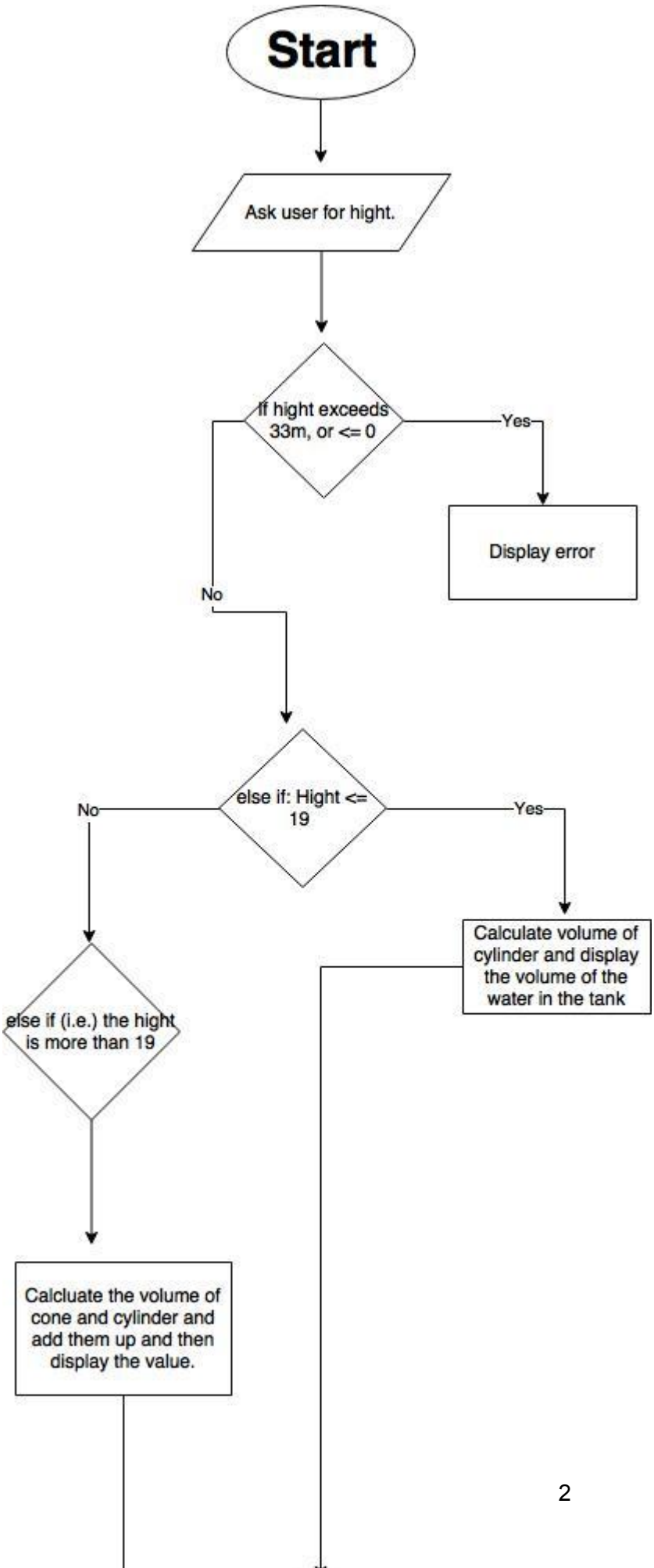
Abdulla Al Ameri, HW 3.

Problem: We have a tank made of a cylinder and a cone, and as we fill it with water we wanna know the volume of water does it contain.

Here's a flow chart of what we're trying to do!


Start
Ask user for hight.
If hight exceeds 33m, or <= 0
Yes
Display error
No
else if: Hight <= 19
No
Yes
Calculate volume of cylinder and display the volume of the water in the tank
else if (i.e.) the hight is more than 19
Calcluate the volume of cone and cylinder and add them up and then display the value.

Now, lets jump to the code:

```
clear
clc

INP = input ('Eneter the hight of the water in meters')
%This will ask the user to input the hight of water in units of meter.


if INP <= 0 || INP >= 33
    error('ERROR: Your hight cannot be negative, or 0, nor it can exceed 33 meters')

    %If the user inputed an unreasonable hight, an error massage will show.


elseif INP <= 19

    %If the user hight was less than or equal to 19 (the hight of cylindar,then the
    %code will only calculate the volume of the cylindar and present it
    %as volume of water.

    h = INP
    WATER_VOLUME = pi * (12.5)^2 * h %Volume of cylinder

    fprintf('%s cubic meter is the volume of the water.\n',WATER_VOLUME)
    %fprintf will show the result.
else

    %if the hight is not more than 19 and less than or equal  to max hight
    % off 33 meter, the following code will make it divide the object for
    %two objec, cacluate each volume, and add the.

   h = 19 %Max water hight for full cylinder
   H = INP - 19 %The hight of the

   WATER_VOLUME = (pi * (12.5)^2 * h) + (1/3 * pi * (23)^2 * H)
   %Volume of cylinder + cone

   fprintf('%s cubic meter is the volume of the water.\n',WATER_VOLUME)

end
```