Design of The Infinity Project
World(X)=Dream

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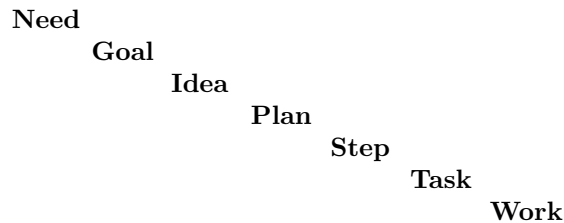
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> *"Everything should be made as simple as possible, but not simpler."*
>
> — Albert Einstein

Need-to-Work Hierarchy

We assume that everything that was ever made by people, was driven by people's **work to satisfy their needs**, and that everything that was ever done is part of the equation $\mathbf{F}(\mathbf{X}) = \mathbf{Y}$ (where $\mathbf{F}$ - world, $\mathbf{Y}$ - dream, $\mathbf{X}$ - actions), and that it can be logically broken down to the following 7-level decomposition:

Need
      Goal
            Idea
                  Plan
                        Step
                              Task
                                    Work

We created this decomposition based on the following observations:

1. Whenever someone wants something, they conceptualize it in terms of some concept, which refers to some asset $\mathbf{Y}$. ***Need*** *thus represents such concept.*

2. Whenever someone says that they want something, they specify conditions for the assets they refer to, e.g., $\mathbf{0 < Y < 1}$. ***Goal*** *thus represents such conditions.*

3. Whenever someone comes up with an idea how to get what they want, they effectively had come up with some principle to influence the world $\mathbf{F}$ by some hypothetical actions $\mathbf{X}$, to satisfy the goals inequality by equality $\mathbf{F}(\mathbf{X}) = \mathbf{Y}$. ***Idea*** *thus represents such a solution.*

4. Whenever someone comes up with a plan, what they did, is they came up with a concrete set of actions using some technology to realize the hypothetical actions $\mathbf{X}$ as ordered set $(\mathbf{x_1}, \mathbf{x_2}, ..., \mathbf{x_N})$. ***Plan*** *thus represents such a decomposition.*

5. Whenever someone comes up with a milestone $\mathbf{x_M}$, what they did, is they had just set out to take some amount of resources and convert into some highly likely corresponding deliverable $\mathbf{M}$. ***Step*** *thus represents such an assumption.*

6. Whenever someone comes up with a task in a milestone, what they just did, is set out to do some concrete **action Z** to approach $\mathbf{y_M}$. ***Task*** *thus represents such a prototype of action.*

7. Whenever someone actually tries to do some work to get a task done, what they just did, is produced an attempt $\mathbf{z\prime}$ for the task. ***Work*** *thus represents such a task attempt.*

We assume that if people can see the decompositions of all work this way, it will be natural for them to understand how making of anything was a simple piece of math to solve $\mathbf{F}(\mathbf{X}) = \mathbf{Y}$, and the knowledge will be shared.

Based on this observation, we started the Infinity Project (https://infty.xyz).

Side note: in context of the domain of *hierarchical task planning*, this could be interpreted as follows. HTN planning relies on *goal* decompositions into a potentially infinite hierarchy of *tasks*, some of which are called terminal (*atomic*). However, looking at the proposed F(X)=Y decomposition, and assuming that *goal* is a top (1st level) task, we see that the 2nd level task must always be the search for an *Idea* to achieve the goal, while 3rd level task must always be the instantiation of an idea as a *Plan*. Considering a potentially infinite task hierarchy and assuming that Nth level task is always terminal (atomic) and finishing with a possible attempt to do it (which we call *Work*) implies that the *Steps* in the proposed F(X)=Y decomposition are the potentially infinite hierarchy of non-terminal the 4th...$N-1$ level HTN tasks defining a *Plan*. In context of this F(X)=Y decomposition, we may want to call it the procedural *step hierarchy*.