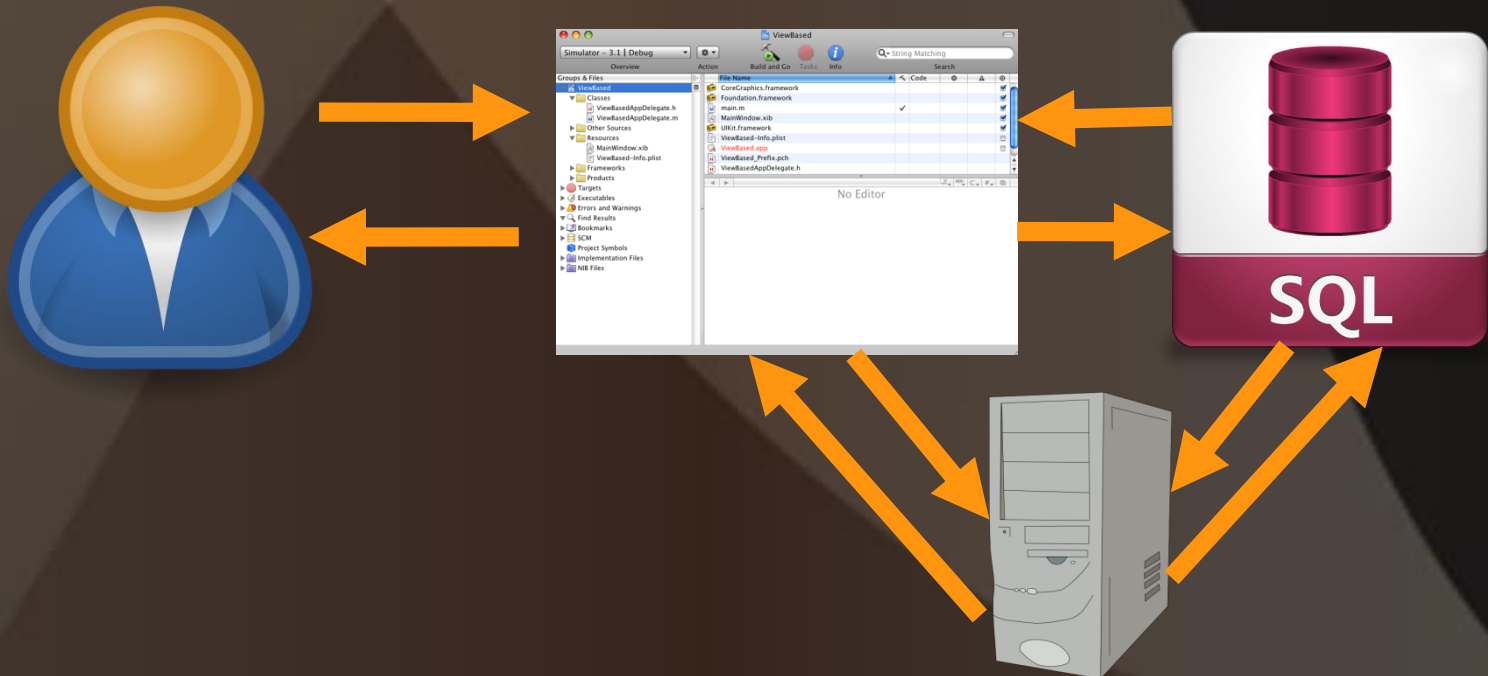


CS105 Lab 4: Intro to Python

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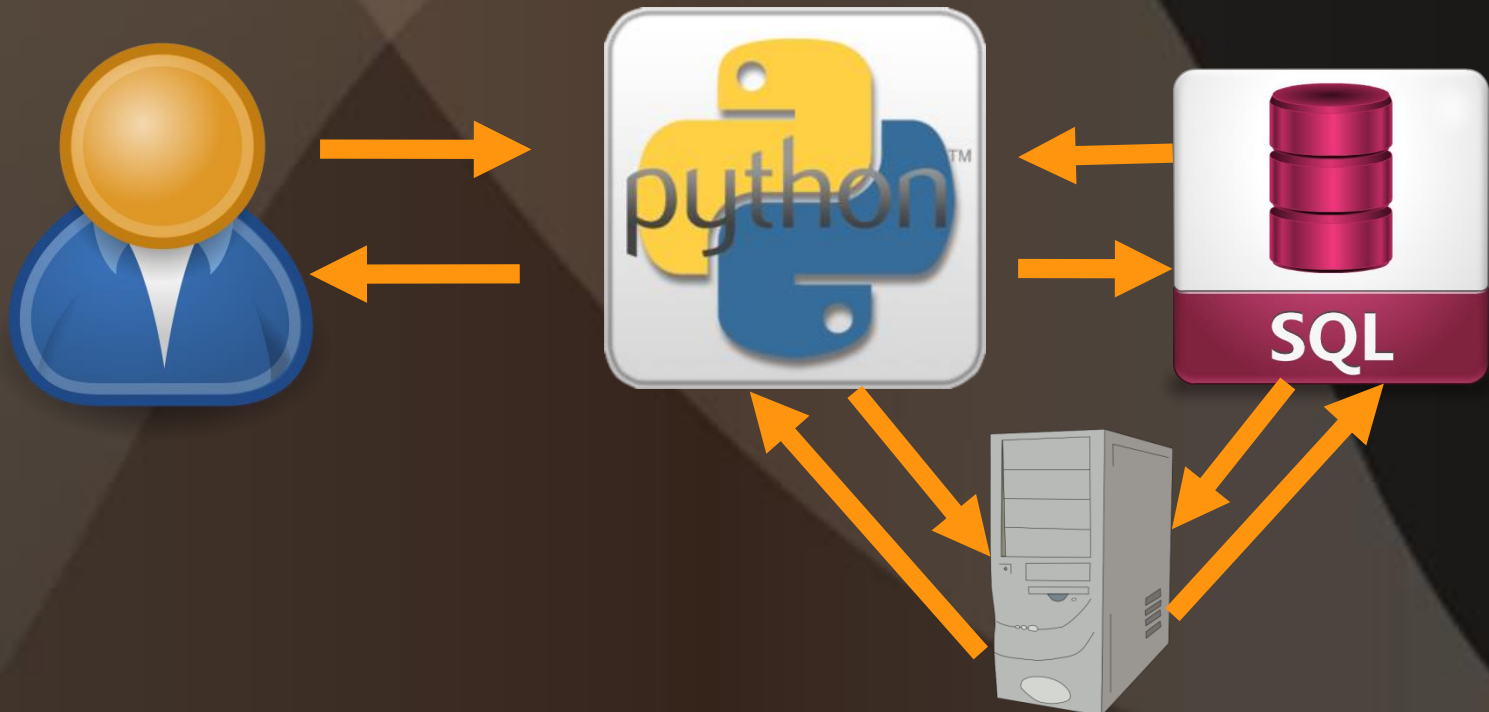
Why Python?

- By the end of the course, you should be able to write a data mining program



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Why Python?

- Python is
 - Relatively easy to pick up
 - Readable
 - Accessible – IDLE shell
 - Loosely Typed
 - `x = "Hello!"` Python just knows `x` is a string
 - Overall great for a high level application like this

Hello World

C:

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

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

```
    printf("Hello, World");
```

```
}
```

