```
Last login: Sun Dec 29 10:00:49 on console nimishsabnis@Nimishs-MacBook-Air ~ % brew install qemu
   Auto-updating Homebrew...
Adjust how often this is run with HOMEBREW_AUTO_UPDATE_SECS or disable with HOMEBREW_NO_AUTO_UPDATE. Hide these hints with HOMEBREW_NO_ENV_HINTS (see `man brew`).
   Auto-updated Homebrew!
   ated 2 taps (homebrew/core and homebrew/cask).

New Formulae
cargo-dist
cargo-flamegraph
                                        ruby@3.3
                    periphery ratify
cargo-flamegraph
go-parquet-tools
=> New Casks
ayugram
clipbook
ghostty
                   ghostty@tip
mindmaster-cn
nexonplug
                                       tm-error-logger
tpvirtual
widgettoggler
You have 3 outdated formulae installed.
==> Fetching libunistring
=> Downloading https://ghcr.io/v2/homebrew/core/libunistring
==> Downloading https://ghcr.io/v2/homebrew/core/gettext/mani
=>> Fetching capstone
==> Fetching dtc ==> Downloading https://ghcr.io/v2/homebrew/core/dtc/blobs/sh
==> Downloading https://ghcr.io/v2/homebrew/core/pcre2/manife
    Fetching pcre2
Downloading https://ghcr.io/v2/homebrew/core/pcre2/blobs/
 ==> Downloading https://ghcr.io/v2/homebrew/core/python-packa
>> Fetching python-packaging
>> Downloading https://ghcr.io/v2/homebrew/core/python-packaging
>> Downloading https://ghcr.io/v2/homebrew/core/python-packaging
>> Downloading https://ghcr.io/v2/homebrew/core/mpdecimal/ma
==> Downloading https://ghcr.io/v2/homebrew/core/sqlite/manif
==> Fetching sqlite
==> Downloading https://ghcr.io/v2/homebrew/core/sqlite/blobs
==> Downloading https://ghcr.io/v2/homebrew/core/gmp/manifest
    Fetching gmp
Downloading https://ghcr.io/v2/homebrew/core/gmp/blobs/sh
==> Fetching libidn2
==> Downloading https://ghcr.io/v2/homebrew/core/libidn2/blob
==> Downloading https://ghcr.io/v2/homebrew/core/nettle/manif
==> Downloading https://ghcr.io/v2/homebrew/core/libevent/man
==> Fetching libevent
=>> Downloading https://ghcr.io/v2/homebrew/core/libevent/blo
Downloading https://ghcr.io/v2/homebrew/core/unbound/blob
==> Fetching libpng
==> Downloading https://ghcr.io/v2/homebrew/core/libpng/blobs
==> Downloading https://ghcr.io/v2/homebrew/core/libslirp/man
==> Fetching libslirp
==> Downloading https://ghcr.io/v2/homebrew/core/libslirp/blo
==> Downloading https://ghcr.io/v2/homebrew/core/libssh/manif
```

Fetching libssh
Downloading https://ghcr.io/v2/homebrew/core/libssh/blobs

```
==> Downloading https://ghcr.io/v2/homebrew/core/libusb/manif
     ==> Fetching libusb
==> Downloading https://ghcr.io/v2/homebrew/core/libusb/blobs
     ==> Downloading https://ghcr.io/v2/homebrew/core/lzo/manifest
    =>> Fetching pixman

=>> Downloading https://ghcr.io/v2/homebrew/core/pixman/blobs

=>> Downloading https://ghcr.io/v2/homebrew/core/pixman/blobs

=>> Downloading https://ghcr.io/v2/homebrew/core/snappy/manif

=>> Downloading https://ghcr.io/v2/homebrew/core/snappy/manif

100.0%
    ==> Fetching snappy
=> Downloading https://ghcr.io/v2/homebrew/core/snappy/blobs
    ==> Downloading https://ghcr.io/v2/homebrew/core/vde/manifest
    ==> Fetching zstd
==> Downloading https://ghcr.io/v2/homebrew/core/zstd/blobs/s
               Fetching qemu
Downloading https://ghcr.io/v2/homebrew/core/qemu/blobs/s
     Installing dependencies for qemu: libunistring, gettext, capstone, dtc, pcre2, python-packaging, mpdecimal, readline, sqlite, xz, python@3.13, glib, gmp, libidn2, nettle, p11-kit, libevent, unbound, gnutl jpeg-turbo, libpng, libslirp, libssh, libush, lzo, ncurses, pixman, snappy, vde, lz4 and zstd
Installing qemu dependency: libunistring
               Downloading https://ghcr.io/v2/homebrew/core/libunistring
     Already downloaded: /Users/nimishsabnis/Library/Caches/Homebrew/downloads/a570da63bc1839c7e217f203abd54d4d873ebd6b99f6e88994d0e79e2ebe987c--libunistring-1.3.bottle_manifest.json
               Pouring libunistring--1.3.arm64_sequoia.bottle.tar.gz
/opt/homebrew/Cellar/libunistring/1.3: 59 files, 5.4MB
   Downloading https://ghcr.io/v2/homebrew/cotapstone/man
Already downloaded: /Users/nimishsabnis/Library/Caches/Homebrew/downloads/877a628115389638ae1102dcba7821c83cfffcb1b3dc923224cfae218eba1929--gettext-0.23.bottle_manifest.json
Downloading https://ghcr.io/v2/homebrew/cotapstone/man
