CSE 103
Structured Programming

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Course Plan [Draft]

- Bitwise Operators
- Functions
- Scope of Variables
- One Dimensional Arrays
- String
- Multi-dimensional Arrays
- Recursion
- Structure
- File I/O

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Bitwise Operators

Operator	Description
&	Binary AND Operator copies a bit to the result if it exists in both operands.
|	Binary OR Operator copies a bit if it exists in either operand.
^	Binary XOR Operator copies the bit if it is set in one operand but not both.
~	Binary Ones Complement Operator is unary and has the effect of 'flipping' bits.
<<	Binary Left Shift Operator. The left operands value is moved left by the number of bits specified by the right operand.
>>	Binary Right Shift Operator. The left operands value is moved right by the number of bits specified by the right operand.

```
unsigned int a = 60;      /* 60 = 0011 1100 */
unsigned int b = 13;      /* 13 = 0000 1101 */
int c = 0;

c = a & b;        /* 12 = 0000 1100 */
printf("Line 1 - Value of c is %d\n", c );

c = a | b;        /* 61 = 0011 1101 */
printf("Line 2 - Value of c is %d\n", c );

c = a ^ b;        /* 49 = 0011 0001 */
printf("Line 3 - Value of c is %d\n", c );

c = ~a;           /*-61 = 1100 0011 */
printf("Line 4 - Value of c is %d\n", c );

c = a << 2;     /* 240 = 1111 0000 */
printf("Line 5 - Value of c is %d\n", c );

c = a >> 2;     /* 15 = 0000 1111 */
printf("Line 6 - Value of c is %d\n", c );
```

Functions

```
/* function returning the max between two numbers */
int max(int num1, int num2)
{
   /* local variable declaration */
   int result;

   if (num1 > num2)
      result = num1;
   else
      result = num2;

   return result;
}
```

Functions

```
int main ()
{
   /* local variable definition */
   int a = 100;
   int b = 200;
   int ret;

   /* calling a function to get max value */
   ret = max(a, b);

   printf( "Max value is : %d\n", ret );

   return 0;
}
```

Functions

```
return_type function_name( parameter list )
{
   body of the function
}
```

One Dimensional Array