## Digfor

byte-code with number of stem and number of grammatical form of stem for text on any languages

colored logotype

black-white logotype

## HMI requires identifiers

OS

|  |  |
| :--- | :--- |
| 3483 | стойк |
| 3484 | стойл |
| 3485 | сток |
| 3486 | стол |
| 3487 | столб |
|  |  |
|  |  |
|  |  |

на столе ПОД СТОЛОМ к стрлу $3486-24$ $3486-25$ $3486-26$

bnar
$\xrightarrow{\square}$ $\downarrow$
tuple

OS

|  |  |  |
| :---: | :---: | :---: |
| 24 | на | е |
| 25 | под | ом |
| 26 | к | у |
|  |  |  |
|  |  |  |
|  |  |  |



## Classification of languages by presents of dents

## dents


analytical, synthetycal, isolating languages: only $1^{\text {st }}$ and $5^{\text {th }}$ dents, only $2^{\text {nd }}$ and $4^{\text {th }}$ dents, no dents

## Classification of languages by lacunas, i.e. by location of dependent stem



01-lacuna language (before $1^{\text {st }}$ dent of main word)
12-lacuna language (between $1^{\text {st }}$ and $2^{\text {nd }}$ dents of main word, e.g. «Свой» + «К
сыну» = «к своему сыну»: in non-incorporating languages with left branching,
e.g. English, Russian, etc)

23-lacuna language (between $2^{\text {nd }}$ dent and stem of main word, i.e. like between
$2^{\text {nd }}$ and $3^{\text {rd }}$ dents: in incorporating languages with left branching, e.g. in Eskimo)
34-lacuna language (between stem and $4^{\text {th }}$ dent of main word, i.e. like between
$3^{\text {rd }}$ and $4^{\text {th }}$ dents: in incorporating languages with right branching)
45-lacuna language (between $4^{\text {th }}$ and $5^{\text {th }}$ dents of main word: in
non-incorporating languages with right branching)
56-lacuna language (behind $5^{\text {th }}$ dent of main word)

# OS: lacunarity depends 

You walk. Do you walk? Сто быков. Быков сто.

# OS: order of dents of similar parts 

```
dent of 1 1 st 1 1 st dependent stem dent of 2 nd }\mp@subsup{2}{}{\mathrm{ nd }}\mathrm{ dependent stem
```

| dent of $1^{\text {st }}$ | dent of $2^{\text {nd }}$ | $1^{\text {st }}$ dependent stem | $2^{\text {nd }}$ dependent stem |
| :--- | :--- | :--- | :--- |

## OS: order of dents of co-similar parts


verb group with noun vs. verb group with adverb
adjective group with noun vs. adjective group with adverb
noun group with dependent noun vs.
noun group with adjective vs. noun group with numeral

# OS: order of dents of main and dependent words 

```
dent of dependent word
```

dent of main word
main word
dependent word
main word
dependent word

## E.g. chukchi incorporation

## гавэтъатармақорама

 (с бодливым сильным оленем)

## E.g. caucasian postfixes at one stem: betw, beside, above, etc

|  |  |  |  |
| :--- | :--- | :--- | :--- |



# E.g. german separable prefix really is an adverb, written together with verb 

Er hörte gestern Abend dem Redner eine halbe Stunde lang zu
(Вчера вечером он слушал полчаса выступающего)

Er hat dem Redner eine halbe Stunde lang zugehört
(Он слушал полчаса выступающего)

Hörst du zu? Hast du zugehört?

## ER-model of clause



## Classification of grammatical categories

lugr - changeable and coded in Digfor
(tense, genus, evidentiality, mode, admirative, full/short form, negation, modality, number)
vogr - unchangable and stored in OS
(conjugation, declination, gender)
nigr - changeable, not coded, calculated by location in clause, e.g. «first, intermediate, last» (for goup flection of noun in Turkic and Ossetian)

## Spray for head\& double marking

negation
(of verb into actant): «вИжу
смысл - не вижу смысла»)

SUS

face, number
(of actant in subjective case into
verb in present and future tense),
number, gender
(of actant in subjective case into
verb in past tense

## Nuvar

is binary variable with numerical. It can be
$1^{\text {st }}$ dent ("ten men" in russian, indonesian) $2^{\text {nd }}$ dent (like "mega-, giga-", etc) $5^{\text {th }}$ dent («men ten» in russian, swahili)

## Drift for noun\&numerical

## («молоко\&творительный пять литр» $\rightarrow$ «пятью литрами

 молока»)

## So we have

# Single construction of languages from point of view of engineer 

## Reduction of file size

Increasing of speed of processing

## Absense of mistake of neural net



## aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaea. ${ }^{\text {x }}$ aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa аaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaaaaaaaaaaa




```
Dyccount Eerailcmed (frpogenesi) murnusicerd -
```

Ingrenecr:

Остальная часть дня, день конца, конец ночи.
Outalnaya chast daya, der kontsa. kentts nochi.

## Speaker seeks

free help of software engineers to write:
GPL program to re-encode Tefor-Digfor, plugins for text editors (SciTE, notepad++, etc)
free help of linguists to state stems and combs of languages

## Write a letters



