PharmAsia and Pharmacy Calculation inspired from Soviet Union.
Traditional automate for a conscious help intervention when calculating mentally at Pharmacy, inspired form Sovuet Union.
Automate simple pour une relation d'aide d'inspiration Soviétique.

0. Introduction.

The automate is for a conscious intervention in the sense that it is different from interventionist to interventionist. We forward a prescription where the computer reports a healing suite of actions inspired from Soviet Union. Adopting a correct suite of healthy actions is called a sequence of interventions. The memory of the interventionist is limited, and therefore, the sequence of interventions. It is likely that the last values of the sequence are identical. At that point we know that the sequence is finished. Most of the times the sequence is what is looked for, in the quality of healing. We would say that the subject is reaching finality, and he is ranked. (and cured - there is no quality in the component of the sequence).

0.1 Mental Calculation.

Data for Control is $x_i \to y_i$. We define success $s_i \to (x_i \to y_i)$. For time definition we need $(s_i \to y_i) \wedge (s_i \to (x_{i \in \mathbb{N}} \to y_i))$. We call $x_1$and s_1 objects. $k \in \{1,2,..,n\} \subset \mathbb{N}$ is called type k of Control.

1. The mathematical prescription for the programmer in PharmAsia.

The mathematical device at use are sets. The sets contain a sequence of exercises $a,b,c,d\ldots$.Sets are known to cover a space. As an example the set $X = \{a,b,c,d\}$ covers the space $X^1 = \{\emptyset, \{a,b\}\{c,d\}\{a,b,c,d\}\}$, as well as $X^2 = \{\{c,d\},\{a,b,c,d\}\}$. (or other). Among set coverings we may have a short sub-selected suits covering the space. Here X^2 would be all features of the subject, a sub-selected suite.

Each such covering is a quality of the subject if the space has elements of well chosen exercises. The quality is $X^2 \subset X^1$.

1.1 Partition towards a different set of sets.

We define, a **partition** $\xi = \{A_\lambda\}$ of X, the collection A_λ such that $A_\lambda \cap A_{\lambda'} = \emptyset$ if $\lambda \neq \lambda'$ and $\cup A_\lambda = X$. ξ_0 is a partition of X in individual points (see singletons) and X a trivial partition. If there is a good partition, we have a hint on the nature of the exercise.

1.2 σAlgebra of a set, and σsub-Algebras.

A σAlgebra (a sort of sets of sets) is a device in relation to coverings. calculating the partition for an arbitrary space.

A partition in a countable number of sets is a countable partition. ξ is finer than another ζ if $\forall A \in \xi$, $\exists B \in \zeta$ such that $A \subset B$.

We also say that ζ is coarser than ξ.

For $\{\xi_\alpha\}$, a collection of partitions of X, we denote $\vee_n\ \xi_\alpha$ the coarsest partition that is finer than each ξ_α and $\wedge_\alpha\ \xi_\alpha$ the finest partition that is coarser than each ξ_α.

With the partition of ξ, of X, we associate a σsub-algebra $\Im(\xi)$ of $\Im$ which is a σalgebra of all $\Im$-measurable sets that are a union of elements in ξ. We have $(X,\Im,m)$, where m is the measure. Two partitions ξ and ζ coincide if $\Im(\xi) = \Im(\zeta)$. Another way to say that is: $\forall A \in \Im(\xi)$, $\exists B$ in $\Im(\zeta)$ such that $m(A \cup B - (A \cap B)) = 0$ and conversely. An endomorphism is defined as a morphism of an object to itself. An example is

$\phi : (X, \Im, m) \to (X, \Im, m)$ and ξ a partition of X. The endomorphism ϕ is periodic at point $x \in X$, if $\exists n \in \mathbb{N}$ such that $x = \phi_n(x)$. (These are the universal exercises)

1.3 Suite of partitions of a set.

A σalgebra of X would look like $\Omega = \{\varnothing, \{a\}, \{a,b\}\dots\}$ a series of σsub-algebra would be $\Omega^1 \subset \Omega, \Omega^2 \subset \Omega\dots,$. This suite is a structure of counseling. In fact, in our case, the σsub-algebras are finite. We may, therefore program these results.

