*#ICA9*

*'''*

*Created on Mar 8, 2018*

**@author:** *nobeid1*

*'''*

# Nasim Obeid

# CS A131

# Date: March 8, 2018

# ICA

# Filename: ICA9

import sphere

import cylinder

import random

SPHERE\_CHOICE = 1

CYLINDER\_CHOICE = 2

QUIT\_CHOICE = 3

volume = 0.0

surface\_area=0.0

def **main**():

choice = 0

while choice != QUIT\_CHOICE:

display\_menu()

choice = int(input(*"Enter your choice: "*))

if choice == SPHERE\_CHOICE:

radius = random.random()+10

volume, surface\_area = sphere.volSA(radius)

print(*"Radius of sphere = "*, *'{:.1f}'*.format(radius))

print(*"volume of sphere = "*,*'{:.2f}'*.format(volume))

print(*"Surface are of sphere = "*,*'{:.2f}'*.format(surface\_area))

elif choice == CYLINDER\_CHOICE:

radius= random.randrange(1,11)

height = random.uniform(3.0,20.0)

volume, surface\_area = cylinder.volSA(radius, height)

print(*"Radius of cylinder = "*, *'{:.1f}'*.format(radius))

print(*"Height of cylinder = "*,*'{:.1f}'*.format(height))

print(*"volume of cylinder = "*,*'{:.2f}'*.format(volume))

print(*"Surface area of cylinder = "*,*'{:.2f}'*.format(surface\_area))

elif choice == QUIT\_CHOICE:

print(*"End of program. Thank you"*)

else:

print(*"Invalid input."*)

def **display\_menu**():

print(*"Enter 1 for a sphere"*)

print(*"Enter 2 for a cylinder"*)

print(*"Enter 3 for quit"*)

main()

#cylinder

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*'''*

# Nasim Obeid

# CS A131

# Date: March 8, 2018

# ICA

# Filename: cylinder

import math

def **volSA**(rad,ht):

vol= math.pi\*ht\*rad\*\*2

sa = 2\*math.pi\*rad\*ht + 2\*math.pi\*rad\*\*2

return vol,sa

#sphere

*'''*

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*'''*

# Nasim Obeid

# CS A131

# Date: March 8, 2018

# ICA

# Filename: sphere

import math

#calculate and return volume and surface area of a sphere

def **volSA**(rad):

vol = (4.0\*math.pi\*rad\*\*3)/3.0

sa= 4\*math.pi\*rad\*\*2

return vol, sa

