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2009

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https://hdl.handle.net/10945/25359

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A review of Internet search results shows that Redhat Linux (www.linux4arab.com/ indexnew.shtml), Macintosh (www.apple.com/macos/featuresforyou.html), and Microsoft Windows 58/98, NT and 2000 all come in Arabic versions (www.microsoft.com/ middleeast/products/). The Microsoft Office suite of applications software including Internet Explorer is available in Arabic and should support Farsi and Urdu soon. In short, running an office computer in Arabic is possible. Running an office computer in other languages of interest such as Farsi, Urdu or Pushtun is much more difficult because developers of software are not pursuing these language groups as hard as they are Arabic. New computer standards, such as Unicode character sets, will continue to improve the ability of the graphical user interface shell and selected applications to support a wide variety of languages.

Doing any thing more advanced than running office software in Arabic is an entirely different matter. All the operating systems and applications mentioned in paragraph one were written in English based programming languages and later had Arabic shell added. I could find no evidence that any programming language could be used in any language other than English. By in English, I mean that the high level programming language used the ASCII character set (which consists of the characters on a standard keyboard) and English vocabulary and rough syntax. High level programming languages are based on English due to the history of computer chips. The first computer chips were designed in the United States and most central processing units (the brain of a computer) are still designed by U.S. companies (Intel, IBM, Motorola, Texas Instruments, Advanced Micro Devices). The people who designed these chips thought in English and even though the devices they design work on ones and zeros, when the designers put together programs they worked from English. The low-level programming languages, starting with assembly language are still designed to use the ASCII character set, and English vocabulary. The first high level languages (a language designed to be written in easily understood words by a human programmer and then compiled or interpreted into a machine understandable format) were designed by groups like IBM and the DOD and used the ASCII character set and English vocabulary and syntax. English became so much the *lingua franca* of computing that even when high level languages were designed by non native English speakers (PASCAL, OBERON), they designed them to use the ASCII character set and English vocabulary and syntax (http://ics.inf.ethz.ch/oberon/).

See http://faculty.juniata.edu/rhodes/lt/plhistory.htm for more information on the history of programming languages. The UNICODE standard for writing non-English languages and alphabets on a computer represents the first good opportunity to design a high level programming language to use a non-English language as its basis. It would involve a compiler or interpreter able to turn the non-English high level language into machine code understandable by CPUs designed by English speaking chip design companies. Unless the selected non-English language was Chinese there would probably not be a large enough market to make this anything but an academic exercise. India might have been a potential market for a non-English programming language but the only language all Indian programmers have in common is English.

All the university sites found during the search for software in foreign languages came by default in English. Some but not all could translate their site into a Middle Eastern language. Computer Science is a discipline taught in English in the Middle East and south Asia. Any serious programming and by extension any serious hacking will be done by a person with a fairly good knowledge of English as it relates to computer science. This does not imply that they will have a good grasp of spoken English outside of their technical area.

A corollary to this is that much of the Middle East is hiring English speaking programmers and IT specialists. www.gulfjobs.com and other recruiting services are looking for personnel to handle the computing needs of the Gulf States and the rest of the Middle East and knowledge of Arabic was not a major requirement. Of the fifty-three openings at one of the companies recruiting over the Internet, only one required knowledge of Arabic (http://www.gulfjobs.com/users/homepage.pl?ACTION=VIEWJOBS&COMPANY_NAME=GlobeNet+Information+Technology).