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| **AY -ODD 2024-25** | | | | | | | | | | | | | |
| **GUJARAT TECHNOLOGICAL UNIVERSITY** | | | | | | | | | | | | | |
| **SCHOOL OF ENGINEERING AND TECHNOLOGY** | | | | | | | | | | | | | |
| **PRACTICAL - 7** | | | | | | | | | | | | | |
| **Course Code & Name** | | | **ME01095021- Artificial Intelligence** | | | | | | | | | | |
| **Academic Term:** | | | **AY –ODD 2024-25** | | | | | **Semester** | | | | **I** | |
| **Student Enrollment No:** | | | **241370795004** | | | | | **Batch:** | | | |  | |
| **Student Name:** | | | **Dake Darsh Dhaneshkumar** | | | | | | | | | | |
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| **AIM/Objective:** | | | | | | | | | | | | | |
| 1 | | To make predicate rules for following family relations in prolog: father, mother, grandfather, grandmother, brother, sister, uncle, aunt, nephew and niece based on three predicates: male, female, parent | | | | | | | | | | | |
|  | |  |  |  | |  | |  | |  | | |  |
| **Expected Outcome:** | | | | | | | | | | **CO/PO/PSO** | | | |
| 1 | | Apply reasoning to learn from available knowledge about the real world problems. | | | | | | | | CO3 | | | |
|  | | **Experiment Result and Analysis**  **Resources and Software used:**   1. SWI-Prolog   **Code:**  male(darsh).  male(chirag).  male(keyur).  male(ankit).  male(chintan).  female(dishu).  female(chaitali).  female(devyani).  female(hetvi).  female(kinjal).  female(tejal).  parent(darsh,chintan).  parent(darsh,dishu).  parent(chintan,keyur).  parent(chintan,chaitali).  parent(devyani,chintan).  parent(devyani,dishu).  parent(chirag,keyur).  parent(chirag,chaitali).  parent(kinjal,keyur).  parent(kinjal,priyanhi).  parent(ankit,chirag).  parent(tejal,chirag).  father\_of(X,Y) :- male(Y), parent(X,Y).  mother\_of(X,Y) :- female(Y), parent(X,Y).  grandfather\_of(X,Y) :- male(Y), parent(X,Z), parent(Z,Y).  grandmother\_of(X,Y) :- female(Y), parent(X,Z), parent(Z,Y).  brother\_of(X,Y) :- male(Y), father\_of(Y,Z) , father\_of(X,Z), X\=Y.  sister\_of(X,Y) :- female(Y), father\_of(Y,Z), father\_of(X,Z), X\=Y.  uncle\_of(X,Y) :- male(Y), father\_of(X,Z), brother\_of(Z,Y).  anut\_of(X,Y) :- female(Y), brother\_of(Y,Z), father\_of(X,Z).  neice\_of(X,Y) :- female(Y), father\_of(Y,Z), brother\_of(Z,X).  nephew\_of(X,Y) :- male(Y), father\_of(Y,Z), brother\_of(Z,X).  **Output:** | | | | | | | |  | | |  |
|  | | |  |  | | --- | --- | | **Conclusion** | | | 1 | By defining family relations using predicates like male, female, and parent, the program successfully handles queries for various familial roles such as father, mother, grandfather, and others. The logic ensures that relationships are accurately captured and queried, making the Prolog program a reliable tool for modeling and querying family structures based on the given predicates. | | | | | | | | | | | | |
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| **Evaluation Rubrics** | | | | | **Marks** | | **Inadequate** | | **Good** | | **Excellent** | | |
| **0%** | | **50%** | | **100%** | | |
| 1 | The understanding of the Student regarding the objective of the given practical | | | | **2** | |  | |  | |  | | |
| 2 | Installation of Software or Hardware Setup level | | | | **2** | |  | |  | |  | | |
| 3 | Quality of the Analysis done | | | | **2** | |  | |  | |  | | |
| 4 | Quality of the report including concluding remarks and Findings | | | | **2** | |  | |  | |  | | |
| 5 | Question & Answer related to given practical & timely submission | | | | **2** | |  | |  | |  | | |
|  | | | | | **10** | |  | |  | |  | | |
| **Total Marks Obtained Out of 10** | | | | | | |  | | | | | | |
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|  | | **Date of Completion:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |  | | **Course**  **Coordinator Sign:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | | | | | |