International Conference on Electrical, Computer and Energy Technologies (ICECET)

Human-Centered Software Design for Knowledge-Based Processes

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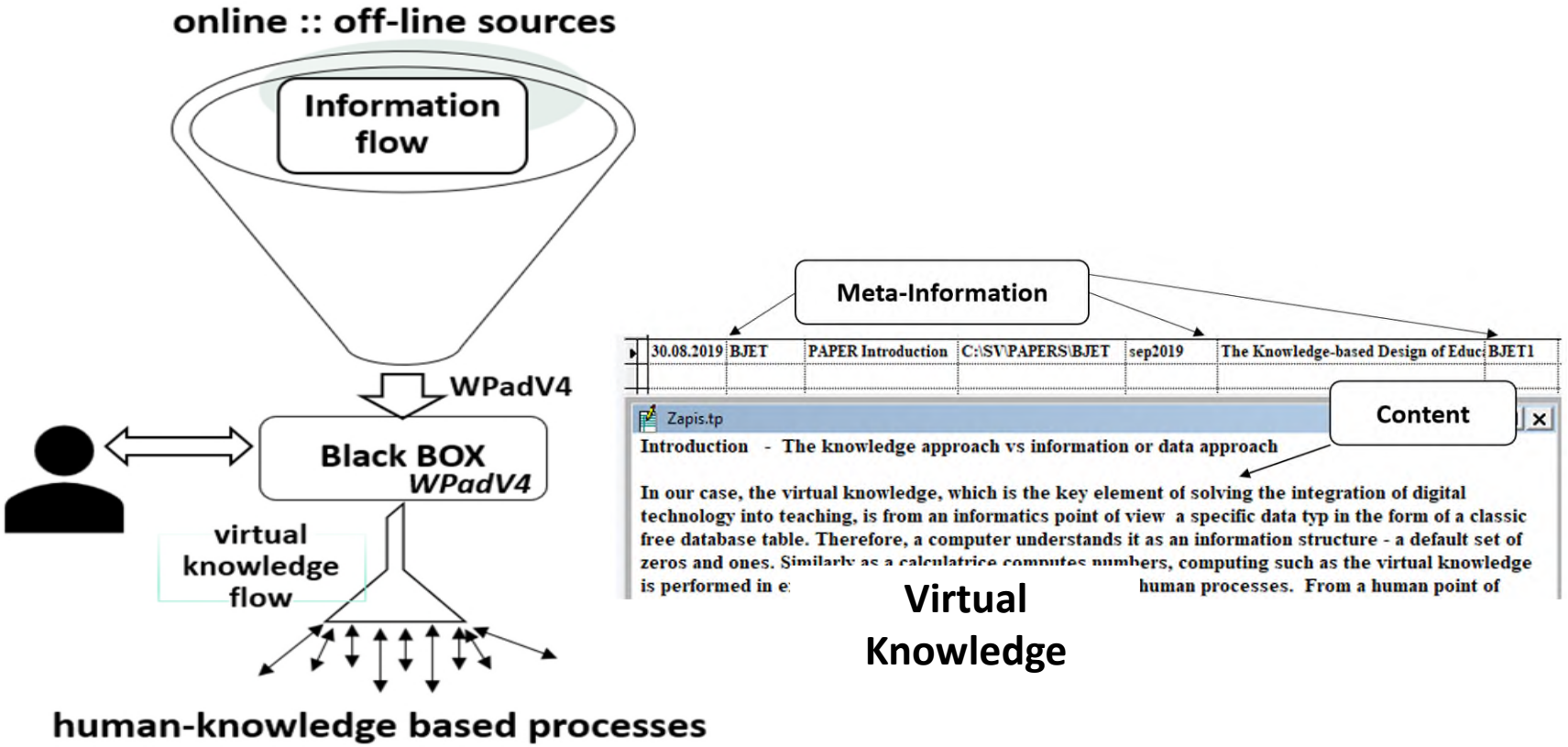
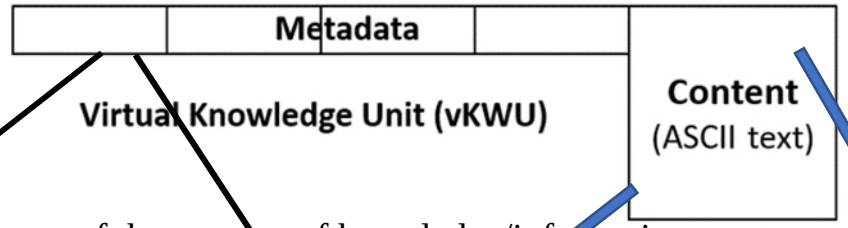
Abstract

