

F:/Documents/MPLABxProjects/Lab 9 Stopwatch.X/newavr-main.c

```
//definitions
```

```
#define F_CPU 20000000UL
```

```
//include files
```

```
#include <util/delay.h>
```

```
#include <avr/io.h>
```

```
#include "functions.h"
```

```
int main (void)
```

```
{
```

```
    //declare variables
```

```
    int hundredths = 0;
```

```
    int disp_int;          //scratch variable
```

```
    char run = 0;
```

```
    //setup microcontroller
```

```
    setup();
```

```
    while (1) //repeat forever
```

```
    {
```

```
        //loading variables and displaying numbers
```

```
        disp_int = hundredths;
```

```
        display_digit (disp_int/1000,1);
```

```
        disp_int = disp_int % 1000;
```

```
        display_digit (disp_int/100,2);
```

```
        disp_int = disp_int % 100;
```

```
        display_digit (disp_int/10,3);
```

```
        display_digit (disp_int%10,4);
```

```
        display_digit('.',2);
```

```
        //increasing the number & running statements to test for buttons & lim
```

```
        if (run == 1)
```

```
        {
```

```
            hundredths++;
```

```
        }
```

```
        if ((PORTE_IN & 0b00000001) == 0)
```

```
        {
```

```
            run = 1;
```

```
        }
```

```
        if (hundredths == 9999)
```

```
        {
```

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```
        run = 0;
    }
    if ((PORTE_IN & 0b00000010) == 0)
    {
        run = 0;
    }
    if ((PORTE_IN & 0b00000100) == 0)
    {
        hundredths = 0;
    }

}

}
```