'Anti-aging' technique for computer software systems

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A University of Leicester researcher has investigated creating an optimum 'anti-aging cream' for computer software systems.

The doctoral study in the Department of Computer Science aims to deliver quality improvement of existing outdated software systems. The research involves a technique called 'refactoring' that keeps aging software systems young.

Fawad Qayum, who is carrying out the research, said: "To survive in the industry software systems need to be enhanced, modified and adapted to new customer demands by fighting against the existing system limitations.

"When software is enhanced, altered and adapted to new requirements, the quality of the software declines with time, therefore decreasing the complexity and increasing the quality of software is one of the most important objectives.

"Refactoring is considered one of the most suitable techniques to achieve these objectives by restructuring an existing body of design, changing its internal structure without changing its external behaviour."

He added: "In the last 50 years, we have observed a huge development in the use of software in business, research, industry, and critical infrastructure systems such as civil, telecommunications and medical systems etc. whilst new software systems are developed at incredible

speed. Accordingly, the existing software systems are getting outdated quickly because of rapid pace of changing business requirements."

The technique searches out the best possible sequence of changes among those available for a specific software system in order to improve its characteristics. It intends to improve the different characteristics such as performance, scalability, maintainability, and security.

"Refactoring is a series of small behaviour preserving changes, each change does little but the sequence of changes can produce considerable restructuring in software system design for the improvement of quality characteristics," he added.

Source: University of Leicester ([news](#) : [web](#))