Name: mcp-416-cswg-workshop-ipfs-and-promisegrid
Title: IPFS and PromiseGrid
Status: Draft -- anyone can edit.

See the MCP index to create or find documents, or mcp-0-readme for an overview.
The headers above are machine-readable; please preserve format.

Text checkins

- Steve
    - Cranking on IPFS code for grid-poc
    - Nearing re-solo
    - Steve mentioned some books in the check-in discussion
        - After Hegemony (full title: After Hegemony: Cooperation and Discord in the World Political Economy), by Robert Keohane first published in 1984 https://en.wikipedia.org/wiki/After_Hegemony
        - Makers, the New Industrial Revolution by Chris Anderson https://www.barnesandnoble.com/w/makers-chris-anderson/1110929761
        - Pgp: Source Code and Internals by Philip R. Zimmermann
            - Authors preface to this out of print book: https://philzimmermann.com/EN/essays/BookPreface.html
        - Gizmocopter project https://www.linuxjournal.com/article/4549
        - Not actually mentioned by name, but on double entry bookkeeping https://en.wikipedia.org/wiki/Della_mercatura_e_del_mercante_perfetto, "Cotrugli wrote in his bookkeeping and merchandising trade manual that not only must a merchant be a bookkeeper-accountant, but that he must also be a good writer, a rhetorician and a man of letters being diplomatic all the while"
            - Another book, probably the more famous first published book on double entry bookkeeping https://en.wikipedia.org/wiki/Summa_de_arithmetica
        - https://en.wikipedia.org/wiki/In_the_Beginning..._Was_the_Command_Line
            - Available on Github https://github.com/danielmkarlsson/library/blob/master/Neal%20Stephenson%20-%20In%20the%20Beginning%20was%20the%20Command%20Line.pdf
- JJ
    - Went to a networking event for AI in banking this morning.
    - Got an AWS EC2 server in London
    - Doing lots of scraping using GoLang.

    - Data analytics to help archive profiles and boost group enrollment before final stats are locked.
    - Making plans for the final days of https://urbandead.com/ after over 20 years. The game is shutting down because of the EUs requirements of the Online Safety Act
- Donaldo
    - Got a Seeed ESP Cam board, making a mini-bot
        - possibly make it a kit? Deciding whether it should be solderless kit or not
        - Looking at a motor controller design from a creator
            - Make using N20 DC gear motors EASY with this add-on! (it'…
            - My first attempt ordering on PCBWay, seems only economical if I order +20 of them, though I could sell them at Robotics Group / Amazon? (I might message the designer on his Discord)
    - Caught cold Friday, pretty unproductive since, almost back
- Rebecca
    - Dust storm in Albuquerque last week, radio/phone emergency alert level of intensity, was really not feeling well
    - Was feeling like I was recovering over the weekend
    - Monday had an asthma-like thing and ended up going to urgent care
    - I have been resting a lot today, feel like I'm up for being on the call but if I have to tap out that is what is going on
    - Working on a test equipment build for in-town job, rebuild to fit in new office
    - Makerspace is feeling like it is going well, more put together, more of a feeling of excitement and possibility.

Plan lineup for following weeks

- 18 Mar: JJ: Design Patterns (and gdocstools?)
    - Concepts
        - slides
    - Use cases
    - Architecture
    - Code
    - demo
- 25 Mar: Donaldo: Blockchain Basics
- 21 Mar – 12 Apr: Steve running business solo
    - Best if we have everyone else take those Tuesdays (21 Mar, 01, 08 Apr)
- TBD: hands-on workshop with IPFS and PG
    - Three alternatives:
        - Codespaces
        - Vesta
        - Native machines
            - If this, then we'd want to set up each on prior thursday

- TBD: Steve: USAF CDC and training records walkthrough
- TBD: Donaldo: PromiseGrid Use Cases
- TBD: IoT and PromiseGrid
- TBD: Roadmap, outreach, videos (see Donaldo's WB from 06 Mar)
- Note: we also want to keep an eye on the MIT roundtable events, nothing more scheduled for events but this page has all their past events https://www.media.mit.edu/projects/decentralized-ai/events/
- Other User Stories
    - Virtual Desktops for collaboration
    - Education Platform for spaces
    - IoT for Makerspace management
        - Incentives to keep space/machines clean
    - Accounting software for a small business
        - This is essentially a GAAP, reporting, shipping, inventory, time tracking and scheduling, etc. layer on top of the low-level accounting bits. (including payroll is probably harder since it involves tax codes)
    - Lean implementation
    - An e-commerce website
        - Product pages are promises
            - Dynamic pricing matrix; qty, 10% for expedited shipping, etc.
        - Managing server load across 'good' and 'bad' client requests
    - The kv store, IPC, accounting, exchange rates, promise fulfillment chain of how the entire stack works as mentioned on 16 Jan in https://docs.google.com/document/d/1IQHU_rXrMLsclxlF_n77Lvym3k9C_c-rnOS5ZLB7XtM/edit?tab=t.0
    - 3D print shop (see Donaldo's WB doc)
- What features do our primary users (makerspaces/SMB owners) need?
    - E.g. cdint
    - Related to Makerspace Business Models from IoP

IPFS and PromiseGrid

- IPFS/IPLD ecosystem
    - like minds, healthy community
        - may be an even better fit than e.g. MIT decentralized AI roundtable folks
        - or DevOps
    - hash-based decentralized content-addressable storage
        - just like PromiseGrid
    - hashes are expressed as Content IDs (CIDs)
        - was already thinking to use CIDs for PromiseGrid
        - CIDs are also used by bluesky
            - https://atproto.com/specs/data-model
    - IPFS data structure is a decentralized directed acyclic graph (DAG)

        - was considering a DAG for PromiseGrid's basic structure
        - DHT Hash visual
    - DAG links are expressed as Interplanetary Linked Data (IPLD) items
        - Linking together multiple CIDs by creating a Base CID that records the relationship of the CIDs with each other
        - I was already thinking to use IPLD for PromiseGrid DAG links
        - IPLD is also used by bluesky
            - https://atproto.com/specs/data-model
    - rich ecosystem
        - including IPFS-based WASM decentralized computation platforms, including AI bits:
            - https://github.com/bacalhau-project/bacalhau
            - https://github.com/IceFireLabs/WASM-IPFS-SentientNet
        - lots of overlap between IPFS and bluesky dev communities
            - hundreds of github code search hits for Go code that mentions both bsky and ipfs:
                - https://github.com/search?q=language%3AGo+ipfs+bsky&type=Code
        - hundreds of other related projects using IPFS libraries as of 2023:
            - https://github.com/ipfs/boxo/wiki/Dependents-(consumers)-of-Boxo
    - most IPFS ecosystem code is in Go
    - bluesky borrowed from IPFS:
        - CBOR
        - DAG-CBOR
        - multicodecs
        - multihashes
        - CIDs
        - …all of which I was already trending towards for PromiseGrid
        - Other developers likely to be learning and using these things already, because of the popularity of bluesky

IPFS in the wild

- Steve notes that there is a lot of discussion online where people are confusing IPFS and freenet
- Rebecca mentions https://ipfs.tech/ as having interesting examples of how people and organizations are using IPFS
-