Assignment 2-1

Achyutha Krishna K
Athul A R

Report can be found at https://achyuth1.github.io/projects.html

Assumptions made:

- Cycle is on ground i.e., if one wheel rotates the other wheel also rotates.
- Angular velocity of both wheels will be equal and twice that of pedal's angular velocity
- For future development the angular velocity of front wheel can be made a function of the angle it is rotated which is more realistic.
- Front view is the default view mode.

User Manual:

- Use key '1' to select Pedalling mode
- Use key '2' to select the steering/handle mode
- Use key '0' to select the view changing mode

Steering / Handle mode:

- Use Left and Right arrow keys to rotate the handle
- It's rotation is bounded to [-90^{o}, 90^{0}]

Pedalling mode:

- Use Up and Down arrow keys for pedalling the cycle
- Up Arrow results in forward motion of bicycle
- Down arrow doesnt move the bicycle, only rotates the pedals(Realistic! :D).
- *For handle and Pedals the remaining rotations are disabled*

View changing mode:

- Up and Down arrows for rotation about X- axis
- Left and Right arrows for rotation about Y- axis
- Page Up and Page Down keys for rotation about Z-axis

Referred Links:

1) For solid torus
2) For cylinder
3) For Solid cube
4) Tutorial 4 uploaded by professor.
5) BMX cycle for coloring purposes

6) Cycle frame dimensions used: