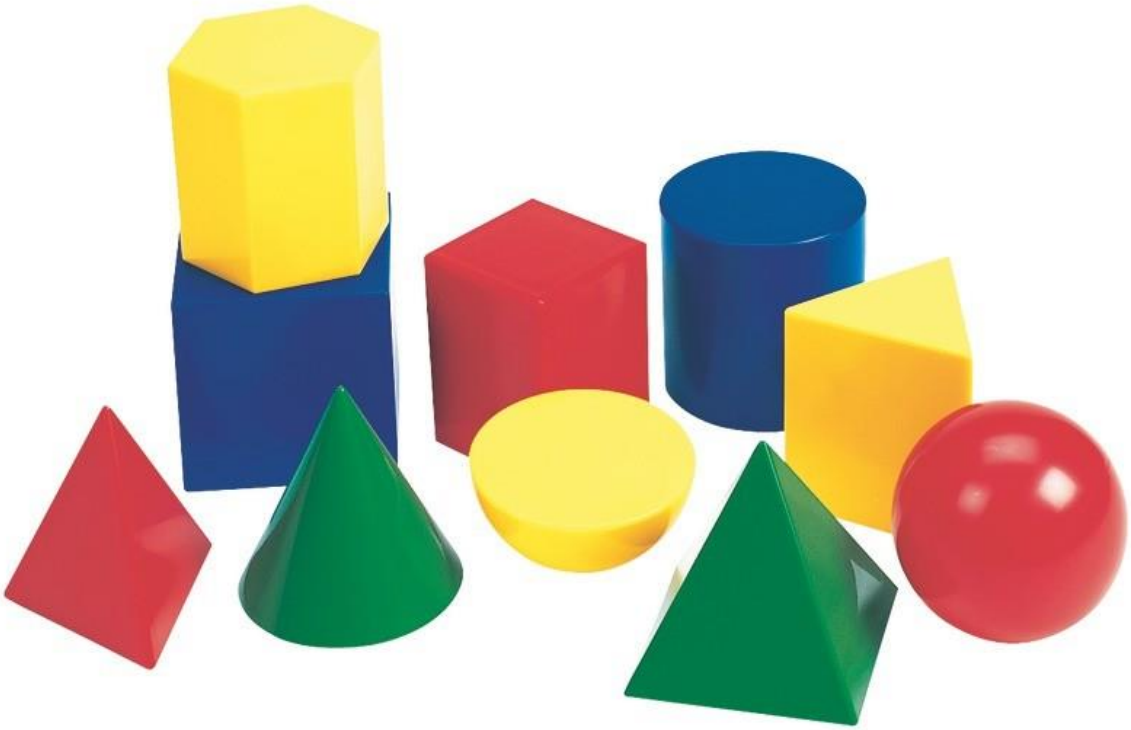
USER MANUAL SACalc



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FDN006: Foundations of computing

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PREFACE

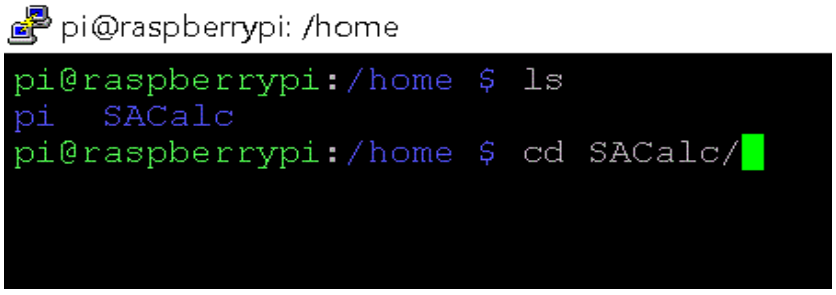
With this manual you will be able to use the program which was required to do for FDN006 discipline.

The program is a Surface Area Calculator for geometrical solids like Sphere, Cone, Cylinder and Cube.

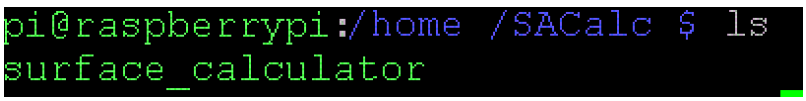
You will have a menu with some option where you will press the option that you want to calculate and then you will introduce the values and you should receive one answer.

HOW TO START THE PROGRAM

To start the program you will use the command (ls) to see the directories that are available and then you will use the command (cd) to go to the directory that you want to go. In this case we will go to the directory (SACalc) like the image shows.

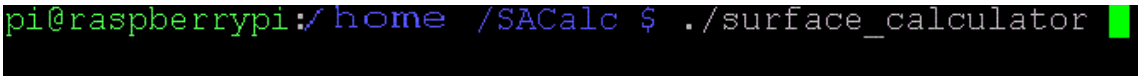


You should get something like this:



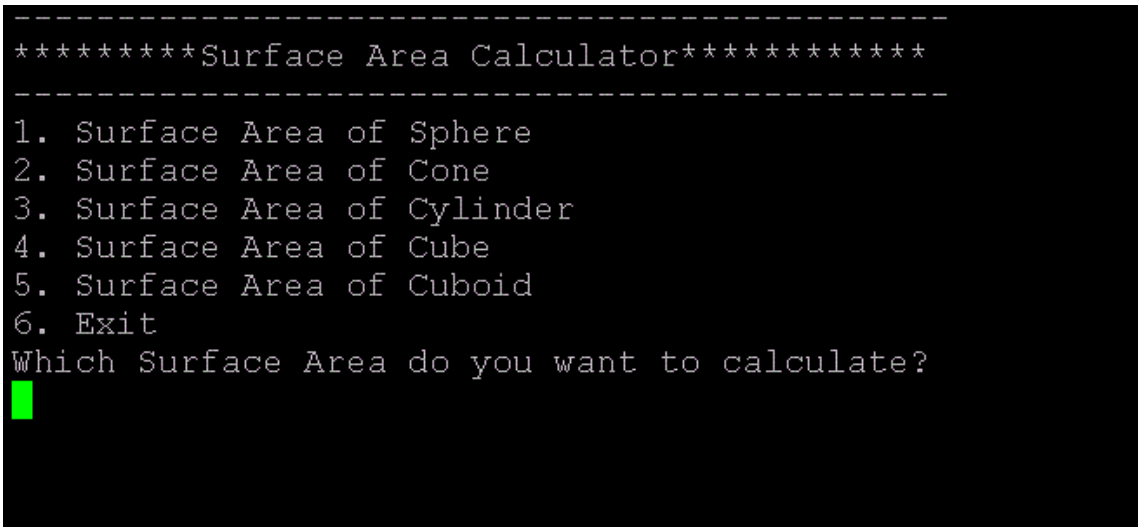
Then you must use the command (ls) to see the file surface_calculator.

Now in order to run the program you should use the command (./surface_calculator) like the image shows.



HOW TO USE THE PROGRAM

After you do the command above (./surface_calculator) the program will run and you will get on the screen something like this.



Now in order to use the program you just need to select one of the fallowing options:

1 to calculate the sphere's surface area

2 to calculate the cone's surface area

3 to calculate de cylinder's surface area

4 to calculate de cube's surface area

5 to calculate de cuboid's surface area

6 to Exit the program

HOW TO CALCULATE THE SPHERE'S SURFACE AREA

In order to calculate the sphere's surface area you will press the number one (1) and then you will introduce the radius value like you can see on the example.

```
-----------------------------------------
*********Surface Area Calculator************
-----------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
1
You chose to calculate the Surface area of Sphere
Enter the value of the radius in cm :
2
The Surface area of the sphere is 50.2654824560 cm2
```

After you chose the value of the radius, the program will execute the sphere's surface area formula ($4\pi r^2$) and will get back to you with one answer.

HOW TO CALCULATE THE CONE'S SURFACE AREA

In order to calculate the cone's surface area you will press the number two (2) and then you will introduce the base radius value and the value of the height like you can see on the example.

```
-----------------------------------------
*********Surface Area Calculator************
-----------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
2
you chose to calculate the Surface area of Cone
Enter the value of the Base Radius in cm :
5
Enter the value of the Height in cm :
7
The Surface area of the cone is 204.2035224775 cm2
```

After you chose the value of the base radius and the value of the height, the program will execute the cone's surface area formula $\pi r(r + \sqrt{r^2} + \sqrt{h^2})$ and will get back to you with one answer.

HOW TO CALCULATE THE CYLINDER'S SURFACE AREA

In order to calculate the cylinder's surface area you will press the number three (3) and then you will introduce the radius value and the value of the height like you can see on the example.

```
-----------------------------------------
*********Surface Area Calculator************
-----------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
3
you chose to calculate the Surface area of Cylinder
Enter the value of the Radius in cm :
34
Enter the value of the Height in cm :
2
The Surface area of the cylinder is 7690.6188157680 cm2
```

After you chose the value of the radius and the value of the height, the program will execute the cylinder's surface area formula $2\pi r(r + h)$ and will get back to you with one answer.

HOW TO CALCULATE DE CUBE'S SURFACE AREA

In order to calculate the cube's surface area you will press the number four (4) and then you will introduce the edge length value like you can see on the example.

```
-----------------------------------------
*********Surface Area Calculator************
-----------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
4
you chose to calculate the Surface area of Cube
Enter the value of the edge length in cm :
3
The Surface area of the cube is 54 cm2
```

After you chose the value of the edge length, the program will execute the cube's surface area formula (**$6a^2$**) and will get back to you with one answer.

HOW TO CALCULATE THE CUBOID'S SURFACE AREA

In order to calculate the cuboid's surface area you will press the number five (5) and then you will introduce the length value, the width value and the height value like you can see on the example.

```
-------------------------------------------
*********Surface Area Calculator************
-------------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
5
you chose to calculate the surface area of Cuboid
Enter the value of the length in cm :
2
Enter the value of the width in cm :
5
Enter the value of the height in cm :
8
The Surface area of the cuboid is 132 cm2
```

After you chose the value of the length, the value of the width and the value of the height, the program will execute the cuboid's surface area formula **(2lw + 2lh + 2wh)** and will get back to you with one answer.

HOW TO EXIT THE PROGRAM

In order to leave the program you just need to press six (6) and the program will close like you can see on the example bellow.

```
-------------------------------------------
*********Surface Area Calculator************
-------------------------------------------
1. Surface Area of Sphere
2. Surface Area of Cone
3. Surface Area of Cylinder
4. Surface Area of Cube
5. Surface Area of Cuboid
6. Exit
Which Surface Area do you want to calculate?
6
you chose to leave the program!!!
```

CONCLUSION

Now that you read this user manual until this stage you should be able to know how to use the Surface Area Calculator.