

COMPUTER MODELING OF THE PHONETICS OF THE UZBEK LANGUAGE

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***Annotatio:** Providing students with practical knowledge on computer modeling of the phonetics of the Uzbek language.*

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In the process of learning or teaching any natural language, first of all it is addressed to its alphabet. In the course of mastering the alphabet, we simultaneously face issues of orthography, orthography, and phonetics. At this point, it should be said that although phonetics is one of the first stages of language learning, it is difficult to research it and draw a conclusion by setting a clear limit to it.

Today, the issue of computer modeling of the phonological system of the Uzbek language and its various elements, in particular, the transcription symbols of the language, occupies one of the most central places in the scientific research of Uzbek computer linguistics.

Modeling of the transcription symbols of a natural language makes it possible to automatically perform the phonetic analysis of various linguistic objects such as words, sentences, speech in this language.

For example, according to research conducted worldwide, the following rules are followed when modeling the phonetic analysis of a word (these rules are accepted as a general algorithm).

1. Writing the word.
2. Determining the number of letters and sounds in a word.

3. Identifying allophones, describing phonemes and presenting their orthographic image.

4. Divide the word into syllables and determine the type of syllable.

5. Identifying the accented syllable.

6. Give the accentual pattern of the word.

As an example, we present the phonetic analysis of the word «*фонарь*» borrowed from the Russian language into our lexicon.

1. Spelling of the word: lantern.

2. The number of letters and sounds in the word: 6 letters, 5 sounds.

3. To describe the phonemes and give their orthographic representation: *ф* – [ф]; *о* – [а]; *н* – [н]; *а* – [а]; *рь* – [р']. In this word, "о" is pronounced like "а", "ь" and «р» serves to pronounce the sound softly.

4. Dividing the word into syllables and determining the type of syllable: *фо-нарь*.

5. Determining the accent: *фо-нарь*.

6. Phonetic transcription of the word: [фанáр']

The development of models for the phonetic analysis of the word allows to pronounce and write the words learned from foreign languages based on the specific speech models of the Uzbek language. For example, words such as "Windows" or "Corel Draw" cannot be written in their original pronunciation through the existing letters of the Uzbek alphabet.

In addition, by creating a transcription model of the language, it becomes possible to create multimedia content for computer teaching of this language, as well as to create transcription programs.

Various problems and requirements that arise in the creation of programs that read Uzbek texts and transcription programs are presented in sources related to the field:

1. Problems that arise when creating a program that reads texts in the Uzbek language on a computer:

1.1. Dividing words into syllables. Creating a list of joints.

1.2. Read the words with the correct intonation. Making a list of new words (budjet, lustra, byuro).

1.3. Discrimination of paronyms in text reading. Making a list of paronymous words (dars-darz, bop-bob).

1.4. Giving the rules of correct pronunciation of consecutive vowels in words (oila-oyila).

1.5. Pronouncing the sound "ng" differently from the consecutive consonants "n" and "g". Make a list of words with the sound "ng" (dengiz, tong, menga).

1.6. Correct pronunciation of words with hyphens. Make a list of such words (sur'at-surat).

1.7. Correct reading of double vowels in words. Making a list of double vowels (tabiiy, inshoot).

1.8. Reading voiced consonants in words in a different manner than voiceless pairs (kitob-kitop, avtobus-aftobus).

2. Problems that must be solved when creating a program (transcription) that represents it in writing on a computer during the process of entering oral text in Uzbek:

2.1. Write proper words, make a list (kompyuter – kamputer, tom – to‘m).

2.2. Correctly note the words with a hyphen (she‘r – sher, ta‘na – tana).

2.3. Correct spelling of successive vowels (muammo, itoat).

2.4. Differentiate words with two identical vowels (shuur, aura, mutolaa).

2.5. Eliminating problems arising from the matching of two consecutive consonants in pronunciation (ketdi-ketti, tuzsiz-tussiz).

2.6. Correctly write words with double consonants (because they have different meanings, qattiq-qatiq, tilla-tila).

2.7. Making a list of unpronounceable consonants at the end of the word (Samarqand – samarqan, g‘isht – g‘ish).

2.8. Correct spelling of synonyms (shosupa-shohsupa, barobar-baravar).

2.9. Differentiate common nouns from common nouns (Yangiyo‘l-yangi yo‘l, Lola-lola).

2.10. Differentiate compound words from phrases and write them correctly (qizilishton-qizil ishton, mingoyoq-ming oyoq).

2.11. Paying attention to the spelling of abbreviations (AQSH, BMT, O‘zMU).

2.12. Write pairs of words correctly (ota-ona, katta-kichik, asta-sekin).

2.13. Write repeated words according to the spelling rule (yo‘l-yo‘l, qop-qop, dum-dumaloq, ko‘m-ko‘k).

2.14. Separation of prepositions written with a dash (bordim-ku, sen-chi, men-a, aytdi-da, keladi-ya).

2.15. Paying attention to the spelling of compound verbs (bodomqovoq).

2.16. Correct spelling of words with regular numbers (2- sinf).

2.17. Paying attention to the spelling of capital letters (Navro‘z bayrami).

2.18. Differentiation of adjectives written in quotation marks («Lazzat» oshxonasi, «Navoiy» romani).

2.19. Correct spelling of the names of higher state organizations and positions, international organizations (Birlashgan Millatlar Tashkiloti).

2.20. Correct writing of excerpts and dialogues.

2.21. Compile a list of words whose composition changes with the addition of a suffix (o‘g‘il-o‘g‘li, shahar-shahri).

2.22. Distinguish affixoids from words and pay attention to their spelling (xona, noma, poya, kutubxona, taklifnoma, sholipoya).

In general, solving the above-mentioned problems belongs to the group of practical problems of Uzbek computer linguistics, and the solution of such problems, in turn, depends on the level of computer modeling of natural language phenomena.

For computer modeling of the elements of Uzbek phonetics, first of all, it is necessary to create transcription models of the sounds of this language.

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