SOFTWARE QUALITY

IT IS DEFINED AS THE SET OF CHARACTERISTICS THAT INFLUENCE THE ABILITY OF THE PRODUCT TO SATISFY EXPLICT OR IMPLICT REQUIREMENTS.

QUALITY IS NOT JUST ABOUT THE CODE, BUT ALSO INCLUDES DOWMENTATION, ASSOCIATED DATA, AND PROCEDURES NECESSARY FOR THE SW TO RUN PROPERLY.

STANDARDS SUCH AS ISO 9126 AND ITS REVISION, ISO/IEC 25010, PROVIDE A FRAMEWORK FOR MEASURING AND IMPROVING THE QUALITY OF SW PRODUCTS.

ISO/IEC 25010

THE OBJECTIVES INCLUDES:

- EXCLUDE PURELY FUNCTIONAL PROPERTIES, BUT INCLUDE FUNCTIONAL COMPLIANCE.
- SERVE DIVERSE AUDIENCES, INCLUDING END USERS, DEVELOPERS, SYSTEM ADMINISTRATORS, AND WSTOMERS.

ISO/IEC 25010 DEFINES TWO QUALITY MODELS

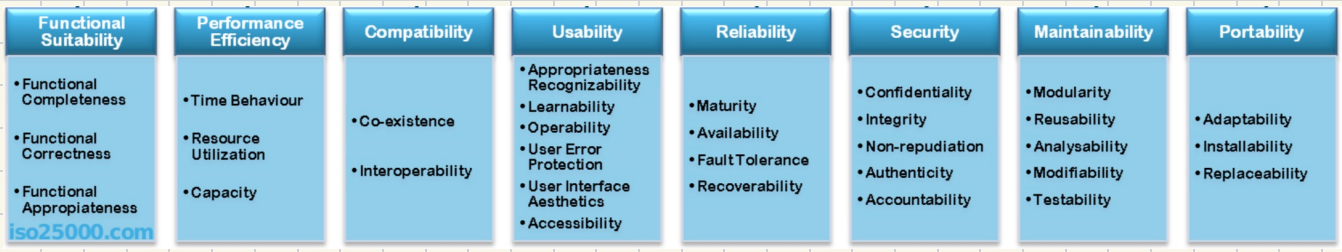
- QUALITY MODEL IN USE: IT FOCUSES ON THE USER EXPERIENCE WHEN USING THE PRODUCT IN A SPECIFIC CONTEXT.

  INCLUDES 5 MAIN FEATURES:

  - EFFECTIVENESS: PRECISION AND COMPLETENESS WITH WHICH THE USER ARCHIEVES HIS OBJECTIVES.
  - EFFIUENCY: RESULTS IN RELATION TO THE EFFORT REQUIRED.
  - SATISFACTION: LEVEL OF USER SATISFACTION USING THE SYSTEM.
  - FREEDOM FROM RISK: ABILITY OF THE PRODUCT TO MITIGATE ECONOMIC, SAFETY, ENVIRONMENTAL OR HEALTH RISKS.
  - CONTEXT COVERAGE: ADAPTABILITY OF THE PRODUCT TO DIFFERENT CONTEXTS OF USE

- PRODUCT QUALITY MODEL: IT DEALS WITH THE STATIC AND DYNAMIC PROPERTIES OF THE SW PRODUCT.

  INCLUDES 8 MAIN FEATURES, EACH DIVIDED INTO SUB-FEATURES:



PRACTICAL APPLICATION:

- HELPS IDENTIFY QUALITY REQUIREMENTS FOR A SOFTWARE PROJECT.
- GUIDES THE VALIDATION OF REQUIREMENTS TO ENSURE THEIR COMPLETENESS.
- DEFINES DESIGN, TESTING AND QUALITY CONTROL OBJECTIVES.
- PROVIDES CRITERIA FOR ACCEPTING PRODUCTS IN CONTRACTS.

PERCEIVED QUALITY IS MEASURED BASED ON THE PRODUCT'S ABILITY TO BE EFFECTIVE, EFFICIENT AND SATISFYING FOR THE USER IN A GIVEN CONTEXT.

METRICS SUCH AS RATE OF ACHIEVEMENT, SECURITY INCIDENTS, AND CONTEXT COVERAGE ARE USED TO EVALUATE THESE CHARACTERISTICS.

THIS MODEL HAS LIMITATIONS:

- QUALITY CHARACTERISTICS ARE NOT ALWAYS PERFECTLY INDIPENDENT OF EACH OTHER.
- THERE IS A LACK OF DIRECT CONNECTION BETWEEN THE QUALITATIVE MODEL AND TECHNIQUES FOR DEVELOPING HIGH-QUALITY SW.

QUALITY COSTS

- COST OF CONFORMITY (COC): ERROR PREVENTION AND QUALITY ASSESSMENT. FOR EXAMPLE INSPECTION, TESTING AND CONTROL ACTIVITIES.
- COST OF NON CONFORMITY (CONC): INTERNAL ERRORS, DISCOVERED BEFORE DELIVERY, OR EXTERNAL ERRORS, DISCOVERED AFTER DELIVERY. FOR EXAMPLE MAINTENANCE COSTS, REPAIRS, RECALLS AND LEGAL LIABILITIES.