[20]:
```
type(1)
type("hello")
```

[20]:
```
str
```

[22]:
```
#variable name
x=20
#expression evaluation
x=30+x
#all done
print("now answer is",x)#print statement
```

```
now answer is 50
```

[24]:
```
x=input("hours:")
y=input("rate")
pay=int(x)*float(y)
print("pay is:",pay)
#y=input("rate:")
#payx=x*y
```

```
hours: 35
rate 2.75
pay is: 96.25
```

[26]:
```
x=5
if x<10:
    print("smaller")
    if x>20:
        print("bigger")
        print("finish")
```

```
smaller
```

[20]:
```
type(1)
type("hello")
```

[20]:
```
str
```

[22]:
```
#variable name
x=20
#expression evaluation
x=30+x
#all done
print("now answer is",x)#print statement
```

```
now answer is 50
```

[24]:
```
x=input("hours:")
y=input("rate")
pay=int(x)*float(y)
print("pay is:",pay)
#y=input("rate:")
#payx=x*y
```

[30]:
```
x=5
if x==5:
    print("equals 5")
    if x>4:
        print("greater than 4")
    if x>=5:
        print("greater than or equals 5")
        if x<6:
            print("less than 6")
        if x<=5:
            print("less than or equals to 5")
            if x!=6:
                print("not equal to 6")
```

```
    print("is 6")
    print("is still 6")
    print("third 6")
print("afterwards 6")
```

```
before 5
is 5
is still 5
third 5
afterwards 5
before 6
afterwards 6
```

[40]:
```
x=5
if x>2:
    print("bigger than 2")
    print("still bigger")
    for i in range(5):
        print(i)
    if i>2:
        print("bigger than 2")
        print("done with 2")
        print("done with i:",i)
        print("all done")
```

```
bigger than 2
still bigger
0
1
2
3
4
bigger than 2
done with 2
done with i: 4
all done
```

[42]:
```
x=42
if x>1:
    print("more than 1")
    if x<100:
        print("less than 1")
        print("all done")
```

```
more than 1
less than 1
all done
```

[46]:
```
x=4
if x>2:
    print("bigger")
else:
    print("smaller")
print("all done")
```

```
bigger
all done
```

[48]:
```
x=5
if x<2:
    print("small")
elif x<10:
    print("medium")
else:
    print("large")
print("all done")
```

```
medium
all done
```

[50]:
```
x=20
if x<2:
    print("small")
elif x<10:
```

```
hello
fun
```

[106]:
```
def thing():
    print("zip")
thing()
```

```
zip
```

[108]:
```
def max(inp):
    blah
    blah
    for x in inp:
        blah
        blah
print(x)
```

```
5
```

[110]:
```
print(float(99)/100)
```

```
0.99
```

[112]:
```
i=42
type(i)
```

[112]:
```
int
```

[114]:
```
f=float(i)
print(f)
```

```
42.0
```

[116]:
```
sval=("123")
print(sval+str(1))
```

```
1231
```

[8]:
```
print(123)
print(98.6)
print("hello world")
```

```
123
98.6
hello world
```

[10]:
```
x1q3z9ocd=35.0
x1q3z9afd=12.50
x1q3z9afd=x1q3z9ocd*x1q3z9afd
print(x1q3z9afd)
print(x1q3z9ocd)
```

```
437.5
35.0
```

[12]:
```
x=1+2*3-4/5**6
print(x)
```

```
6.999744
```

[14]:
```
x=1+2**3/4*5
print(x)
```

```
11.0
```

[18]:
```
ddd=1+4
print(ddd)
eee="hello"+"there"
print(eee)
```

```
5
hellothere
```

```
print("all done")
```

```
below 10
all done
```

[62]:
```
astr="hello bob"
try:
    istr=int(astr)
    print("first:",istr)
except valueerror:
    print("error:cannot convert hello bob to integer")
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[62], line 3
      2 try:
----> 3     istr=int(astr)
      4     print("first:",istr)

ValueError: invalid literal for int() with base 10: 'hello bob'

During handling of the above exception, another exception occurred:

NameError                                 Traceback (most recent call last)
Cell In[62], line 5
      3     istr=int(astr)
      4     print("first:",istr)
----> 5 except valueerror:
      6     print("error:cannot convert hello bob to integer")

NameError: name 'valueerror' is not defined
```

[64]:
```
astr="123"
istr=int(astr)
print("second:",istr)
```

```
second: 123
```

