Lesson 3: Nested Loops

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Multiplication Table

```c
#include <stdio.h>
int main(void)
{
  int i,j;
  for(i=1;i<10;i++)
  {
    for(j=1;j<10;j++)
      printf("%3d",i*j);
    printf("\n");
  }
  return 0;
}
```

```
1  2  3  4  5  6  7  8  9
2  4  6  8 10 12 14 16 18
3  6  9 12 15 18 21 24 27
4  8 12 16 20 24 28 32 36
5 10 15 20 25 30 35 40 45
6 12 18 24 30 36 42 48 54
7 14 21 28 35 42 49 56 63
8 16 24 32 40 48 56 64 72
9 18 27 36 45 54 63 72 81
```

Plotting Stars (I)

```
***
***
***
***
***
***
```

```c
#include <stdio.h>
int main(void)
{
  int i,j;
  for(i=0;i<6;i++)
  {
    for(j=0;j<3;j++)
      printf("*");
    printf("\n");
  }
return 0;
}
```

Plotting Stars (II)

```
*
**
***
***
**
*
```

Let i be the number of *

```c
#include <stdio.h>
int main(void)
{
  int i,j,n;
  n=3;
  for(i=1;i<=n;i++) {
    for(j=0;j<i;j++)
      printf("*");
    printf("\n");
  }
  for(i=n;i>=1;i--) {
    for(j=0;j<i;j++)
      printf("*");
    printf("\n");
  }
  return 0;
}
```

Plotting Stars (II)

```
  *
 **
***
***
 **
  *
```

Let i be the number of ' '

```c
#include <stdio.h>
int main(void)
{
    int i,j,n;
    n=3;
    for(i=n-1;i>=0;i--) {
        for(j=1;j<=n;j++)
            if (j<=i) printf(" ");
            else printf("*");
        printf("\n");
    }
    for(i=0;i<n;i++) {
        for(j=1;j<=n;j++)
            if (j<=i) printf(" ");
            else printf("*");
        printf("\n");
    }
    return 0;
}
```