Homework 7 part 1: Bereket, Dagmawi, Evan, Ethan

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| Policy 1 | The role Staff\_member\_role will be assigned to each Staff Member in the Registrar’s Office. This role will have INSERT privileges on all tables. |
| Policy 2 | The role Staff\_member\_role will contain the DELETE ANY privilege. |
| Policy 3 | The role Staff\_member\_role will contain the SELECT ANY privilege. |
| Policy 4 | The role Staff\_member\_role will contain the UPDATE ANY privilege. |
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| Policy 5 | A context will be created that will allow a student to query the STUDENTS table but can only see his/her records. Would use a TFRF. *Does students first need SELECT ON STUDENTS privilege?* |
| Policy 6 | A view (instructor\_view) will be created that will return all information from the INSTRUCTORS table except for IDs. The student\_role and instructor\_role will be granted access to this view. Students will be assigned the student\_role. *Does students/instructors first need SELECT ON INSTRUCTORS privilege?* |
| Policy 7 | Student\_role will be granted the SELECT privilege to see information in COURSES table. |
| Policy 8 | A context will be created to allow students to query the ENROLLMENT table, but only their information will be returned. Would create a TFRF. *Does student first need SELECT ON ENROLLMENT privilege?* |
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| Policy 9 | Instructor\_role will be granted SELECT privilege on STUDENTS. |
| Policy 10 | Instructor\_role will be granted access to the instructor\_view (see Policy 6). |
| Policy 11 | A context will be created that allow instructors to query INSTRUCTOR table. Would use TFRF to return all information about the instructor. *Do I need to grant SELECT?* |
| Policy 12 | Instructor\_role will be granted the SELECT privilege to see information in COURSES table |
| Policy 13 | Instructor\_role will be granted SELECT privilege to see information in ENROLLMENT table |
| Policy 14 | A context will be created that allow an instructor to update INSTRUCTORS table. The context would allow the instructor to update his/her own information, except for the ID and ENAME. Would create a CFRF. *Do I need to grant update on INSTRUCTORS??* |
| Policy 15 | A trigger would be created to be called immediately before UPDATE on the ENROLLMENT table. The trigger would check that the instructor had taught the course that is related to the specific grade. *Grant instructor\_role the UPDATE privilege?* |

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| **Grantee** | **Type** | **Privilege/Role** | **Object Schema** | **Object Name** | **Column Name** | **Grantable** | **Grantor** |
| Application administrator | User | SELECT ANY | App\_schema | All tables | All | Yes | SYS |
| Application administrator | User | DELETE ANY | App\_schema | All tables | All | Yes | SYS |
| Application administrator | User | UPDATE ANY | App\_schema | All tables | All | Yes | SYS |
| Application administrator | User | INSERT ANY | App\_schema | All tables | All | Yes | SYS |
| Application administrator | User | CREATE PROCEDURE | App\_schema | ??? | ??? | No | SYS |
| Application administrator | User | CREATE TRIGGER | App\_schema | ??? | ??? | No | SYS |
| Application administrator | User | EXECUTE ON PACKAGE | App\_schema | All tables? | All | No | SYS |
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| Staff\_member\_role | Role | DELETE ANY | App\_schema? | All tables | All | No | App\_administrator |
| Staff\_member\_role | Role | SELECT ANY | App\_schema? | All tables | All | No | App\_administrator |
| Staff\_member\_role | Role | INSERT | App\_schema? | All tables | All | No | App\_administrator |
| Staff\_member\_role | Role | UPDATE ANY | App\_schema? | All tables | All | No | App\_administrator |
| Staff in Registrar’s Office | User | Staff\_member\_role | App\_schema? | All tables | All | No | App\_administrator |
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| Student\_role | Role | SELECT | App\_schema | COURSES | All | No | App\_administrator |
| Student\_role | Role | SELECT | App\_schema | Instructor\_view | Last\_name, first\_name, ename, dept | No | App\_administrator |
| Student | User | Student\_role | App\_schema | COURSES, instructor\_view | ??? | No | App\_administrator |
|  |  |  |  |  |  |  |  |
| Instructor\_role | Role | SELECT | App\_schema | STUDENTS | All | No | App\_administrator |
| Instructor\_role | Role | SELECT | App\_schema | Instructor\_view | Last\_name, first\_name, ename, dept | No | App\_administrator |
| Instructor\_role | Role | SELECT | App\_schema | COURSES | All | No | App\_administrator |
| Instructor\_role | Role | SELECT | App\_schema | ENROLLMENT | All | No | App\_administrator |
| Instructor | User | Instructor\_role | App\_schema | STUDENTS, COURSES, ENROLLMENT, Instructor\_view | ??? | No | App\_administrator |

* Notes: students may need SELECT privilege (not documented in privilege table!) on ENROLLMENT, STUDENTS, and INSTRUCTORS tables. They currently only have the trigger fires (TFRF and CFCF). **Do they need a privilege as well?? If so, modify the student\_role and add the GRANT SELECT privileges on the STUDENTS, ENROLLMENT tables.**
* **Is app\_schema the only schema we need?**
* **What columns should I specify for the student to have access on (when specifying that the student has access to student\_role)? Same question for instructor\_role.**
* **Can we add TFRF/CFRF to a role? (Might do this for Policies 5, 8, 11, 14.)**
* **For Policy 15, do we need to grant instructor\_role the UPDATE privilege?**