

Functions

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So as of today(August 1st) nobody has sent me their source code for the calculator.. is it too hard? Is anybody actually doing any of these? O well.. ill keep them up casue maybe when the school year starts you people might be more interested..

the functions.. what is a function?

A function is a set of code that you only call one thing and it will do all of the code you specified.

```
--  
void function()  
{  
    //do this  
    // and that  
    // when function is called  
}
```

functions are really good for when there is something you have to do over and over again that is long to type, or a lot of commands. You will notice that the function above has the same layout as main does, there is the name, the parentheses, and the brackets. However main had int before it and this function has void in front of it.

A function can be sometimes treated like a variable, in that it has a value.

```
--  
  
int main()  
{  
    int a;  
    a = 3+three();  
    std::cout<< a;  
    return 0;  
}  
  
int three()  
{  
    return 3;  
}
```

the display for that would be 6. when int, or any sort of number defination is in from of the function name, it is expected that it will return a value which can be used in an equation, or assigned to a variable. If this is not clear please tell me and i will elaborate..

something else that is cool about a function, is that you can pass values to that function, so it can use them. This allows you to write something can be used by different values with relative ease, instead of rewriting everything for every value you are going to use.

```
--  
int add(int a,int b)  
{  
    return a+b;  
}  
--
```

if this were put into your program, you could just say `add(3,5)` and it would give you 8... you have to be careful, the variables that you put into the parentheses have to be the type you specified before. Example, you couldnt not pass two doubles through `add`, it would come out an error, or not give you the right answer if it did compile fine. So that is something to watch out for.

If you pass values, the function does not have to return something always,

```
--  
void displayInt(int a)  
{  
    std::cout<< a;  
}  
--
```

in the function above, we passed a variable to `displayInt`, and it will display the number on the screen.

If i did not explain something well enough, please email me and tell me, i will add more here..

now if u look at some of the previous programs, there is one command, `getchar()`, that has parentheses. This is because `getchar()` is a function that is defined in `stdio`. Many commands that you use are functions that are defined in you libraries..

this is the last tutorial in the `c/c++` basics for now.. at this point you should be just playing around, try and code simple things, math related programs are pretty good for right now, because you dont know how to do any of the graphics stuff yet..

there is so much that you can learn if you want to, and the internet is the best resource.. if there is something you are interested in learning... look it up!

For those that want a little more `c/c++` stuff.. look up arrays... i did not go into them because for the robot, they are not used as much, however they are something that can get pretty complicated if you get into them far enough. Also string manipulation is something that you can look into. Both are pretty basic, but can get very very involved...

next: programming the robot!!