

MC140: lecture #7

today's topic:

*pre and post incrementing and
decrementing
if and if/else
flow charts
pseudo code*

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pre and post incrementing and decrementing

- pre-increment, pre-decrement:
 - operate, then use value
 - examples:
`++i; --i;`
- post-increment, post-decrement:
 - use value, then operate
 - examples:
`i++; i--;`

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an example where it matters.

```
#include <stdio.h>
int main( void ) {
    int i;
    while ( i <= 3 ) {
        printf( "i = %d\n", ++i );
    } /* end of while */
} /* end of main() */
```

output is:
i = 2
i = 3
i = 4

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testing values.

```
#include <stdio.h>
int main( void ) {
    int x;
    printf( "enter a number:" );
    scanf( "%d",&x );
    if ( x % 2 == 0 ) {
        printf( "your number is even\n" );
    } /* end of if */
} /* end of main() */
```

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if syntax.

```
if ( <condition> ) {
    <statement1>;
    <statement2>;
    ...
} /* end of if */
```

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making choices: if /else.

```
#include <stdio.h>
int main( void ) {
    int x;
    printf( "enter a number:" );
    scanf( "%d",&x );
    if ( x % 2 == 0 ) {
        printf( "your number is even\n" );
    } /* end of if */
    else {
        printf( "your number is odd\n" );
    } /* end of else */
} /* end of main() */
```

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if/else syntax.

```
if ( <condition> ) {
    <statement1>;
    <statement2>;
    ...
} /* end of if */
else {
    <statement1>;
    <statement2>;
    ...
} /* end of else */
```

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making more than two choices: if/elseif/else.

```
#include <stdio.h>
int main( void ) {
    int x;
    printf( "enter a number:" );
    scanf( "%d",&x );
    if ( x == 0 ) {
        printf( "your number is zero\n" );
    }
    else if ( x % 2 == 0 ) {
        printf( "your number is even\n" );
    } /* end of if */
    else {
        printf( "your number is odd\n" );
    } /* end of else */
} /* end of main() */
```

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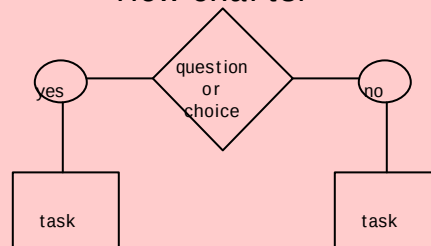
if/elseif/else syntax.

```
if ( <condition> ) {
    <statement1>;
    <statement2>;
    ...
} /* end of if */
else if ( <condition> ) {
    <statement1>;
    <statement2>;
    ...
} /* end of else if */
else {
    <statement1>;
    <statement2>;
    ...
} /* end of else */
```

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flow charts.



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pseudo code.

```
while ( user wants more ) {
    read number from user
    check if number is sentinel value
    if it is, then set loop sentinel to FALSE
    else, add number to sum and print
        number and current sum
}
print grand total
```

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reading.

- material covered today:
 - DD: 3.1-3.6
- *assignment #3 is out today*
- *assignment #3 is due next WED 7 FEB*
- *exam #1 is next FRI 9 FEB*

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