

Google Cloud Specifications

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1 API Definitions

1.1 List of Functions

- AddNewLabs()
- AddNewStudents()
- ModifyLabEntity()
- ModifyStudentEntity()
- QueryAllLabsEntities()
- QueryAllStudentEntities()
- DeleteLabEntity()
- DeleteStudentEntity()
- LoginRoom()
- LogoutRoom()
- CountRoomPopulation()
- ClearRoomLog()

1.2 API Descriptions

1.2.1 AddNewLabs()

```
def AddNewLabs(index, room_number, class_list = []):
```

This function adds to the “Lab” entity. The first argument is the index in the database, which acts as the key in case it needs to be accessed later. The second argument is the room number of a room that has an a lock on it, i.e. BE301, BE340A, E2-599. The third argument is a Python list of classes that have access to the room i.e. CMPE123A, CMPE121, CMPE167L.

1.2.2 AddNewStudents()

```
def AddNewStudents(index, name, cruzID, class_list = []):
```

This function adds to the “Student” entity. The first argument is the index in the database, which acts as the key in case it needs to be accessed later. The second argument is the name of the student, with first and last name separated by a space. The third argument is the cruzID of the student without the ucsd.edu following it, i.e. sazwu. The fourth argument is a Python list of classes the student is in i.e. CMPE167, AMS147.

1.2.3 ModifyLabEntity()

```
def ModifyLabEntity(lab_index, room_number, class_list = []):
```

This function modifies an existing “Lab” entity. The entries in the entity must all be specified in the arguments. The first argument is the index in the database. The second argument is the room number in a room with an accessible lock. The third argument is a Python list of classes that have access to the room.

1.2.4 ModifyStudentEntity()

```
def ModifyStudentEntity(student_index, name, cruzID, class_list = []):
```

This function modifies an existing “Student” entity. The entries in the entity must all be specified in the arguments. The first argument is the index in the database. The second argument is the first and last name of the student separated by a space. The third argument is just the cruzID of the student, and the fourth argument is a Python list of classes the student is in.

1.2.5 QueryAllLabEntities()

```
def QueryAllLabsEntities():
```

This function simply prints all “Lab” entities and the information in each.

1.2.6 QueryAllStudentEntities()

```
def QueryAllStudentEntities():
```

This function simply prints all “Student” entities and the information in each.

1.2.7 DeleteLabEntity()

```
def DeleteLabEntity(lab_index):
```

This function deletes an entire “Lab” entity specified by the index passed in as the first argument.

1.2.8 DeleteStudentEntity()

```
def DeleteStudentEntity(lab_index):
```

This function deletes an entire “Student” entity specified by the index passed in as the first argument.

1.2.9 LoginRoom()

```
def LoginRoom(room_number, cruzID):
```

This function is called when a user enters a room. The first argument is the room number of which the user enters and the second argument is the cruzID of the user that enters the room. The function logs the enter time and stores it in the cloud. The leave time and cumulative time spent in the room is null.

1.2.10 LogoutRoom()

```
def LogoutRoom(room_number, cruzID):
```

This function is called when a user leaves a room. The first argument is the room number of which the user leaves and the second argument is the cruzID of the user that leaves the room. The function logs the leave time and stores it in the cloud. The cumulative time is calculated based on the leave time and the last time the student entered the room.

1.2.11 CountRoomPopulation()

```
def CountRoomPopulation(room_number):
```

This function counts the number of people in the room specified by the first argument. It counts the number of people by counting the number of indexes in the room with a null value in the exit time.

1.2.12 ClearRoomLog()

```
def ClearRoomLog(room_number):
```

This function clears the entity and log of the room number specified in the first argument. This function could probably be used at the end of the day or end of the quarter.

2 Database Details

2.1 Entity Format

| Lab Entity | | |
|-------------|--------|--------------------------------------|
| ID | Room # | Classes with Access |
| name=index0 | E2-399 | ["AMS147", "CMPS101"] |
| name=index1 | BE340A | ["CMPE123A", "CMPE123B", "CMPE129B"] |

| Student Entity | | | |
|----------------|--------------|----------|-----------------------|
| ID | Name | cruzID | Classes |
| name=index0 | Samuel Wu | sazwu | ["AMS147", "CMPS12B"] |
| name=index1 | Bowen Brooks | bojbrook | ["CMPE123A"] |

| BE340 Log Entity | | | | |
|------------------|----------|----------------|----------------|------------|
| ID | cruzID | Enter Time | Exit Time | Cumulative |
| name=sazwu0 | sazwu | 02-07 17:26:55 | 02-07 17:27:02 | 0:00:07 |
| name=bojbrook0 | bojbrook | 02-07 17:26:55 | 02-08 11:30:22 | 18:03:26 |
| name=sazwu1 | sazwu | 02-08 11:27:19 | 02-08 11:27:57 | 0:00:44 |
| name=hello0 | hello | 02-08 11:31:02 | null | null |