Python Assignment - 02

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Part A : Diagram the execution of d = man(1,2,3)

Global space

man | man(a,b,c)

Call frame

man | 6

a | 1
b | 2
c | 3

Global space

man | man(a,b,c)

Call frame

man | 6

a | 1
b | 2
c | 3
m | 1

man | man(a,b,c)

man | 7

a | 1
b | 2
c | 3
m | 1

man | man(a,b,c)

man | 10

a | 1
b | 2
c | 3
m | ✗ 3

man | man(a,b,c)

man | •

a | 1
b | 2
c | 3
m | 3
return | 3

man | man(a,b,c)
d | 3

man |

a | 1
b | 2
c | 3
m | 3
return | 3

Part B: Diagram the execution of e = max(c, b, a)

Global space | **Call frame**

Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

max	5
a	3.0
b	2.0
c	1.0

Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

max	6
a	3.0
b	2.0
c	1.0
m	3.0

Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

max	8
a	3.0
b	2.0
c	1.0
m	3.0

Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

max	10
a	3.0
b	2.0
c	1.0
m	3.0

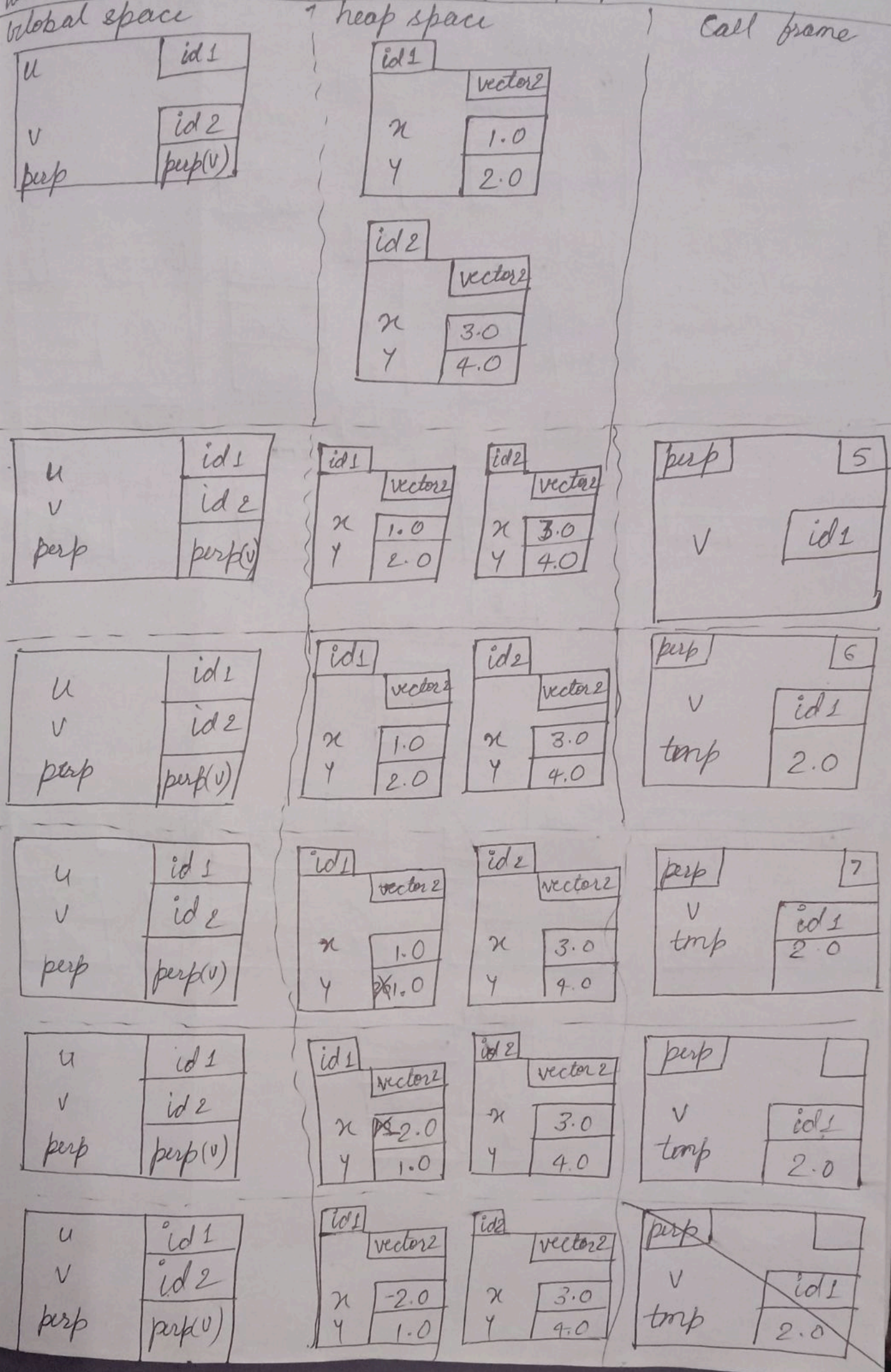
Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0

