Above:
Ahmed bin Mohammed being briefed about Bil Arabi Initiative

Towards Making Arabic a Software Programming Language; Challenges and Opportunities

"I participated in Bil Arabi competition and I did not win, but I was not sad, because the knowledge I acquired is more important than the award itself," commented a follower of one of the Bil Arabi initiative's social media platforms. Bil Arabi initiative stemmed from youthful hearts, full of love for their language, who proposed it to the Mohammed bin Rashid Al Maktoum Knowledge Foundation (MBRF).

The foundation adopted these good efforts and placed the initiative on its list of activities intended to preserve our Arabic language, restore its glory by promoting its use on social media channels, to support the efforts exerted in the service of knowledge. In fact, it became one of the pioneering initiatives on social media channels.

Exaggerated Demands
This initiative brought about a great positive

resonance in the hearts of the Arabs and has increased the interactions in the virtual space, with its literary aesthetics and linguistic benefits that reflect the wonderful rhetorical and expressive inventory in books of language, literature, grammar and meanings. All of this has motivated us to turn our attention on the social media channels and the virtual space forums, which led to a question: Can the Arabic language become one of the global programming languages, and have a foothold ahead of all the languages dominating the software science?

The virtual communication sites had always posed this question, and frequent calls urging to restore the role of Arabic language and grant it more attention have increased to include demanding a programming language in Arabic. Many followers showed interest and support for the initiative, but quite a number saw the campaign as nothing more than daydreams and exaggerations that have no place in the crowd of languages given the tremendous development that modern programming technology has reached. To some, the demands were hallucinations that can never be realized in the era of technical and technological explosion which is dependent on modern programming languages.

Local Programming Languages

Some opponents say: What is the point of having an Arabic programming language? The other answers that "this is a strange question, and the strangest thing is that we are without an identity in the age of information. So why do all people in the world use well-known programming languages and we try to be different and isolated? I used to think that there are no programming languages in any language other than English, but after searching for it, I found out that

> **Bil Arabi restored the connection of the Arabs with own language and reunited the one family whose members were separated in the crowd of different languages and dialects**

there are Chinese, Korean, Spanish, German, Russian programming languages. So why can all of these people create programming tools in their languages and we cannot create an Arabic programming language?"

Others on social media were not satisfied with these demands, as they saw them as impractical steps and unsubstantiated calls for restoring the past glory of the Arabic language.

Seeking to improve the position of Arabic language in the digital world should be based on openness and the desire for establishing a new place for this great language.

The Importance of other Languages

It may be said: Bil Arabi initiative has succeeded in returning the Arabic language to our daily life and on social media, but it does not, in any way, call for ignoring other languages. Rather, the translation movement from other languages into Arabic is the way to start from where the others ended, not to start from scratch, at a time when evolution is calculated in seconds, not days, or years.

Again, opponents say: The digital space is now full of programming languages, yet the dominant languages are little. Hence, there is no point of developing a new Arabic programming language. Also, learning another powerful language in creating advanced Arabic applications that serve the community is more beneficial than making an Arabic programming language. Proponents argue that producing a programming language

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Bil Arabi initiative stemmed from youthful hearts full of love for their language

will deepen our knowledge of programming more than we have learned to code in any language. Eventually, underestimation leads to ideas being killed before they are applied, advocates of this direction support their argument by saying: "A journey of a thousand miles begins with a single step."

Experiencing the Arabic Programming Languages

One of the programmers demanding an Arabic programming language says: "Arabs have begun to envision a programming language since the early days of the advent of the computer, and have indeed worked to find some of them, including Gharib (1978), Khwarizmi (1978), Pascal Al-Arabi 1988, and Zai language (1998), C language (2001), etc. Some of these languages

> *Programmers see that the digital space is full of programming languages, yet the dominant languages are little, and there is no point of developing a new Arabic programming language*

were intended for a single type of computer prior to the era of the IBM personal computer. IBM-PC Clone, then it developed into a translation and simulation of well-known international programming languages such as Pascal, COBOL, and BASIC 8. Finally, Alef Language, which is a high-level third-generation open-source Arabic programming language, was designed in 2018 and was further developed in 2020 as an educational programming language to provide Arabic speaking students with an easy ground to learn the basics of programming in the Arabic language.

Yes, a programmer who has mastered the latest advanced global programming languages responds, but can one of these local languages be used in the software industry or even academic uses? The vast majority of non-English-based computer languages are of limited audiences. They were often developed as a hobby or graduate project and were not used after this point. Arabic language is not exempt from this phenomenon. There are several Arabic programming languages, and some of them were developed by huge companies such as Sakhr, but their professional use is close to none.

The reason is not a weakness associated with the Arabic language, or even a weakness of the Arabic programming community. The reason is that, like it or not, the mother tongue of IT is English. Look at successful language and

operating system developers and you'll find people from all over the globe, from different cultures and languages, all of whom have adapted their products in English. The reason is that for any advanced product to succeed, it is directed to the category of developers. The most important point is not the effectiveness of the product, as some might think, but the wider market for which the product is intended. Since the vast majority of the market uses English to communicate, it makes sense to target it.

A Long Journey

In this respect, one of the participants in the Bil Arabi initiative shed light on an important aspect that Arabs especially Arab programmers must take into account in their journey towards developing an Arabic software operating system. Arab programmers should not be driven by excitement about the desire to have Arabic get a foothold in the world of programming languages, without looking at the time that the founders of programming science spent to get to where it is now.

Successful programming languages are not out of chance, successful languages were created by their owners for a specific purpose, and before they were made available to users, they went through several stages until they became popular.

There are Arabic programming languages, but what do you want from developing those languages? Do you want to learn how to design a language, for example? It's great, but if you want a language to use and programmers can't live without it, you have to develop it for at least ten years in order to meet basic needs and avoid deficiencies. The reality says a different thing, unfortunately.

The programmer adds: I am not against the development of Arabic as a programming language. Development of any programming language is an excellent skill and experience which is very nice to have, but will I constantly develop this language? Mostly not, unless there is support and sufficient advanced features that make me leave the other languages I am working on now.

Absence of Funding

This programmer's statements draw us to a very important aspect which is that the success

of an Arab programmer in developing Arabic as a programming language is nothing more than the attempts of amateurs or researchers who loved Arabic and tried to find a place for it among programming languages. However, for such a project to be successful and sustainable, it must be heavily financed. We are not talking about a product in a primitive market, but rather a challenge to a competitor in the big programming market. And competing with it is almost impossible, given the billions of dollars allocated to it for its development, so what about the amount needed to establish a new product?

In conclusion, appreciation and respect must be given to everyone who sought to serve the Arabic language in any field of science and any chapter of knowledge, but in return, Arabs should know that the history of science among the Arabs has taught that the goal is to access knowledge and invest it in the service of mankind. There is no doubt that achieving this goal will take place in any of the world's languages. It is also imperative to follow in the footsteps of the early Arabs who understood the meaning of knowledge and loved the truth.

This may be an impetus for programmers who love Arabic to break into this section and create an Arabic programming language. If it is impossible to compete with the programming language that is currently on the throne of technology, let the translation into Arabic movement be revitalized.

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Bil Arabi initiative has succeeded in returning the Arabic language to our daily life