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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](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

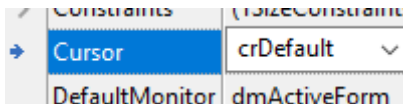
## button interaction

```
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 remainder
```

Using 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

# FW

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<https://github.com/felixwittwer>