# STEPS TO REPLACE VIDEO FILE IN SD CARD

1. Put sd card into pc.
2. Open folder/file manager.
3. Go to rootfs/home/rpi/Desktop.
4. Copy the video you want then paste inside the Desktop folder.
5. Delete the template video and rename your video according to this format:
   vid1.mp4 = This should be the company logo video or default video when idle.(water pump has not started)
   vid2.mp4 = This should be the video when the water pump started running.(water level has not reached either sensor)
   vid3.mp4 = This should be the video when the water level reaches the first sensor.(water pump still running)
   vid4.mp4 = This should be the final video when the water level reaches the second sensor.(water pump will still continue to run for 5 seconds before turning off)
6. Eject the sd card and insert sd card back into the Raspberry Pi.

# PROJECT FLOW

## Without pressing red button(Stop button)

1. Power up the raspberry pi.
2. Start the demo by opening the terminal after startup. (Refer Pic.1 for the terminal)
3. Black fullscreen will show after the terminal is opened.
4. vid1.mp4(Company logo/default video) will start looping endlessly.
5. Press the green button to start the demo.
6. Water pump and vid2.mp4 will start running endlessly.
7. When water level reaches 1st sensor,
8. LED 1 will light up and vid3.mp4 will start running.
9. When water level reaches 2nd sensor,
10. LED 1 and LED 2 will light up and vid4.mp4 will start running.
11. After vid4.mp4 runs for 5 seconds, the water pump will turn off.
12. When water level drops below the 2nd sensor, LED 2 will turn off and vid3.mp4 will start running.
13. When water level drops below the 1st sensor, LED 1 will turn off, vid2.mp4 and the water pump will start running again.
14. Steps 5 to 12 will continue looping itself until the red button(stop button) is pressed.
15. Long press the red button(shutdown button) for 3 seconds to shutdown the raspberry pi.

# Pressing red button(stop button)

1. Power up the raspberry pi.
2. Start the demo by opening the terminal after startup. (Refer Pic.1 for the terminal)
3. Black fullscreen will show after the terminal is opened.
4. vid1.mp4(Company logo/default video) will start looping endlessly.
5. Press the green button to start the demo.
6. Water pump and vid2.mp4 will start running endlessly.
7. When water level reaches 1st sensor,
8. LED 1 will light up and vid3.mp4 will start running.
9. When water level reaches 2nd sensor,
10. LED 1 and LED 2 will light up and vid4.mp4 will start running.
11. After vid4.mp4 runs for 5 seconds, the water pump will turn off.
12. Press the red button to stop the demo.
13. LED 1, LED 2 and the water pump will turn off.
14. vid1.mp4 will start looping again until the green button is pressed to start the demo.
15. Long press the red button(shutdown button) for 3 seconds to shutdown the raspberry pi.



Pic.1 Raspberry Pi terminal.

# BUTTON USAGE

1. **Green Button**
   Press once to start the demo.

   

2. **Red Button**
   Press once to stop the demo and return to default video.

   

3. **Red Button(Shutdown button)**
   Long press 3 seconds to shutdown the Raspberry pi.

   

# CONNECTION DIAGRAM



Raspberry Pi GPIO pinout diagram:

| Alternate Function | Pin | # | | # | Pin | Alternate Function |
|---|---|---|---|---|---|---|
| | 3.3V PWR | 1 | | 2 | 5V PWR | |
| I2C1 SDA | GPIO 2 | 3 | | 4 | 5V PWR | |
| I2C1 SCL | GPIO 3 | 5 | | 6 | GND | |
| | GPIO 4 | 7 | | 8 | UART0 TX | |
| | GND | 9 | | 10 | UART0 RX | |
| | GPIO 17 | 11 | | 12 | GPIO 18 | |
| | GPIO 27 | 13 | | 14 | GND | |
| | GPIO 22 | 15 | | 16 | GPIO 23 | |
| | 3.3V PWR | 17 | | 18 | GPIO 24 | |
| SPI0 MOSI | GPIO 10 | 19 | | 20 | GND | |
| SPI0 MISO | GPIO 9 | 21 | | 22 | GPIO 25 | |
| SPI0 SCLK | GPIO 11 | 23 | | 24 | GPIO 8 | SPI0 CS0 |
| | GND | 25 | | 26 | GPIO 7 | SPI0 CS1 |
| | Reserved | 27 | | 28 | Reserved | |
| | GPIO 5 | 29 | | 30 | GND | |
| | GPIO 6 | 31 | | 32 | GPIO 12 | |
| | GPIO 13 | 33 | | 34 | GND | |
| SPI1 MISO | GPIO 19 | 35 | | 36 | GPIO 16 | SPI1 CS0 |
| | GPIO 26 | 37 | | 38 | GPIO 20 | SPI1 MOSI |
| | GND | 39 | | 40 | GPIO 21 | SPI1 SCLK |



GND — 38 GPIO20

GND — 35 GPIO19

GND — 32 GPIO12

GND — 33 GPIO13

7 GPIO4 — GND

40 GPIO21 — GND — 4 5V

37 GPIO26 — GND — 4 5V

NO — 12 GPIO18

COM — GND