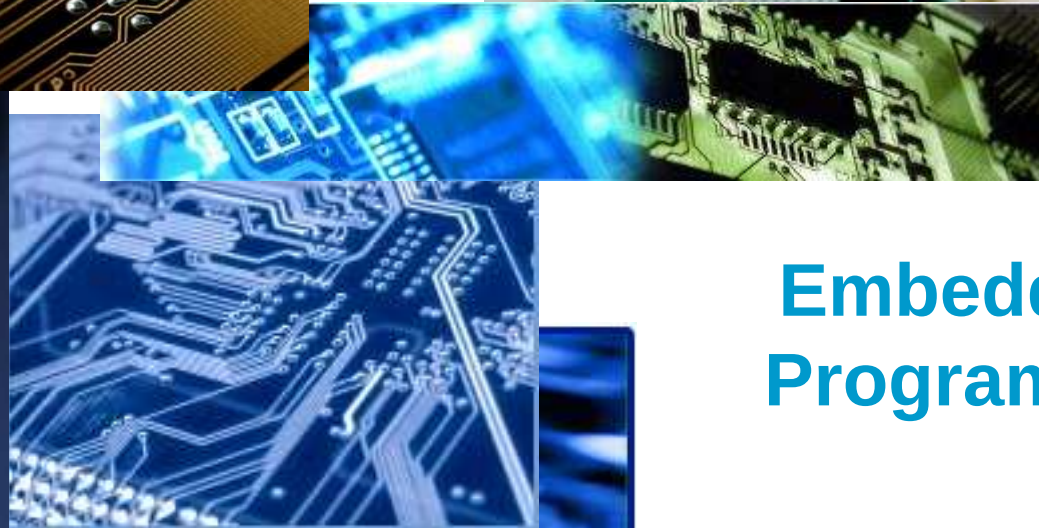
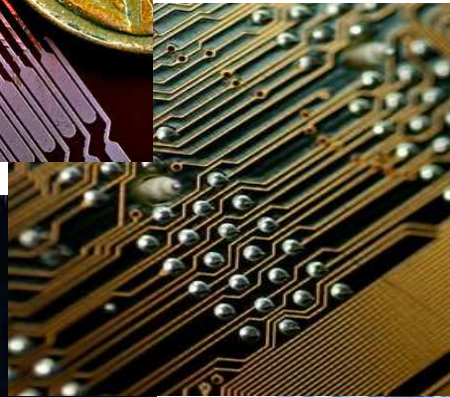
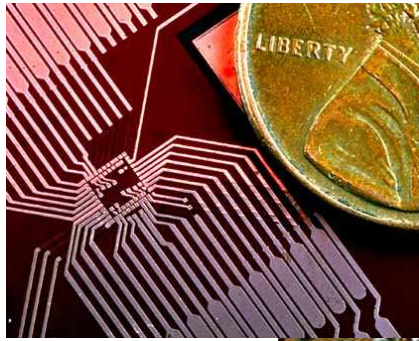




Embedded C Programming

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Agenda:

- Type Casting
- Functions
- Variable Scope and Life Time
- Interactive Questions



Agenda:



Type Casting

- Functions
- Variable Scope and Life Time
- Interactive Questions

Type Casting:

- Type casting is to put variable in different type during run time
- Example:

```
main()
{
    char y;
    short x;
    x = (short) y;
}
```



Agenda:

- Type Casting
- ➔ Functions
- Variable Scope and Life Time
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Functions:

- Function prototype:

Return_type function_name (argument_type
Argument_name);

- Example:

short myFunc(char x);

- Argument name in the function prototype is optional, only the argument type is a must.

short myFunc(char);

Functions:

- Function Body:

- Example:

```
short myFunc(char x)
{
    short y;
    y=x*x;
    return(y);
}
```

Functions:

- Function Calling:

- Example:

```
main()
{
    short y;
    char x=5;
    y= myFunc(x);
}
```

Functions:

- Function input parameters:
there are two methods for passing parameters for a function:
 - Stack
 - CPU register



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- Type Casting
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Variables Scope and Life Time:

- **const** keyword
- **static** keyword
- Static lifetime
- Difference between **const** and **#define**

```
extern short Var1
char Var2;
static char Var3;
void F1(void)
{
    char Var4;
    .....
}
void F2(void)
{
    static char Var5;
    .....
}
```



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Interactive Questions

Interactive Questions

- Point out the error in the following code?

```
int func(int a, int b)
{
    int a;
    a=20;
    return a;
}
```

Interactive Questions

- There is a mistake in the following code. Add a statement in it to correct the mistake:

```
main()
{
    int a;
    a=(int)f(10,3.14);
}
float f(int aa, float bb)
{
    return((float)aa + bb);
}
```

Interactive Questions

- Point out the error in the following code?

```
void f(void);  
main()  
{  
    int a=10;  
    a=f();  
}  
void f()  
{  
    printf("Hi");  
}
```

Interactive Questions

- Point out the error in the following code?

```
int f(int a);
main()
{
    int b;
    b=f(20);
}
int f(int a)
{
    a>20: return(10) : return(20);
}
```

Interactive Questions

- How many times the following program would print “error”?

```
main()
{
    printf("\n error");
}
```

- A. Infinite number of times
- B. 32767 times
- C. 65535 times
- D. Till the stack overflow



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