We want a partition of Ω, and we have a suite ξ_k of partitions. ($\xi_1, \xi_2, \dots \xi_k$ for Ω^n).

1.4 From partition to partition.

The first step is to choose $\gamma_1\gamma_2$and γ_3, with known $\gamma_1 \cap \gamma_2 \doteq \varnothing$ and $\gamma_1 \cap \gamma_3 = \varnothing$ and $\gamma_2 \cap \gamma_3 = \gamma_4 \subset \gamma_2$.

We, as then, have the partition ξ into γ_1 and γ_2 and γ_3 as a witness. If we associate γ_2 with $\gamma_5 - \gamma_4$ from witness γ_3, we have another new partition ξ_{i+1}. From this exercise we have partition ξ_1 of $\gamma_1 \in \Omega_1, \gamma_2 \in \Omega^1$ and ξ_2 of $\gamma_3 \in \Omega^2$, $\gamma_4 \in \Omega^2, \gamma_1 \in \Omega^2, \gamma_2 \in \Omega^2$ or $\gamma_2 \in \Omega^1$. (here the computer knows precisely) and so forth. The suite is known as $\gamma_1, \gamma_2, \dots \gamma_n$.

If we find a countable suite of partitions (finite ones), namely $\xi_k \subset \sigma(X)$, $\sigma(X)$ the space, we are in a position to evaluate the suite $\gamma_1, \gamma_2, \dots \gamma_n$ of interventions.

1.5 Ordinals of sets.

For each set γ_i, we have ordinals of sets. The ordinal is a type of set where elements are ordered, finite, non interchangeable (in a *vector* to make it simple - in literature also called: the ordered type of a well ordered set).

Therefore we associate vectors a_i with sets γ_i. The linear combination $\alpha_1 a_1 + \alpha_2 a_2 + \dots + \alpha_k a_k$ sums to b with $\alpha_i < \alpha_{i+1}$.

a_i are scaled and same ordinal for each i.

2.0 Linear combinations of ordinal sets.

This is a suite of sub-selected interventions. Also the selected interventions in all is $\alpha_{1..k} a_{1..i} + \alpha_{2..k+1} a_{1...j} + \dots + \alpha_{k...2k} a_{1..l} = b_{1...i,.j..2k}$ for $i,j,k,l \in S \subset \mathbb{N}$. Here the healer specifies prescriptions for the set $\{a_i\}$. The set of all combinations of all indices are the selected exercises in all. The selected interventions are so, as the sampling distribution of a_i are skewed to the right.

2.1 Linear transforms and new columns.

In the argumentation of (a_{ij}), we have $\alpha_S < \alpha_{S \cup \{e\}}$ as a suite of interventions leading to $\{a_a, b_b, \dots k_k\}$. If the linear combinations of two of these sets of vectors lead to a same b_m (they are related to a good partition), it is exceptional, and we hope to find many of these.

In this case the suite of interventions lead to a well ordered sequence. (the healing of the candidate is thorough). For the suite e_i, we have the suite b_i. It may be there are not many such linear combinations, leading to same b_m.We then vary i in α_i.

If in the matrix (a_{ij}), we have $a_{lk} \in (a_{ij})$, and is common to many columns (with high probability) we look for all sets containing a_{lk}.

From these we select few , and augment (a_{ij}).

In this case, for the columns that are successful, the vectorial suites $\overrightarrow{a_a}, \overrightarrow{c_c}, \dots \overrightarrow{k_k}$ are augmented in the matrix B_n where $n = \| S \cup \{e\} \|$ The B, $\forall n$ are cell to cell equivalent. This is a list of successful interventions.

There are also RECOMENDER Systems, in machine learning, but for this we have to train a database.

Here the provision is in a load file to the system - no database or training.

An example is:

Our problem is reduced to the following table. $\begin{array}{c} \\ a \\ b \\ c \\ d \\ \dots \end{array}\left\| \begin{array}{cccc} a_{j1} & a_{j2} & a_{j3} & .. \\ -0.1 & 0.7 & 0 & .. \\ 0.2 & 0.2 & 1 & .. \\ 0.8 & 0.1 & 0 & .. \\ .. & .. & .. & .. \\ .. & .. & .. & .. \end{array} \right\|$. We avoid sets containing c and b if they have a. Set $\{a,b,c\}$ as with probabilities $\begin{bmatrix} 0.7 \\ 0.2 \\ 0.1 \end{bmatrix}$(this is not a fuzzy set, but fuzzy sets may be an alternative to this sort of calculation). We also choose a witness $\{b\}$, namely $\begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}$. ($b$ does not seem to be present in a_1 or a_2). If we assume that there are no sets that contain together b or c. This prescription deletes all sets that are concerned (from the σAlgebra). The first partition is in between $\begin{bmatrix} -0.1 \\ 0.2 \\ 0.8 \end{bmatrix}$ and $\begin{bmatrix} 0.7 \\ 0.2 \\ 0.1 \end{bmatrix}$. The witness is $\begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}$. Here the σAlgebra is from $\{a,b,c\}$. If we change this X set to $\{a,b,c,d\}$ we have a new sequence of partitions.

For the first suite of interventions, we have $\begin{bmatrix} -0.1 & 0.7 & 0 \\ 0.2 & 0.2 & 1 \\ 0.8 & 0.1 & 0 \end{bmatrix}\begin{bmatrix} 0.3 \\ 0.3 \\ 0.3 \end{bmatrix} =$ $\begin{bmatrix} 0.18 \\ 0.42 \\ 0.27 \end{bmatrix} = A_1\alpha = b_1$, and for the second suite of interventions, we have: $\begin{bmatrix} -0.1 & 0.2 & 1 \\ 0.2 & 0.2 & 0 \\ 0.8 & 0.6 & 0 \end{bmatrix}\begin{bmatrix} 0.3 \\ 0.3 \\ 0.3 \end{bmatrix} = A_2\alpha = b_2$. If we judge that $b_1 \approx b_2$ then the columns are well chosen, and the exercise is clear.(we compared $b_1$and b_2). Further else

$$\begin{bmatrix} 0 & 1 & 0 \\ 0.2 & 0 & 1 \\ 0.8 & 0 & 0 \end{bmatrix} \begin{bmatrix} 0.3 \\ 0.3 \\ 0.3 \end{bmatrix} = A_3\alpha = b_3.$$

If the candidate does not meet $b_1 \approx b_2$, but $B = \begin{bmatrix} -0.1 & 0.7 & 0 \\ 0.2 & 0.2 & 1 \\ 0.8 & 0.1 & 0 \end{bmatrix}$ is cell to cell equivalent to $\begin{bmatrix} 0 & 1 & 0 \\ 0.2 & 0 & 1 \\ 0.8 & 0 & 0 \end{bmatrix}$ and these are the unique resemblance in all combinations of these cells in all matrices, we say the two matrices suit in good column selection and exercises are: $\{\{a_{j1}\}, \{a_{j1}, a_{j2}\}\}$, else if $b_1 \neq b_2$ and $b_1 \neq b_3$, and $A_1 \approx A_3$ then $\{\{a_{j1}\}, \{a_{j1}, a_{j2}, a_{j3}\}\}$.

All over, we saw $\alpha = \begin{bmatrix} 0.3 \\ 0.3 \\ 0.3 \end{bmatrix}$. This choice was done because we had confidence that our witness was correct. If this is not the case, another witness would have a probability $p < 0.3$. One such example would be $\alpha = \begin{bmatrix} 0.45 \\ 0.45 \\ 0.1 \end{bmatrix}$, or $\begin{bmatrix} 0.3 \\ 0.6 \\ 0.1 \end{bmatrix}$

We also see a_{23} and a_{31} as big. We delete all sets containing a and also $\{a, b, c\}$ from the σAlgebra.