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Introduction

Disclaimer

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Variables

types of variables

name	Lazarus data_type	range	content	example
Integer	integer	-2.147.483.648 to 2.147.483.647	whole numbers	int1 := 10;
Float	real	1.5E-45 to 3.4E38	decimal numbers	Float1 := 1.23;
Double	double	5.0E-324 to 1.7E308	scientific numbers	Double1 := 1.23456;
String	string	text	text	String1 := 'Test';
Char	char	single symbol	single symbol	Char1 := 'c';
Boolean	boolean	True, False	True, False	Bool1 := True;

More datatypes can be found at https://wiki.lazarus.freepascal.org/Data_type.

define variables

Variables can be defined in general by:

```
var
  name_of_variable:data_type;
```

//a more specific example:

```
var
  Int1, Int2, Int3:integer;
  float1, float2, float3:real;
  string1, string2 :string;
```

If you dont know which datatype to use look at [types of variables](#).

use variables

assign values:

```
name_of_variable:=value;
```

//a more specific example:

```
Int1:= 1234;
Float1:= 12.3456;
```

Buttons

button interaction

```

procedure TForm.Button1Click(Sender: TObject);
begin
    //commands executed by clicking on button

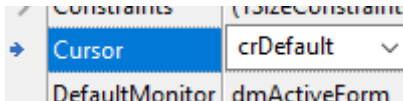
end;

```

change cursor on hover

Go to properties tab on the left side.

Search for Cursor property. Select the cursor you want.



TEdit

grab content of TEdit

Use `strtoint()` or `strtofloat()` to convert the string of a TEdit to an integer or a float.

```

name_of_variable:=strtoint(edit1.text); // convert string of Edit1 to int
name_of_variable:=strtofloat(edit1.text); // convert string of Edit1 to float

```

display results in TEdit

Use `inttostr()` or `floattostr()` to convert the string of a TEdit to an integer or a float.

```

Edit1.Text:=inttostr(name_of_variable);
// convert int to string and insert it into Edit1

Edit1.Text:=floattostr(name_of_variable);
// convert float to string and insert it into Edit1

Edit1.Text:=floattostrF(d, ffFixed, 10,2);
// convert float to string and display exactly two decimal points

```

DIV and MOD

How to use DIV

Use DIV to divide two numbers with each other.

```

result:=number1 DIV number2;
// divide number1 by number2
result:=9 DIV 4;
// result would be 2 because you can divide 9 by 4 and get 2 with decimal points
// DIV only outputs whole numbers (int)

```

How to use MOD

MOD is kind of the opposite of DIV.

```

result:=number1 MOD number2;

```

```
// divide number1 by number2 and return remainder
// MOD gives you the reminder
```

Usind the example from DIV that means:

```
result:=9 MOD 4;
// result would be 1 because 9/4 is 2 and 2*4=8 and 9-8 is 1
```

More detailed Information can be found at <https://wiki.freepascal.org/Mod>.

IF and THEN

General format:

```
IF expression THEN
    statement1
ELSE
    statement2
```

One-way branch

```
if BooleanExpression then
    StatementIfTrue;
```

One-way branch with multiple statements

```
if BooleanExpression then
begin
    statement1;
    statement2;
end;
```

Two-way branch

```
if BooleanExpression then
    StatementIfTrue
else
    StatementIFFalse;
```

Two-way branch with multiple statements

```
if BooleanExpression then
    statement1;
    statement2;
else
    statement3;
    statement4;
```

More detailed Information can be found at
https://wiki.freepascal.org/Basic_Pascal_Tutorial/Chapter_3/IF.

Simple sorting

Sorting of the elements

```
a,b,c,switch: real;
```

```
if a>b then  
begin  
    switch:=b;  
    b:=a;  
    a:= switch  
end;
```

```
if a>c then  
begin  
    switch:=c;  
    c:=a;  
    a:= switch  
end;
```

```
if b>c then  
begin  
    switch:=b;  
    b:=c;  
    c:= switch  
end;
```

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<https://github.com/felixwittwer>