Python:

```
print("Hello, World!")
```

International Obfuscated C Code Contest

```
#include¥
<stdio.h>//
#define Y(¥
)_##char
#define ¥
[9<<9],
#define j¥
L:fread(&¥
L,4,1,f);u
#define P¥
&4*(int*¥
)"")% ¥
3901%31///
#define q¥
Z[F++]=*E
#define $¥
for("10CCC"
#include¥
<stdlib.h>
```

```
int *Q,u,i,c,k,B,r=0,w,n,F=0,x,J,u,m,p,s=0,v,e,r,L,a,z,y,D,o,g; Y( )*
Z= "Vn"
"xR9Q" "[s"
"pf^cM" "cbac¥
"BkaEg~" "x`i_i¥
"r`IZ.6 ]H3ec]_¥
"ZZnJjW[bK`hZakb¥
"VfX^]V:X%b]N,ma-j"
"[G3_d[Xe]::V`4Z]Z"
"gm.Um:m^m^5n_nci<Wf[h<t+e$%" "]Lha&=I Umc>m#_mdp"
")h( ^uV9b7dcZq^d`/*3`#ko`lj:^idad/]0ffxP*]??bfff$`h@(Zgtcn"
"on e`!l+tA6`db`qciq`=?ui|`_dk`!kx_%[bu]cZX8u_)Z=8@ghg$m|p`a>D_o2_eb)sb)sa0g@f-h"
"1bl_DebiFsa&Dt^t4*X`*mCC^5Y",M _A _G _I _C _K[]=","b]q]a9¥",.)' (cDDJr4"
"Ab,:sdtD/E*#2eXkZ7cPthkq` (stnhct!a:>A:A+jA9>A:A+js",*E:I:FILE*f:main
(int d,Y()**t){$;!t:s=c=-D){$,t=v=D?k:J:v++-d;}{$,o=L=z=0,s=D?J:k:s+++d
-B-F:)(o&&(e=m),y=*Q!=(m=Q[u*!+(D?v-u*s:s-u*v)])^o&&(G[z++]=s-L>20,L=s,o=y);$
s=z,o=0:s--;o+=G[s]^s[A]);$:z`w| |o:z=w){$,o=1;o&&!-o*D~--w|1[A]|v-a>28&&w`4|1[A]|
3[A]|!2[A ]|v-a>5:);$;I[g[I]=2,++g]=-1,-s<w:I[~-g]=A[-s-]);$,a=v,w=z;z--;A[z]=z[G];
=o:(Z=C+!D*734)[z=a] ^3;d=0){$;!~I[v]:a=z,v=o=0)$,M[L
Z[z]^4?-42:o;
Z[z++]^4:); $:~z&&2>(s=I
|Z[z]==s ;)++z,s^2?
v:v&&(o +d,a=z,
I]^2:); }$;d
[I]= ;}
,F= ;}
);$:v++[
=c){$,p=*Z:F++
Z%p,*Z:);$;Z=C:x=F
r,s=2,p---7;Q=E,E=Z
,Z=Q)$:s%x;p^(c=s++[E
])?q*0+c:(q++, q--);$;K[F]:K[F++]-=p
):c=fseek((f=fopen(*++t,"rb"))?f:(exit(1)
,f),10,r);j:n=j=j=j;i=j:F=a=fseek(f,n,c);
Q=calloc(z=i--*u,4);$;a`z:fread(a+++Q,L>>
19,1,f));$:F++<i;r=n){$,n=0,B=u;B:n|=Q^Q
[u*(i-F)+--B]);$,n&&Y(!r&&(D=F-J,J=F):
!n&&r;r=x=!put)(10)$;B^u:B++,c=p){$,p=
0,s=J;s^F;p|=Q^Q[B+u*(i-s++)]);$:p&&!c:
)$;++Y
(c*F-J<<1<5*((k=B)-x);put)(32
)$;!p&&c;x=B){$,F-J<<1<Y(D&&
10),D=95:D--;D[M]=0);$;main(
F,w=a=g=0,!D);$;x=K[o++]-
[x]*M[K[o++]-27]>0&&(M
[x]=s));$: ++c^L;M[c]
>s&&(s=M[ x=c]));$:
3^d|printf (K+--o,(
*Q P,(e P), D*!(c+~x);
w++)$,o= ,~,-o:);$
[w]Y(^-- o||put)(D=
o);0:);c =Y(^o&&!
put)(*K+ x);}}}}}
```

The programming language C can be so hard to read, there is a contest dedicated to making the most unreadable code.

This is a winning entry from 2013.

This fully functioning program interprets handwritten text.

Assignment

```
x = 3
```

```
num = eval(input("Enter a number: "))
```

```
y = 12
```

```
x = x + y + num
```

```
print(x)
```

- What does this program do?

This Lab

- Best way to learn to program is to do it! We're giving you building blocks, go play with them!
- Find the lab in the usual place
- WebSubmit hello.py by the end of lab
- Let me know if you have any questions!