TO: Dean Steve “The Bear” Wiltkerbad

FROM: Roger Baumbach II

RE: The Entity Relationship Diagram for the Residence Hall Complaint System

DATE: October 21, 2013

This Memo is a detailed description of the Entity Relationship Diagram (ERD) and its importance to the development life cycle of the Residence Hall Complaint System. Attached to this diagram is an ERD, an ERD is a detailed data model that depicts data in terms of the entities and relationships describing the data. Entities are a class of persons, places, objects, events, or concepts about which we need to capture and store data and a relationship is a natural business association that exists between one or more entities. Note that each piece of the ERD contains associated data values. These values are descriptive properties or characteristics of each entity. Out of each value there is a key value or attribute/group of attributes, that assumes a unique value for each entity instance. This value is sometimes known as a primary key and it is a specific value of that entity. The purpose of the attached model is to show the entities that are relevant in the design of the Proposed Residence Hall Complaint System. The purpose of this model is to understand what entities the system tracks, the values the system tracks for each entity, and the number of times one entity interacts with another.

In this model there are a total of three entities: The Residence Hall Staff, The Grievances Filed, and the Students/Visitors whom have committed a grievance. The justification for tracking these three entities lies in the purpose of the system itself. The system is developed to track and help monitor grievances reported within the school. The purpose of this system is solely based around the entity Grievances. For the system to properly preform its duty, a Residence Hall Staff member is required to write up any grievances and submit them to the system. The student in question is then put through the school’s judicial process where in which the system performs the extent of its purpose. The System is only present to track the grievances and allow for others to utilize and monitor its progress.

For each of the entities in this system, there is a set of attributes that are tracked by the system. In addition to the attributes of each entity, there is a primary key. The primary key is required in order for the system to function. The Residence Hall Staff members are required to have an ID that helps to differentiate between people that share similar attributes such as names. Each grievance is required to have an ID as well. This is important, because like that of an employee, multiple Grievances could share similar attribute values and it is essential for the system to have a way of tracking each individual Grievance. Lastly, it is a common practice for most universities to assign an ID to the student at a school to track them as an individual and not mix identities with other students who may share similar names and/or attributes. This system needs to track this as well to effectively preform its functions. Following is a graphical representation of each entity and its attributes.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Residence Hall Staff | Employee ID | Employee Name | Residence Hall | Local Address | State | Zip Code | Email Address | Phone Number |
| Grievances | Grievance ID | Name of Student | Date | Time | Place | Employee Reporting | Nature of Grievance | Further Detail |
| Student or Visitor | Student ID | Student Name | Residence Hall | Local Address | State | Zip Code | Email Address | Phone Number |

For each entity in the ERD, there is a relationship between it and another entity within the diagram. In the attached ERD, there are a total of two relationships. The first is between Residence Hall Staff and Grievances, and the second is Grievances and Students. Residence Hall Staff and Grievances are related because the Residence hall staff writes up the Grievances and Grievances are written up by the Residence Hall Staff. On the other side of Grievances, Students are written up in a Grievance and the Grievance is written up about the Student.

In the terms of each relationship between entities, there is a term called Cardinality that refers to the relationship between the two entities. The Cardinality of a Relationship is the minimum and maximum number of occurrences of one entity that may be related to a single occurrence of the other entity. The relationships are as follows: a one to one relationship, one to many, and many to many relationships. These relationships tell how they interact in a numerical relationship. Residence hall staff interacts with grievances on a many to one relationship. Each staff member may write many grievances but each grievance has only one staff member. The same goes for Students to Grievances. Each Grievance may only have one student that is written up, but a student can be written up in many different grievances.

