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How To Create A Program
On T.I.-92 Calculators

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HOW TO CREATE A PROGRAM ON T.I.-92 CALCULATORS

Here it is a program created on T.I.-92 Graphing Calculator to simplify a given fraction. The program has two inputs: N (the numerator) and D (the denominator) of the initial fraction, and two outputs: a (the numerator) and b (the denominator) of the simplified fraction. Also, the program tells you if a fraction is undefined.

The steps are the following:
- press APPS (applications);
- move the menu bar down and select 7: Program Editor;
- press Enter;
- move the new menu bar down and select 3: New (new program);
- press Enter;
- move this other menu bar down (using {) to: Variable and type your program’s name, say FRACT (fraction);
- press Enter twice;

the first two lines of your program and the last line of the program arc displayed on the screen; type n, d on the first line in between the empty parentheses of the title, i.e. FRACT (n,d), where n, d are parameters of the program (n is the numerator, d is the denominator);
- press F2 and select 9: © (which means comment: it is ignored by the calculator, but is useful to someone reading the program);
- press Enter to move down to the next line;
- press F3 and select 2: Disp (display);
- press Enter; hence Disp will be pasted up in the program;
- type on the same line “N=”, n, “D=”, d, where N is the numerator and D the denominator of the fraction;
- press Enter for moving again to the next line;
- press F2 and select 2: If ... then;
press Enter and select 2: If ... then ... else ... endif, press Enter again;
on the screen you will get three new lines (related to IF instruction);
type, after If, d = 0
- press F3 and select 2: Disp;
press Enter;
- type "undefined fraction";
- use the ↓ arrow to move to the next line after Else
- type n/(gcd(n,d)) → a;
you get gcd from 2nd MATH, then select 1: Number, then select
C: gcd(); gcd is the greatest common divisor;
you get →, which means store, from STO→;
- similar thing; type on the next line: \( \frac{d}{\gcd(n,d)} \rightarrow b \)
- press Enter;
- press F3, select 2: Disp, press Enter;
- type "Simplified fraction is";
- on the next line: press F3, select 2: Disp, press Enter;
- type \( a, \frac{b}{d} \);
- type 2nd: Quit to exit the program.

* The program will look on the screen in the following way:

```
: fract(n,d)
: Prgm
: © This program simplifies a fraction.
: Disp "N=", "D=", d
: If d = 0 Then
: Disp "Undefined fraction"
: Else
: n/(gcd(n,d)) → a
: d/(gcd(n,d)) → b
: Disp "Simplified fraction is"
: Disp a, '/', b
: EndIf
: EndPrgm
```

* Now, to call the program, in the home page, type:
FRACT(8,0) and press Enter.
The answer, you'll get, is: undefined fraction, because 8 is undefined. Press 2nd[Quit] to exit the Prgm 10's page.

Try again by typing, for example:

FRACT (42,54) and press ENTER.

The new answer on the screen is:

\[
\begin{align*}
\text{N} &= 42 \\
\text{D} &= 54 \\
\text{Simplified fraction is} &= \frac{7}{9} \\
\text{i.e.} \quad 42 &= \frac{7}{9} \\
\quad 54 &= 9
\end{align*}
\]