max	
a	3.0
b	2.0
c	1.0
m	3.0
return	3.0

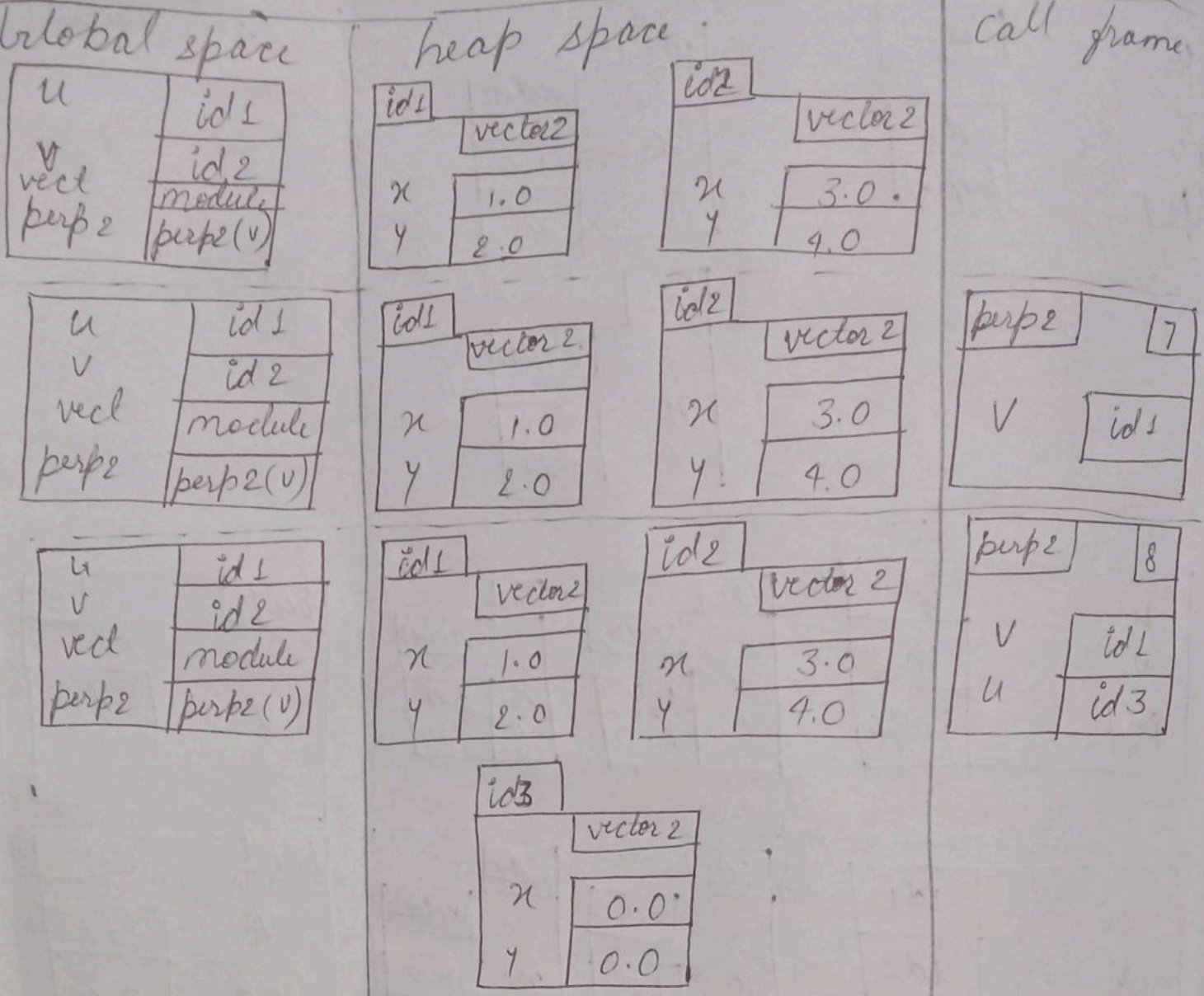
Global space	
max	max(a, b, c)
d	3
a	1.0
b	2.0
c	3.0
e	3.0

~~max~~	
~~a~~	~~3.0~~
~~b~~	~~2.0~~
~~c~~	~~1.0~~
~~m~~	~~3.0~~
~~return~~	~~3.0~~

Part C: Diagram the execution of perp(4)



Part 0: Diagram the execution of the v = perp2(u)



Global space

u	id1
v	id2
vect	module
perp(2)	perp(v)

Heap space

id1 → vector2

x	1.0
y	2.0

id2 → vector2

x	3.0
y	4.0

id1 → vector2

x	~~2.0~~ -2.0
y	1.0

Call frame

perp2 | 10

v	id1
u	id3

Global space

u	id1
v	id2
vect	module
perp2	perp(v)

Heap space

id1 → vector2

x	~~2.0~~ 1.0
y	2.0

id2 → vector2

x	3.0
y	4.0

id3 → vector2

x	-2.0
y	1.0

Call frame

perp2 |

v	id1
u	id3
return value	id3

Global space

u	id1
v	~~id2~~ id3
vect	module
perp2	perp(v)

Heap space

id1 → vector2

x	1.0
y	2.0

id3 → vector2

x	-2.0
y	1.0

Call frame

perp2 |

v	id1
u	id3
return value	id3

Part E: Define the function: dist(x,y)

```
def dist(x,y):
    a = x-y
    if a<0:
        b = -a
    else:
        b = a
    return b
```