

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

for (preparation; condition;
before next)
{ statement; }

Flow of control

✓ | for (initial ; condition ; before next)
{ statement ; ... ; statement ; }

while (condition)
{ statement ; ... ; statement ; }

if (condition)
{ statement ; ... ; statement ; }

else — optional
{ statement ; ... ; statement ; }

Also

do { } while (...)

no use

switch () { ... }

useful.

BTW, as a last resort, email the
Wed 6/10 assignment to me
odunlain@**maths**.tcd.ie

text not html / ms word / screenshot.

While () { .. } simpler than for ()

```
int x;
x = 1;
while (x > 0)
{ x = 2 * x; }
printf("x is %d\n", x);
```

#include <stdio.h>
int main ()
{
}

INPUT

```
#include <stdio.h>
int main()
{
    int x; int count;
    count = 0;
    While (scanf("%d", &x) == 1)
    {
        printf("%d", x);
        ++count; // or count = count + 1
    }
    printf("%d numbers read\n", count);
}
```

Notes section 6

If statements

```
if ( )  
{ ... }
```

or

```
if ( )  
{ ... }  
else  
{ ... }
```

$\text{if } (m \% n == 0)$
 $\equiv$ if n divides m

```
int q, i;
```

```
q = 1;
```

```
for (i = 2; i < n; ++i)
```

```
    if (n % i == 0)  
    { q = 0; }
```

```
if (q == 1)  
{ printf("Yes\n"); }  
else  
{ printf("No\n"); }
```

Conditions $a < b$, $a \leq b$, $a == b$,
 $a \geq b$, $a > b$, $a != b$

They can be combined $\&\&$ and double ampersandⁿ
 $\|\$ or double bar
 $!$ not

Eg $1582 \leq y \dots$ Gregorian leap year

$(y \% 4 == 0) \&\& ((y \% 100 != 0) \|\ (y \% 400 == 0))$

Don't try this at home.

Double-precision numbers.

Declared	double
accuracy	~16 decimal places
constant	3.14159
printf	%f default 6 places
scanf	

```
double x;  
... scanf("%lf", &x) ...
```

↑ ↑
crucial