[50]:
```
x=20
if x<2:
    print("small")
elif x<10:
    print("medium")
else:
    print("large")
print("all done")
```

```
large
all done
```

[52]:
```
x=5
if x<2:
    print("small")
elif x<10:
    print("medium")
else:
    print("large")
print("all done")
```

```
medium
all done
```

[54]:
```
x=5
if x<2:
    print("small")
elif x<10:
    print("medium")
elif x<20:
    print("big")
elif x<40:
    print("large")
elif x<100:
    print("huge")
else:
```

```
elif x<40:
    print("large")
elif x<100:
    print("huge")
else:
    print("ginormous")
print("all done")
```

```
medium
all done
```

[56]:
```
x=2
if x<2:
    print("below 2")
elif x>=2:
    print("two or more")
else:
    print("something else")
print("all done")
```

```
two or more
all done
```

[58]:
```
x=5
if x<2:
    print("below 2")
elif x<10:
    print("below 10")
elif x<20:
    print("below 20")
else:
    print("something else")
print("all done")
```

```
below 10
all done
```

[118]:
```
ival=int(sval)
type(ival)
```

[118]:
```
int
```

[120]:
```
name="bob"
print(f"hello,{name}")
```

```
hello,bob
```

[122]:
```
def print_lyrics():
    print("i am lumberjack,and i am okay.")
    print("i sleep all night,and work all day")
print_lyrics()
```

```
i am lumberjack,and i am okay.
i sleep all night,and work all day
```

[126]:
```
def greet(lang):
    if lang=="es":
        print("hola")
    elif lang=="fr":
        print("bonjor")
    else:
        print("hello")
```

[128]:
```
greet("en")
```

```
hello
```

[130]:
```
greet("es")
```

```
hola
```

[132]:
```
def addtwo(a,b):
    added=a+b
    return added
```

[132]:
```
def addtwo(a,b):
    added=a+b
    return added
x=addtwo(3,5)
print(x)
```

```
8
```

[134]:
```
print("before")
for thing in[9,41,12,3,74,15]:
    print(thing)
print("after")
```

```
before
9
41
12
3
74
15
after
```

[136]:
```
for i in [5,4,3,2,1]:
    print(i)
print("blastoff")
```

```
5
4
3
2
1
blastoff
```

[138]:
```
found=False
print("before", found)
for value in [9,41,12,3,74,15]:
```

[71]:
```
rawstr=input("enter a number:")
try:
    ival=int(rawstr)
except:
    ival=-1
if ival>0:
    print("nice work")
else:
    print("not a number")
```

```
enter a number: 8
nice work
```

[79]:
```
#get user input
hours=float(input("enter hours: "))
rate=float(input("enter rate: "))
#calculate pay
if hours<=40:
    pay=hours*rate
else:
    pay=(40*rate)+((hours-40)*rate*1.5)
#print result
print("pay: ",pay)
```

```
enter hours:  45
enter rate:  10
pay:  475.0
```

[104]:
```
def thing():
    print("hello")
thing()
print("fun")
```

[138]:
```
found=False
print("before", found)
for value in [9,41,12,3,74,15]:
    if value==3:
        found= True
        print("found", value)
print("after", found)
```

```
before False
found 3
after True
```

[140]:
```
largest_so_far=-1
print("before",largest_so_far)
for the_num in [9,41,12,3,74,15]:
    if the_num>largest_so_far:
        largest_so_far=the_num
    print( largest_so_far,the_num)
print("after",largest_so_far)
```

```
before -1
9 9
41 41
41 12
41 3
74 74
74 15
after 74
```

[144]:
```
largest_so_far=-1
print("before",largest_so_far)
for the_num in [9,41,12,3,74,15]:
    if the_num>largest_so_far:
        largest_so_far=the_num
    print( largest_so_far,the_num)
```

```
print( before ,largest_so_far)
for the_num in [9,41,12,3,74,15]:
    if the_num>largest_so_far:
        largest_so_far=the_num
    print( largest_so_far,the_num)
print("after",largest_so_far)
```

```
before -1
-1 9
-1 41
-1 12
-1 3
-1 74
-1 15
after -1
```

[154]:
```
smallest=None
print("before",)
for value in [9,41,12,3,74,15]:
    if smallest is None:
        smallest=value
    elif value<smallest:
        smallest=value
    print("smallest",value)
print("after",smallest)
```

```
before
smallest 9
smallest 41
smallest 12
smallest 3
smallest 74
smallest 15
after 3
```

[ ]: