

floating-point imprecision

supersections

problem set 1

office hours

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```

➡ #include <stdio.h>

```
int main(void)
{
    printf("hello, world\n");
}
```



```
#include <stdio.h>
```

```
int main(void)
```

```
{
```



```
    printf("hello, world\n");
```

```
}
```

```
#include <stdio.h>
```

```
int main(void)
```

```
➡ {  
    printf("hello, world\n");  
➡ }
```

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```



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#include <stdio.h>
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int main(void)
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    printf("hello, world\n");
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#include <stdio.h>
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int main(void)
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{
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    printf("hello, world\n");
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}
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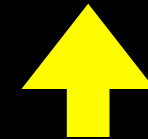
```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```



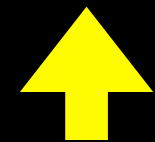
```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```



```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("hello, world\n");
```

```
}
```



```
#include <cs50.h>
#include <stdio.h>

int main(void)
{
    printf("state your name\n");
    string s = GetString();
    printf("hello, %s\n", s);
}
```

```
#include <cs50.h>
```

```
#include <stdio.h>
```

```
int main(void)
```

```
{
```

```
    printf("state your name\n");
```

```
    string s = GetString();
```

```
    printf("hello, %s\n", s);
```

```
}
```

```
#include <cs50.h>
#include <stdio.h>

int main(void)
{
    printf("state your name\n");
    string s = GetString();
    printf("hello, %s\n", s);
}
```

```
#include <cs50.h>
#include <stdio.h>

int main(void)
{
    printf("state your name\n");
    string s = GetString();
    printf("hello, %s\n", s);
}
```

types

bool

char

double

float

int

long long

string

...

types

bool

char

double

float

int

long long

string

...

format codes

`%c` `%i` `%f` `%lld` `%s` `...`

escape sequences

`\n` `\r` `\t` `\'` `\"` `\\` `\0` ...

functions

GetChar

GetDouble

GetFloat

GetInt

GetLongLong

GetString

printf

...

functions

GetChar

GetDouble

GetFloat

GetInt

GetLongLong

GetString

printf

...

functions

```
printf("hello, world\n");
```

conditions

```
if (condition)
{
    // do this
}
```

conditions

```
if (condition)
{
    // do this
}
else if (condition)
{
    // do that
}
```

conditions

```
if (condition)
{
    // do this
}
else if (condition)
{
    // do that
}
else
{
    // do this other thing
}
```

Boolean expressions

```
if (condition && condition)
{
    // do this
}
```

Boolean expressions

```
if (condition || condition)
{
    // do this
}
```


switches

```
switch (expression)
{
    case i:
        // do this
        break;

    case j:
        // do that
        break;

    default:
        // do this other thing
        break;
}
```

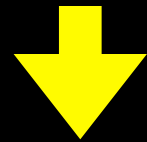
loops

```
for (initializations; condition; updates)
{
    // do this again and again
}
```

loops

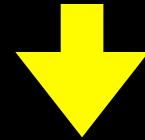
```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

loops



```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

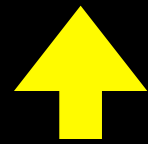
loops



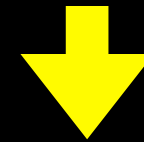
```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

loops

```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

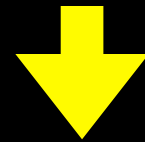


loops



```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

loops



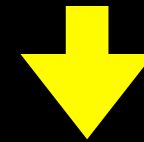
```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```


loops

```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

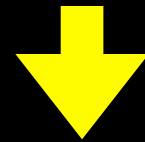


loops



```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

loops



```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```

loops

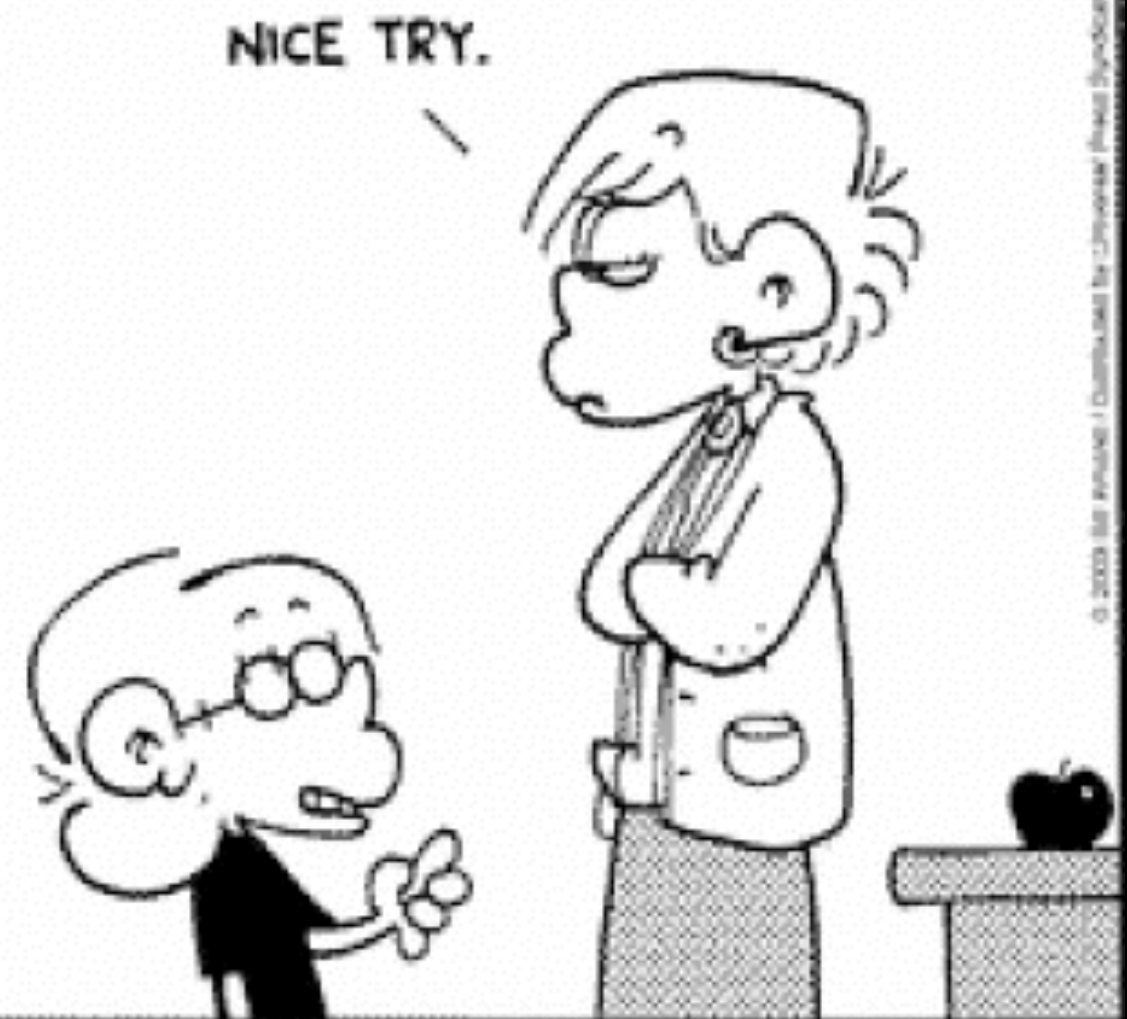
```
for (int i = 0; i < 50; i++)  
{  
    printf("%i\n", i);  
}
```



```
#include <stdio.h>
int main(void)
{
    int count;

    for (count = 1; count <= 500; count++)
        printf("I will not throw paper airplanes in class.");
    return 0;
}
```

AVENUE 10-3



integer overflow

128

64

32

16

8

4

2

1



128

64

32

16

8

4

2

1

0

0

0

0

0

0

0

0





B **Beats**

A **Buy**

4,000,000,000





Greetings from M.Gandhi, ruler
and King of the Indians...
Our words are backed
with NUCLEAR WEAPONS!





$$0 \div 0$$

“What's $0 \div 0$ ”

tap to edit

Imagine that you have 0 cookies and you split them evenly among 0 friends. How many cookies does each person get? See, it doesn't make sense. And Cookie Monster is sad that there are no cookies. And you are sad that you have no friends.

$0 \div 0 = \text{indeterminate}$



“What is $0 \div 0$ ”

tap to edit

$0 \div 0 = \text{indeterminate}$



Cookie Monster

@MeCookieMonster

 [Follow](#)

Me no know how to divide by zero, but me know how to divide cookies into crumbs!

3:35 PM - 30 Jun 2015



1,338



1,237

loops

```
while (condition)
{
    // do this again and again
}
```


loops

```
do  
{  
    // do this again and again  
}  
while (condition);
```

variables

```
int counter;  
counter = 0;
```

variables

```
int counter = 0;
```

functions

```
string name = GetString();  
printf("hello, %s\n", name);
```

MARIO
000700

1 x 01

WORLD
1-1

TIME
287







