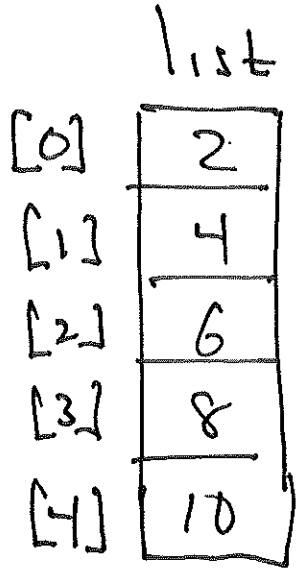
CMPS 10 11-23-10

Ex. Declaration and initialization

```
int list[5] = {2, 4, 6, 8, 10};
```




Ex. Same thing.

```
int list[] = {2, 4, 6, 8, 10};
```

# Logical Expressions

Comparison Operators:

| Symbol | Ex. | Value |
|---|---|---|
| == | 1==2 | false |
| < | 1<2 | true |
| <= | 1<=2 | true |
| > | 1>2 | false |
| >= | 1>=2 | false |
| != | 1!=2 | true |

Note:

= is not a comparison op.

It is assignment op.

# Logical operators:

| op | name | Ex | value |
|---|---|---|---|
| && | and | (1<2)&&(3>4) | false |
| \|\| | or | (1<2)\|\|(3>4) | true |
| ! | not | !(1==2) | true |

# Conditional operations

```
if(cond)
    stmt;
stmt;
⋮
```

```
if(cond) {
    stmt;
    ⋮
    stmt;
}
stmt;
⋮
```

note:

```
{
    stmt;
    :
    stmt;
}
```

Compound Statement

or

block

```
if(cond)
    stmt;
else
    stmt;
stmt;
```

```
if(cond){
    stmt;
    :
    stmt
}else{
    stmt;
    :
    stmt;
}
stmt;
```

note 1: the assignment op = forms an expression, with a value

```
x = 6;
```


Value of expression is the value assigned i.e. 6

Ex. `x = (y = 6);`


note 2: when a numeric value is supplied where a boolean value is expected, 0 is converted to false, non-zero values convert to true.

## Loops :

- while
- do-while
- for

```
:
while (cond)
    stmt;
stmt;
:
```

```
while(cond) {
    stmt;
    :
    stmt;
}
stmt;
```

Ex. Pseudo-code

```
Sum = 0
i = 1
while  i ≤ 10
      Sum = Sum + i
      i = i + 1
Print Sum
```

C++ (inside fcn main)

```
int sum, i;
Sum = 0;
i = 1;
while ( i <= 10) {
      sum = sum + i;
      i = i + 1;
}
Cout << sum << endl;
```

```
do
    stmt;
while(cond);
stmt;
```

```
do {
    stmt;
    :
    stmt;
} while(cond);
stmt;
```

Ex.

```
int sum, i;
sum = 0;
i = 1;
do {
    sum = sum+i;
    i = i+1;
} while (i <= 10);
cout << sum << endl;
```

```
for (init.LCV; test LRC; increment LCV){
    stmt;
    .
    .
    .
    stmt;
}
stmt;
```

Ex.

```
int sum, i;
sum = 0;
for( i=1; i<=10; i=i+1){
    sum = sum+i;
}
Cout << sum << endl;
```

Ex.

```
int i;
int list[10]={2,4,6,8,10,12,14,16,18,20};
i=0;
while (i<10){
    cout<<list[i]<<' ';
    i=i+1;
}
cout<<endl;
```