CIS*1500 Cheat Sheet

Compiling:

```
gcc -std=c99 -Wall -o <output> <input>
```

output = programName, input = codeFilename.c

Accepting command line arguments:

```
int main( int argc, char* argv[] )
```

argc = number of arguments
argcv = array of arguments

Hello Word:

```
#include <stdio.h>
int main(void)
{
    printf("Hello World!\n");
    return 0;
}
```

```
int i=0;
```

If Statement:

```
if ( i == -1 )
{
    /*code*/
}
else if ( i == 0 )
{
    /*code*/
}
else
{
    /*code*/
}
```

Switch Statement:

```
switch ( i )
{
    case -1:
        /*code*/
        break;
    case 0:
        /*code*/
        break;
    case 1:
        /*code*/
        break;
}
```

Conditionals:

int **==** int, int **!=** int	equals, does not equal
int **<** int, int **>** int	less/greater than
int **<=** int, int **>=** int	less/greater than or equals to

Int to Boolean coversion:

0	false
1	true

Boolean Operators:

bool **&&** bool	AND
bool **||** bool	OR
! bool	NOT

AND table:

true **&&** false	false
true **&&** true	true
false **&&** false	false

OR table:

true **||** false	true
true **||** true	true
false **||** false	false

NOT table:

! true	false
! false	true

For loop:

```
int i=0;
for ( i=0; i<10; i++ )
{
    /*code*/
}
```

While loop:

```
int i=0;
while ( i<10 )
{
    /*code*/
    i++;
}
```

Do-While loop:

```
int i=0;
do
{
    /*code*/
    i++;
} while ( i<10 );
```

User Input: int i; char string[100];

`scanf("%d", &i);`	`fgetc(stdin);`	`fgets(mystring, 100, stdin);`

Output:

`printf("hello");`	`fputc(c, stdout);`
`fprintf("hello", stdout);`	`fputs("hello", stdout);`

Format specifiers:

%d	int
%f	floating point
%c	character
%s	string
%p	memory address
%%	percent sign

%.2f will point a floating point to 2 decimal places

Declaring Functions:

```
returnValue functionName( inVars )
{
    /*code*/
}
```

Calling functions:

```
returnValue = functionName(inVars);
```

returnValue and inVars can be ***void***

Generating random numbers:

```
#include <time.h>
srand(time(NULL));
int randomNum = rand();
int random = rand()% BASENUM gives you a number between 0 and BASENUM-1
```

Common command line utilities:

- **ls** -lists the contents of the directory
- **cd *name*** -changes to the *name* directory
- **touch *name*** -creates and empty file called *name*
- **mkdir *name*** -makes a directory called *name*
- **rmdir *name*** removes a directory called *name* (it must be empty)
- **ls –la** -lists the contents of the directory with all the attributes and time stamps
- **cd ..** -changes to the parent directory
- **cd *name*** –changes to the subdirectory called *name*
- **mv *source location*** moves the *source* file to the *location.* Can be used to rename files
- **rm *name*** deletes the file called *name* cannot be used on directories
- **./programname** runs the program called *programname* (used for programs you write)