Already downloaded: /Users/nimishsabnis/Library/Caches/Homebrew/downloads/877a628115389638ae1102dcba7821c83cfffcb1b3dc923224cfae218eba1929--gettext-0.23.bottle_manifest.json
Downloading https://ghcr.io/v2/homebrew/core/capstone/man
Already downloaded: /Users/nimishsabnis/Library/Caches/Homebrew/downloads/f77d59d4c25d40ffcd60c420fbcd75fc7821fdaec8c04b54dca354ecb3dd9384--capstone-5.0.3.bottle_manifest.json
Downloading https://ghcr.io/v2/homebrew/core/capstone-5.0.3.am64_sequoia.bottle.tar.gz
Downloading https://ghcr.io/v2/homebrew/core/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/downloads/do
     Ð
p/ /optr/nomeorew/ueliar/pii-kt/0.25.:3 files, 4.2MB

> Installing qemu dependency: libevent |

> Downloading https://ghcr.io/v2/homebrew/core/libevent/man

Already downloaded: /Users/nimishsabnis/Library/Caches/Homebrew/downloads/68b113f9ab63db45f4e1860de522ce2ca4fa081eb3c0d5c7d6005a35c3cf8d06--libevent-2.1.12_1.bottle_manifest.json

> Pouring libevent--2.1.12_1.arm64_sequoia.bottle.tar.gz

Pour/nombrew/Cellar/libevent/2.1.12_1: 88 files, 2.2MB
             Tinstalling qemu dependency: unbound programment of the programment of
```

```
/opt/homebrew/Cellar/unbound/1.22.0: 59 files, 6MB
                   Installing qemu dependency: gnutls
Downloading https://ghcr.io/v2/homebrew/core/gnutls/manif
                  ady downloaded: //sers/nimishsabnis/Library/Caches/Homebrew/downloads/73c18cc76ca68c25efa04b8978B135Ba5ad032ae8e54f9c5fe01b70875128236—gnutls-3.8.4.bottle_manifest.json Pouring gnutls-3.8.4.abttle_manifest.json Pouring gnutls-3.8.4.abttle_manifest.json //pouring gnutls-3.8.4.abttle_man
    Already
     Ð
                  | Installing geau dependency: snappy | 
                  Downloading https://ghcr.io/v2/homebrew/core/snappy/manif
     Already downloaded: /Users/nimishsabnis/Library/Cac
==> Pouring zstd--1.5.6.arm64_sequoia.bottle.tar.gz
  ==> Pouring zstd--1.5.6.arm64_sequoia.bottle.tar.gr
| /opt/homebrew/cella/r/zstd/1.5.6: 32 files, 2.1MB
==> Installing qemu
=>> Pouring qemu--9.2.0.arm64_sequoia.bottle.tar.gr
| /opt/homebrew/Cellar/qemu/9.2.0: 106 files, 669.5MB
==> Running brew cleanup qemu'.
Disable this behaviour by setting HOMEBREW NO_INSTALL_CLEANUP.
Hide these hints with HOMEBREW NO_ENV_HINTS (see 'man brew').
nimishsabnis@Nimishs-MacBook-Air ~ % brew install nasm
   nimishsabnis@Nimishs-MacBook-Air bootloader % nano bootloader.asm
    nimishsabnis@Nimishs-MacBook-Air bootloader % nano bootloader.asm
   nimishs abnis @Nimishs-MacBook-Air\ bootloader\ \%\ dd\ if=/dev/zero\ of=bootloader.img\ bs=512\ count=1\ dd\ if=bootloader.bin\ of=bootloader.img\ conv=notrunc
  1+0 records in
1+0 records out
512 bytes transferred in 0.000313 secs (1635783 bytes/sec)
dd: bootloader.bin: No such file or directory
nimishsabnis@Nimishs-MacBook-Air bootloader % nasm -f bin bootloader.asm -o bootloader.bin
    nimishsabnis@Nimishs-MacBook-Air bootloader % nasm -v
    NASM version 2.16.03 compiled on Apr 17 2024 nimishsabnis@Nimishs-MacBook-Air bootloader% dd if=bootloader.bin of=bootloader.img conv=notrunc
    1+0 records in
   110 Tecorus In
110 Tecorus In
110 Tecorus
110 Tecorus
1110 Tecorus
112 bytes transferred in 0.000229 secs (2235808 bytes/sec)
113 bytes transferred in 0.000229 secs (2235808 bytes/sec)
114 bytes transferred in 0.000229 secs (2235808 bytes/sec)
115 bytes transferred in 0.000229 secs (2235808 bytes/sec)
116 bytes transferred in 0.000229 secs (2235808 bytes/sec)
117 bytes transferred in 0.000229 secs (2235808 bytes/sec)
118 bytes transferred in 0.000229 secs (2235808 bytes/sec)
119 bytes transferred in 0.000229 secs (2235808 bytes/sec)
110 bytes transferred in 0.00022
    1+0 records in
    1+0 records out
    512 bytes transferred in 0.000289 secs (1771626 bytes/sec)
    1+0 records in
1+0 records out
   1-to records out.

512 bytes transferred in 0.000194 secs (2639175 bytes/sec)
nimishsabnis@Nimishs-MacBook-Air bootloader % qemu-system-x86_64 -drive format=raw,file=bootloader.img
```

2024-12-29 11:33:38.974 qemu-system-x86_64[7667:58119] +[IMKClient subclass]: chose IMKClient_Modern 2024-12-29 11:33:38.974 qemu-system-x86_64[7667:58119] +[IMKInputSession subclass]: chose IMKInputSession_Modern