github.io/hp42/date.pdf>

Files related to this document may be found on github: <https://github.com/richmit/hp42>

Directory contents:

<b>src</b>	-	The org-mode file that generated this HTML document
<b>src_42s</b>	-	Ready to convert source listings for 42s code in this document
<b>docs</b>	-	This html document
<b>bin</b>	-	Importable RAW program files

## 2 Introduction

Aside from the date/time conversion routines, the rest is just wrappers for built in functions to make them print results when called from a program. Why? I wanted to put things like **DATE** in a nested custom menu, and have them print the date just as if I had directly put the function in a custom menu. ;) Now that free42 has put these into a separate catalog menu, these are somewhat obsolete.

## 3 Functionality

### 3.1 The main menu

Menu	Prog	Description
DATE	LBL 95	Current date*
TIME	LBL 88	Current time*
UTIME		Return current UNIX date/time integer to stack
□□□□		
DT→U		Convert a date (Y) & time (X) pair to a UNIX date/time integer
U→DT		Convert a UNIX date/time integer into date (Y) & time (X) pair
DATE	LBL 95	Current date*
□□□□		
JDATE		Return current Julian day number to stack
□□□□		
D→J		Convert a date to a Julian day number
J→D		Convert a Julian day number to date*
DATE+	LBL 92	Just like built in function*
DDAYS		Just like built in function
DOW	LBL 91	Just like built in function*
□□□□		
□□□□		
□□□□		

Notes: \* Result is both printed and pushed to the stack

### 3.2 Menu Code

The menu code is generated by the following bit of elisp. You must first define the `MJR-generate-42-menu-code` and `MJR-custom-x-gen` by evaluating the code blocks in the [hp42s-meta.org](http://hp42s-meta.org) file.

```
(MJR-generate-42-menu-code "DMENU" 0 tbl 0 1 'stay 'up 'auto #'MJR-custom-gen-lab #'MJR-custom-gen-sub)
```

```

##### (DMENU)
#### DSC: Auto-generated menu program

LBL "DMENU"
LBL 01          #### Page 1 of menu DMENU
CLMENU
"DATE"
KEY 1 XEQ 95
"TIME"
KEY 2 XEQ 88
"UTIME"
KEY 3 XEQ "UTIME"
"DT-U"
KEY 5 XEQ "DT-U"
"U-DT"
KEY 6 XEQ "U-DT"
KEY 7 GTO 03
KEY 8 GTO 02
KEY 9 GTO 00
MENU
STOP
GTO 01
LBL 02          #### Page 2 of menu DMENU
CLMENU
"DATE"
KEY 1 XEQ 95
"JDATE"
KEY 3 XEQ "JDATE"
"D-J"
KEY 5 XEQ "D-J"
"J-D"
KEY 6 XEQ "J-D"
KEY 7 GTO 01
KEY 8 GTO 03
KEY 9 GTO 00
MENU
STOP
GTO 02
LBL 03          #### Page 3 of menu DMENU
CLMENU
"DATE+"
KEY 1 XEQ 92
"DDAYS"
KEY 2 XEQ 04
"DOW"
KEY 3 XEQ 91
KEY 7 GTO 02
KEY 8 GTO 01
KEY 9 GTO 00
MENU
STOP
GTO 03
LBL 00 #### Application Exit
EXITALL
RTN
LBL 04          #### Action for menu key DDAYS
DDAYS
RTN
#### Free labels start at: 5

```

## 4 App Code

```

#####
#### DSC: Interactive Current Date
#### NAM: IDATE
#### OUT: X: Date encoded as a real
#### SFX: Prints date even when called from a program
#### UPD: 2021-03-16
LBL 95
FUNC 01          @### REQ:free42>=2.5.24

```

```

L4STK          @### REQ:free42>=3.0
DATE           @### REQ:free42>=1.4.66
"Date: "
ADATE          @### REQ:free42>=1.4.66
AVIEW
RTN

```

```

#####
@@@ DSC: Interactive Current Time
@@@ NAM: ITIME
@@@ OUT: X: Time in H.MM.SS format
@@@ SFX: Prints time even when called from a program
@@@ UPD: 2021-03-16
LBL 88
FUNC 01        @### REQ:free42>=2.5.24
L4STK          @### REQ:free42>=3.0
TIME           @### REQ:free42>=1.4.66
"Time: "
ATIME          @### REQ:free42>=1.4.66
AVIEW
RTN

```

```

#####
@@@ DSC: Current UNIX time
@@@ OUT: X: UNIX time
@@@ UPD: 2021-03-16
LBL "UTIME"
FUNC 02        @### REQ:free42>=2.5.24
L4STK          @### REQ:free42>=3.0
DATE           @### REQ:free42>=1.4.66
TIME           @### REQ:free42>=1.4.66
XEQ "DT-U"
RTN

```

```

#####
@@@ DSC: Convert date & time to UNIX time
@@@ IN: Y: Date
@@@ IN: X: Time
@@@ OUT: X: UNIX time
@@@ UPD: 2021-03-16
LBL "DT-U"
FUNC 21        @### REQ:free42>=2.5.24
L4STK          @### REQ:free42>=3.0
FS? 67         @@@ In Y.MD mode
1970.0101
FC? 67         @@@ Not in Y.MD mode
1.011970       @@@ Works for M.DY & D.MY
RCL ST Z
DDAYS          @### REQ:free42>=1.4.66
24
x
X<>Y
-HR
+
3600
x
RTN

```

```

#####
@@@ DSC: Interactive U-DT (prints date & time)
@@@ IN: X: UNIX time
@@@ OUT: Y: Date
@@@ OUT: X: Time
@@@ SFX: Prints date & time even when called from a program
@@@ UPD: 2021-03-16
LBL "U-DT"
FUNC 12        @### REQ:free42>=2.5.24
L4STK          @### REQ:free42>=3.0
3600
÷
RCL ST X
24
÷
IP
FS? 67         @@@ In Y.MD mode
1970.0101

```

```

FC? 67          @@@@ Not in Y.MD mode
1.011970        @@@@ Works for M.DY & D.MY
X<>Y
DATE+          @@@# REQ:free42>=1.4.66
X<>Y
24
MOD             @@@# REQ:free42>=1.4.66
~HMS
X<>Y
"Date:  "
ADATE          @@@# REQ:free42>=1.4.66
X<>Y
"|-[LF]Time: "
ATIME          @@@# REQ:free42>=1.4.66
AVIEW
RTN

```

```

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

```

```

@@@ DSC: Interactive DATE+ (prints date)
@@@ NAM: IDATE+
@@@ IN:  Y: Date
@@@ IN:  X: Integer
@@@ OUT: X: Date + Integer
@@@ UPD: 2021-03-16

```

```

LBL 92
FUNC 21          @@@# REQ:free42>=2.5.24
L4STK           @@@# REQ:free42>=3.0
DATE+           @@@# REQ:free42>=1.4.66
"Date:  "
ADATE          @@@# REQ:free42>=1.4.66
AVIEW
RTN

```

```

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

```

```

@@@ DSC: Interactive DOW (prints day)
@@@ NAM: IDOW
@@@ IN:  X: Date
@@@ OUT: X: Integer
@@@ SFX: Prints day of week even when called from a program
@@@ UPD: 2021-03-16

```

```

LBL 91
FUNC 11          @@@# REQ:free42>=2.5.24
L4STK           @@@# REQ:free42>=3.0
DOW             @@@# REQ:free42>=1.4.66

```

```

"Day of Week:  "

```

```

70
+
XEQ IND ST X
AVIEW
RTN

```

```

LBL 70

```

```

"|-SUN"

```

```

RTN

```

```

LBL 71

```

```

"|-MON"

```

```

RTN

```

```

LBL 72

```

```

"|-TUE"

```

```

RTN

```

```

LBL 73

```

```

"|-WED"

```

```

RTN

```

```

LBL 74

```

```

"|-THR"

```

```

RTN

```

```

LBL 76

```

```

"|-FRI"

```

```

RTN

```

```

LBL 77

```

```

"|-SAT"

```

```

RTN

```

```

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

```

```

@@@ DSC: Today's Julian day
@@@ OUT: X: Julian day for today
@@@ UPD: 2021-03-16

```

```

LBL "JDATE"
FUNC 01          @### REQ:free42>=2.5.24
L4STK           @### REQ:free42>=3.0
DATE            @### REQ:free42>=1.4.66
XEQ "D→J"
RTN

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@ DSC: Interactive J→D (prints date)
@@@@ NAM: J→D
@@@@ IN:  X: Date
@@@@ OUT: X: Julian day
@@@@ UPD: 2021-03-16
LBL "J→D"
FUNC 11          @### REQ:free42>=2.5.24
L4STK           @### REQ:free42>=3.0
2440587.5
-
FS? 67          @@@@ In Y.MD mode
1970.0101
FC? 67          @@@@ Not in Y.MD mode
1.011970        @@@@ Works for M.DY & D.MY
X<>Y
DATE+           @### REQ:free42>=1.4.66
"Date: "
ADATE           @### REQ:free42>=1.4.66
AVIEW
RTN

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@ DSC: Today's Julian day
@@@@ NAM: D→J
@@@@ OUT: X: Julian day for today
@@@@ UPD: 2021-03-16
LBL "D→J"
FUNC 11          @### REQ:free42>=2.5.24
L4STK           @### REQ:free42>=3.0
FS? 67          @@@@ In Y.MD mode
1970.0101
FC? 67          @@@@ Not in Y.MD mode
1.011970        @@@@ Works for M.DY & D.MY
X<>Y
DDAYS           @### REQ:free42>=1.4.66
2440587.5
+
RTN

END

```

5 EOF