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| Abstract |  |
| This thesis has been realized following a design science approach, it therefore aims at first creating innovative concepts which improve the actual human and organizational capabilities, secondly, at evaluating these concepts by providing concrete instantiations. According to this research paradigm, the objectives of this thesis are the following: The first objective of this thesis is to extend the querying ability of the fuzzy classification approach proposed by Schindler. By adding new clauses to the fuzzy Classification Query Language, the user should be given more powerful means for selecting elements within a fuzzy classification. The second objective of this thesis is convert classical value to fuzzy value which base on fuzzy membership function such as S shape membership function, Pi shape membership function and Z shape membership junction. The third objective is, considering the application domain specificities, to extend the original fuzzy queries approach by new concepts which provide additional capabilities to the system and proved that the proposed intelligent fuzzy query is faster than the conventional query and it provides the user the flexibility to query the database using natural language. The fourth and last objective is to also make a comparison between traditional database and fuzzy database by computing the time cost of classical query over classical database, fuzzy query over classical database and fuzzy query over fuzzy database. | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

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| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| Goal 3 | Good Health and Well-Being | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| Goal 7 | Affordable and Clean Energy | Goal 8 | Decent Work and Economic Growth |
| Checkmark PNG, Checkmark Transparent Background - FreeIconsPNGGoal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| Goal 15 | Life on Land | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |