

# Classic Games on Android Phone and Snap-on Game Controller

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## Motivation:

- Have a Nintendo DS
  - battery is weak
  - cartridge slot contacts are dirty
  - can't install home-brew software on it
- Have a Samsung Galaxy J7 (secondary phone)
  - battery is weak
  - time to upgrade secondary phone?

## Concept:

- Install emulators and old game ROMs on a new phone
- Use a snap-on USB or Bluetooth game controller
- Newer but not current-generation phone
- GrapheneOS - for security and freedom - unfortunately only supports Google hardware

## Phone

- Google Pixel 5a
- 128GB flash storage
- 6GB RAM
- 2021 flagship phone, going for about \$150 (*refurbished*) today
- USB-C OTG port
- real 3.5mm analog audio socket
  - Note: 3.5mm audio socket is blocked mechanically by the USB game controller I chose.
- supported by GrapheneOS
  - provides frequent security updates
  - puts Google Play Store and related software in a sandbox, to cut down on spying



## Gaming Setup

- Lemuroid - Available in Google Play Store and in F-Droid free software store

- Emulates many living room TV-based game systems including major Sega and Nintendo systems
- GameSir X2 Type-C Mobile Game Controller for Android Phone (USB-C)
  - \$50 on Amazon
  - comes with carrying case
    - inside the case is a pocket large enough to hold a Pixel 5a
  - I chose USB not Bluetooth because it doesn't have another battery to take care of
  - Don't install GameSir's app – you don't need it
    - At first glance, it appears to have invasive privacy-violating features
- Get game ROMS from archive.org
  - find the name of an old game you want to download elsewhere on review sites
  - on archive.org, search in the SOFTWARE section
- Bluetooth headset (or phone's loudspeakers) because analog audio socket is blocked by game controller



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## Systems Emulated by Lemuroid

- Atari 2600 (A26)
- Atari 7800 (A78)
- Atari Lynx (Lynx)
- Nintendo (NES)
- Super Nintendo (SNES)
- Game Boy (GB)
- Game Boy Color (GBC)
- Game Boy Advance (GBA)
- Sega Genesis (aka Megadrive)

- Sega CD (aka Mega CD)
- Sega Master System (SMS)
- Sega Game Gear (GG)
- Nintendo 64 (N64)
- PlayStation (PSX)
- PlayStation Portable (PSP)
- FinalBurn Neo (Arcade)
- Nintendo DS (NDS)
- NEC PC Engine (PCE)
- Neo Geo Pocket (NGP)
- Neo Geo Pocket Color (NGC)
- WonderSwan (WS)
- WonderSwan Color (WSC)
- Nintendo 3DS (3DS)