

## ABSTRACT

### IMPLEMENTATION OF AN EXPERT SYSTEM FOR IDENTIFICATION OF FACIAL ACNE USING THE FORWARD CHAINING METHOD

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The development of digital technology has had a significant impact on various aspects of life, including the healthcare sector. One of the emerging innovations is the implementation of expert systems, which enable healthcare services to become faster, more accurate, and more reliable.

Acne (*Acne vulgaris*) is a common skin condition caused by clogged oil glands or bacterial infection. This condition can range from mild to severe, characterized by pus-filled pimples, oily skin, and a burning or painful sensation. The face is the most frequently affected area. Unfortunately, many people lack awareness of the differences between acne and other similar skin conditions. Therefore, expert systems have been developed to help individuals identify acne before consulting a doctor.

The Forward Chaining method is used in this expert system to analyze user-reported symptoms and provide diagnoses as well as treatment recommendations. This method operates through the following steps: (1) fact initialization, (2) rule matching, (3) rule evaluation, (4) rule execution, (5) addition of new facts, (6) process iteration, and (7) conclusion drawing.

With this approach, expert systems can provide fast and accurate diagnoses, reducing the risk of misdiagnosis and improving individuals' quality of life. Additionally, this system serves as a valuable tool for healthcare professionals in delivering better care to patients with facial acne problems.

**Keywords:** Digital Technology, Expert Systems, Acne, Forward Chaining, Healthcare