**GTU Department of Computer Engineering**

**CSE 341 – Fall 2022**

**Homework 4 Report**

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1. Expert System

First the knowledge base is created. Some of them facts are given below.

Text

Description automatically generatedText

Description automatically generated

Then the rules are defined as follows.

Text

Description automatically generated

Test Cases:

1. Check whether there is any scheduling conflict.
2. Check which room can be assigned to a given class.
3. Check which room can be assigned to which classes.
4. Check whether a student can be enrolled to a given class.
5. Check which classes a student can be assigned.

|  |  |  |  |
| --- | --- | --- | --- |
| Test ID | Result | Explanation | PASS/FAIL |
| I |  | Both courses 102 and 241 are holding in room z23 at 12 am. So, there is conflict. | **PASS** |
| II |  | 102 course requires a room with minimum capacity of 120. The capacity of z23 is 120 and it is 150 for z06. Since capacity of the z23 and z06 is enough for the 102, this course can be holding one of the two room. | **PASS** |
| III |  | Capacity of the z10 is 40. Both courses 455 and 452 requires a minimum capacity of 40. So those two courses can be hold at z10 | **PASS** |
| IV |  | Student1 can enroll the 102 course, however, student2 cannot enroll. Since student2 is handicapped and the course room z23 has no access for handicapped students. But student2 can enroll 341 course, since it’s held at room z06 and this room has access for handicapped students. | **PASS** |
| V |  | Student2 is handicapped and can only enroll the courses that is hold in a class that has access for handicapped students. Those rooms are z10 and z06. The courses 341 is held at z10 and 455 and 452 are held at z06. | **PASS** |

1. Possible Flights

First the knowledge base is created.

Text

Description automatically generated

Then the rules are defined as follows.

Text

Description automatically generated

Test Cases:

* 1. Different path costs between two cities.
  2. All the different routes from a city to other cities with cost 8
  3. All the different routes from a city to other cities

Diagram

Description automatically generated

Test cases are tested on the above graph

|  |  |  |
| --- | --- | --- |
| Test ID | Result | PASS/FAIL |
| I | Text  Description automatically generated with medium confidence | **PASS** |
| II | A picture containing graphical user interface  Description automatically generated | **PASS** |
| III | Text  Description automatically generated with medium confidence | **PASS** |