- **At the global level, too much information is rapidly overwhelming individuals. The main challenge is how to adapt digital technologies to human thinking without digital stress.**
- **If the interaction between a computer and a human is understood as a relationship between two powerful processors, the weakest point of the technology is the issue of how to improve the flow of information from a person to the computer.**
- **The aim of this paper is to present an alternative knowledge-based software design and a suitable IT infrastructure for applying a non-relational database paradigm for this purpose.**
- **In this context, the technological approach uses so-called 'virtual knowledge' can help individuals and knowledge workers to achieve better knowledge processing.**
- **The human-centered 'all-in-one' supporting computing system presented here can be universally applied to support any knowledge-based process and can replace numerous other software that individuals would need to use for the same activities (e.g., teaching and learning, self-study, research, publishing, cloud/offline interaction, personal knowledge management).**

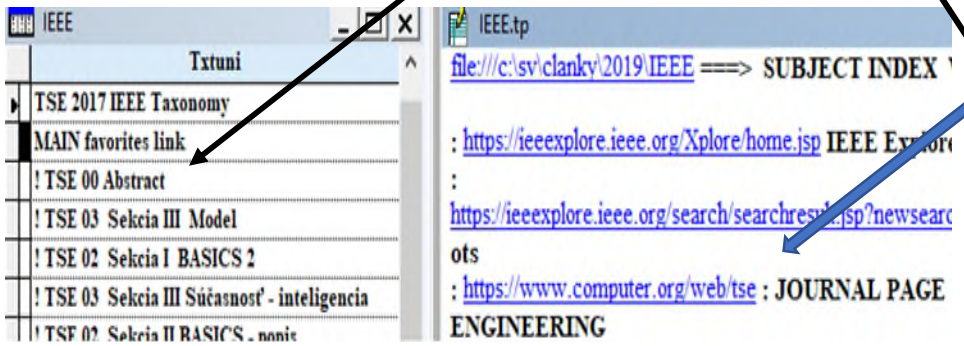
Schema of information flow for knowledge-based processes



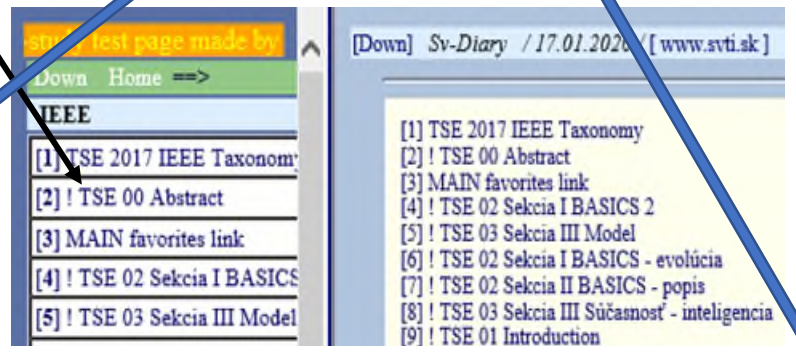
Screenshots how human knowledge flow is insereted to the Virtual Knowledge Unit as a one row of Virtual Knowledge Table, consistingg of many rows (virtual knowledge), so a personal Knowledge Base is created from the groups of Knowledge Tables



Schema of the concept of knowledge/information representation



Screenshot of part of the IEEE table



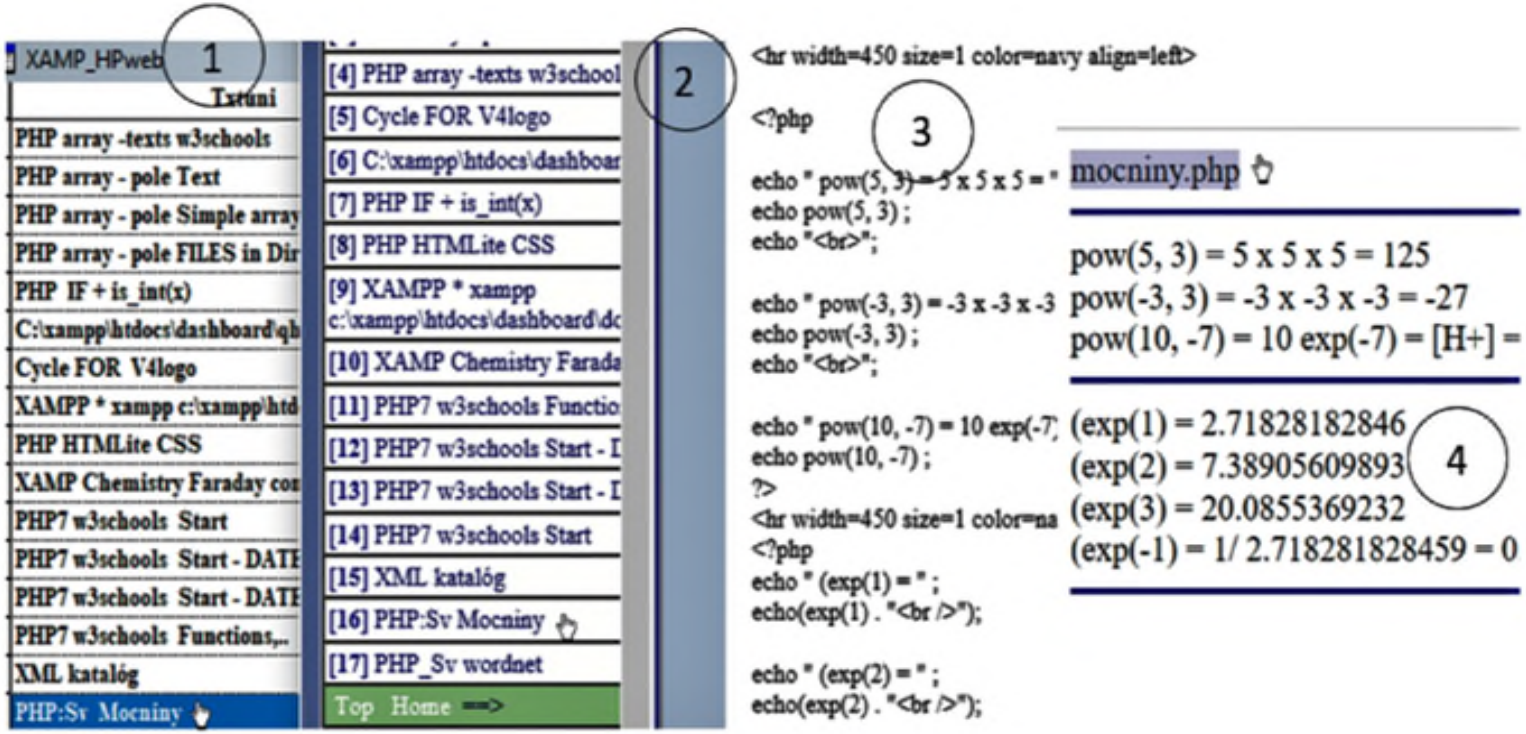
Screenshot of part of the IEEE table converted into html

Example of concentration of teaching material onto one screen using WPad as the PHP source code repository

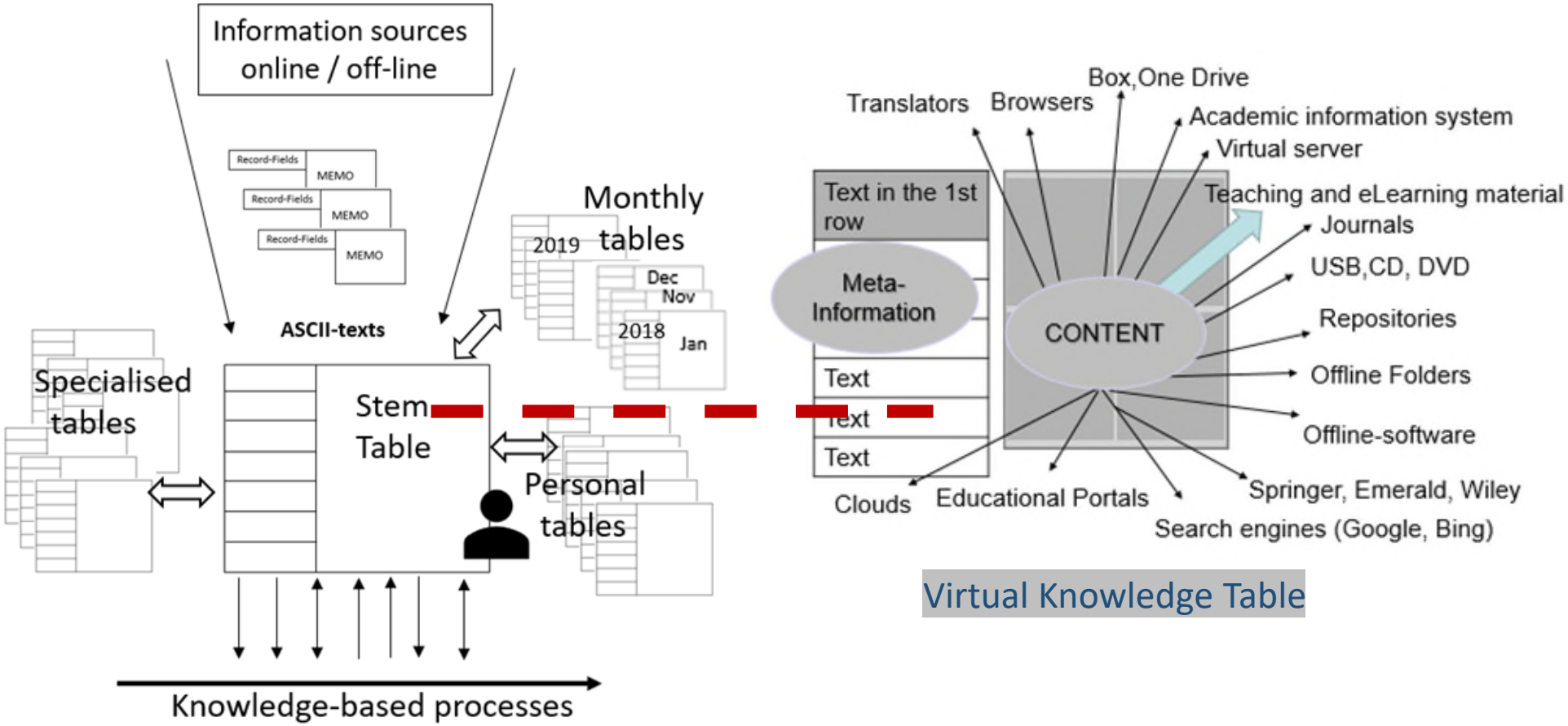
1. WPadV4 table – source codes rows in the WPad environment

2-3. Conversion to HTML table, – source codes rows in HTML format

4. Result of the launched PHP code – result of source code opened by browser (student does not see XAMPP)



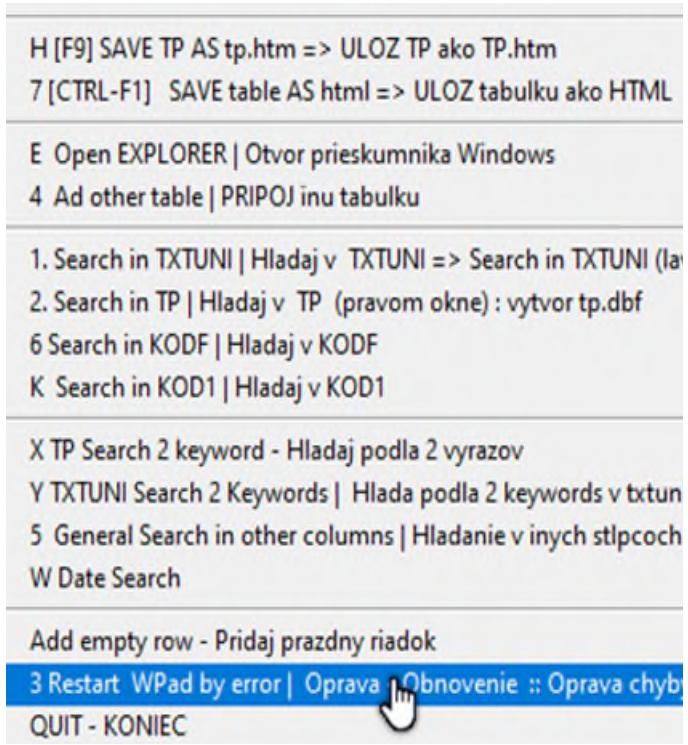
Schema for HUMAN information processing, involving conversion to VIRTUAL KNOWLEGE and processing in the WPadV4 stem table

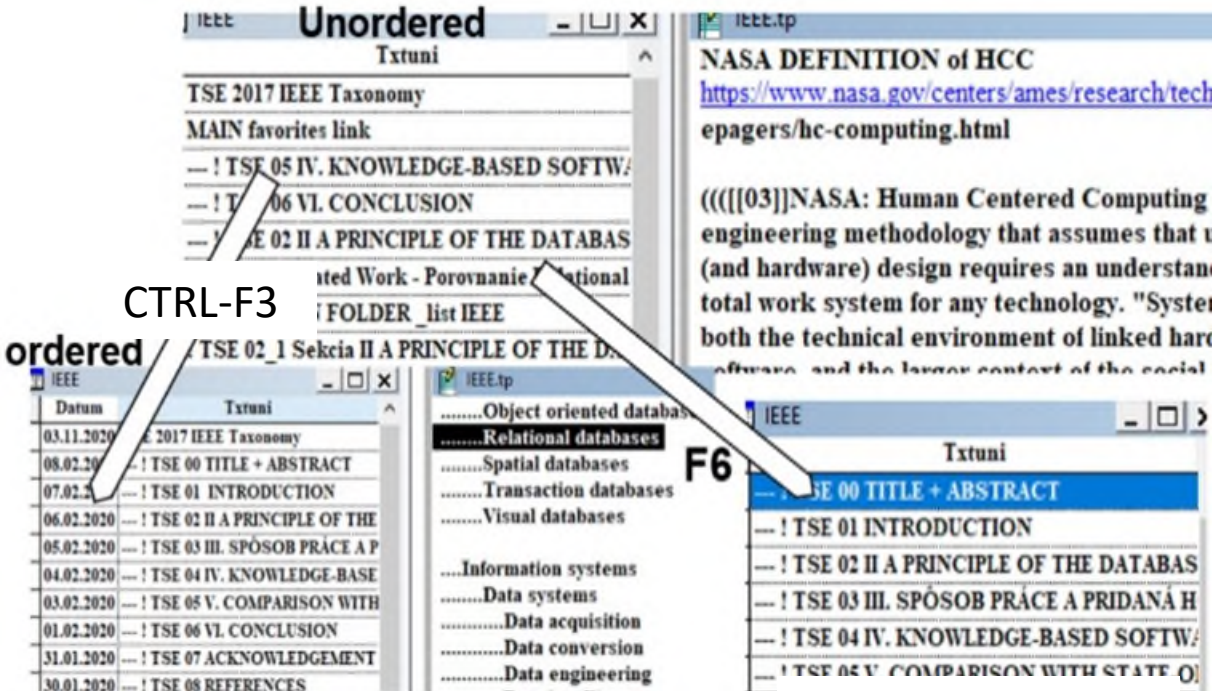


Virtual Knowledge Table

Examples of self-reordering of the IEEE knowledge table

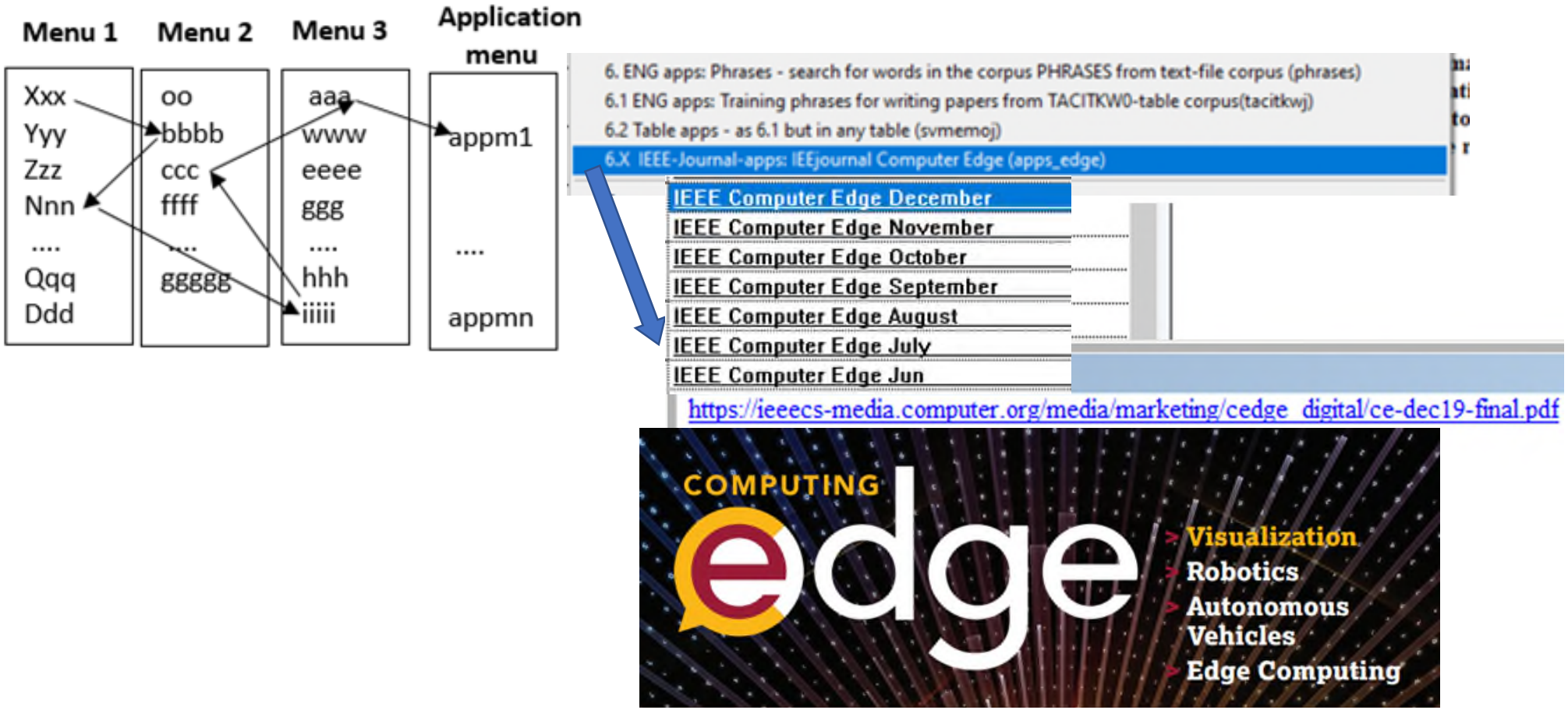
Menu 1



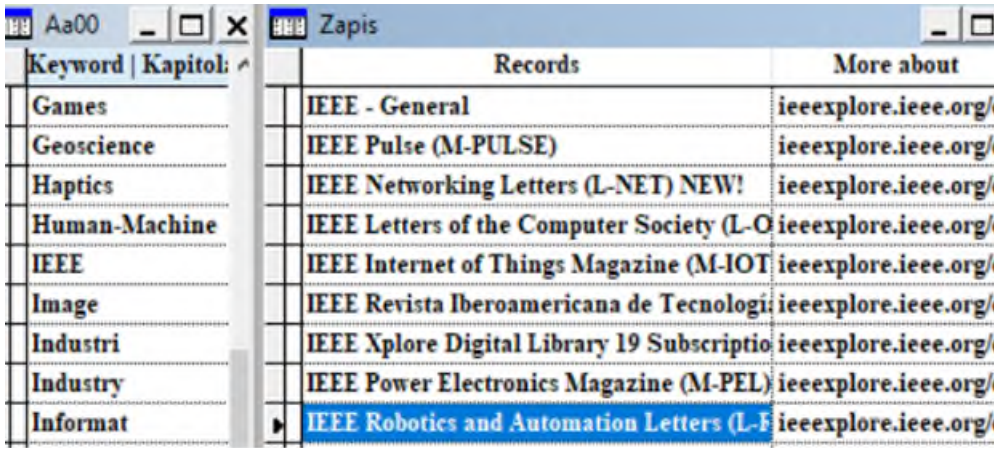


auto-filtering (F6)

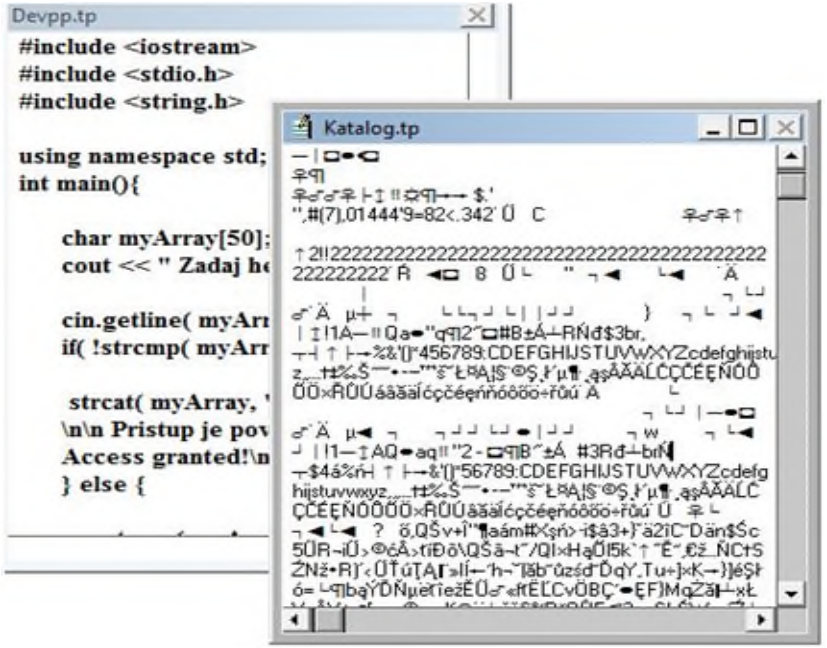
Examples of using Aplication Menus for opening IEEE Computer Edge Journal



Future research focus - towards inteligent Knowledge Structure



Examples of working out the IEEE taxonomy in WpadV4
(starting a modeling of auto-ontology and inteligent structure)



Automatic inserting of files into Knowledge Virtual Table
(it depends on computer performance)

Thanks for paying attention

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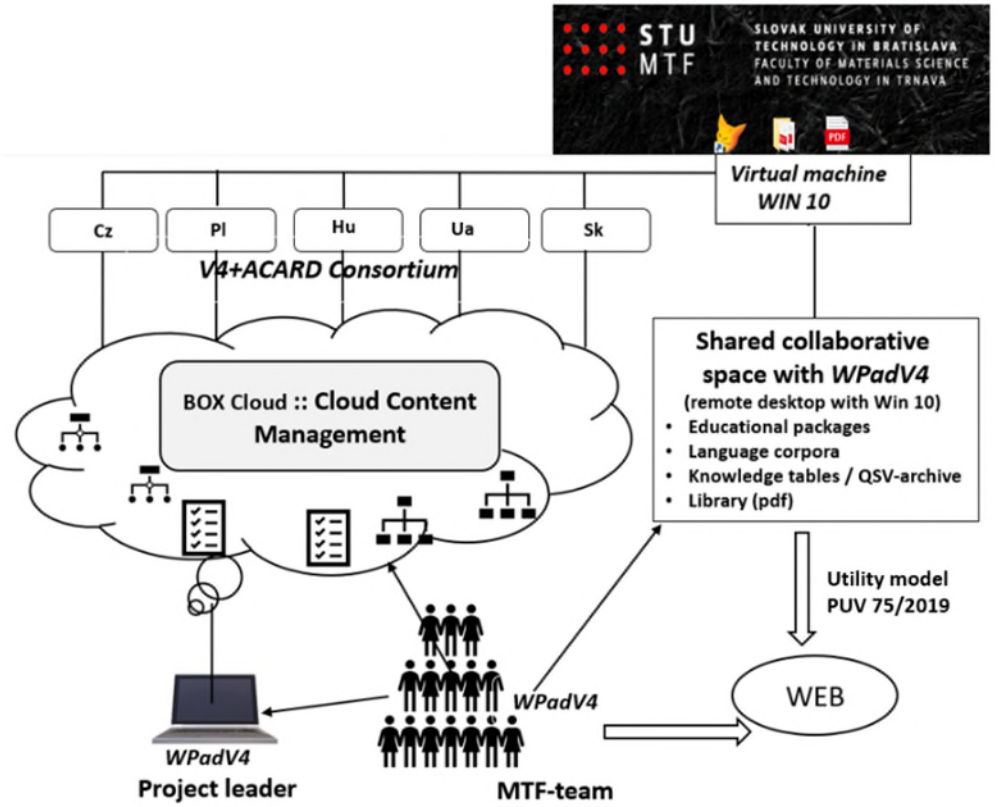

Consortium V4+ACARDC - project
IT infrastructure using Wpad software