1. CODE

1. Month job notify bill – **monthlyInformCustomers.js**

    Usage – **node monthlyInformCustomers.js**

1. Will iterate over all customers.
    1.1. Will iterate over all plates belong to customer.
    1.2. Check existing records of plate In Records table.
        1.2.1. Count how many hit in each sensor.
        1.2.2. On each sensor that with more than 1 hit, query sensor cost.
        1.2.3. Sum all cost on particular plate.
    1.3. Sum cost on all plates.
    1.4. Post total cost to customer billing URL.

2. **Sensors records update – sensorRecordPost.js**

    Usage (Import module) – **sensorRecordPost.sensortPost(plate, sensorId)**
    Sensor will post to records table by passing:
1. Plate.
2. SensorId.

2. MODELING AND DESCITIOS

1. Customers table:

- Partition key: CustomerId - unique ID (Numeric ID)
- Attributes:
    - Name(String): Customer name.
    - Email(String): Customer email.
    - BillingUrl(String): url to post the bill to.
    - LicensePlates(List[Strings]): list of plates.

2. Sensors table:

- Partition key: SensorId - ID (Numeric ID)
- Attributes:
    - Cost (Number): Cost of passing the sensor.
    - Lng (Float): longitude position.
    - Lat (Float): latitude position.

3. Records table:

- Partition key: ID can't be used here, I chose to use hash on unique string of each record – sensor + time +plate.
- Attributes:

- o Occurred (Time stamp) – time of registering record.
- o Plate (String) – Plate.
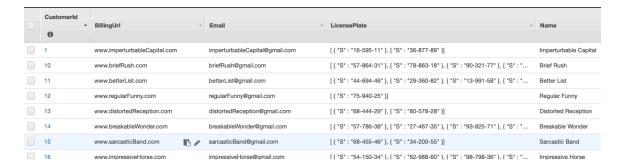- o SensorId (Number) – Sensor id of record.

3. DYNAMO DB

SCRIPT DATA GENERATOR

Usage:

```
) node generateData.js -h
Options:
  --version     Show version number                      [boolean]
  --create, -c  Create tables - Customers, Sensors, Records   [boolean]
  --fill, -f    Fill tables - Customers, Sensors, Records     [boolean]
  --help, -h    Show help                                [boolean]
```

GUI – SCREEN SHOTS

Name	Status	Partition key
Customers	Active	CustomerId (String)
Records	Active	RecordId (String)
Sensors	Active	SensorId (String)

CUSTOMERS

	CustomerId ⓘ	BillingUrl	Email	LicensePlate	Name
	1	www.imperturbableCapital.com	imperturbableCapital@gmail.com	[{ "S" : "16-595-11" }, { "S" : "36-877-89" }]	Imperturbable Capital
	10	www.briefRush.com	briefRush@gmail.com	[{ "S" : "57-864-31" }, { "S" : "78-863-18" }, { "S" : "90-321-77" }, { "S" : "...	Brief Rush
	11	www.betterList.com	betterList@gmail.com	[{ "S" : "44-694-46" }, { "S" : "29-360-82" }, { "S" : "13-991-58" }, { "S" : "...	Better List
	12	www.regularFunny.com	regularFunny@gmail.com	[{ "S" : "75-940-25" }]	Regular Funny
	13	www.distortedReception.com	distortedReception@gmail.com	[{ "S" : "68-444-29" }, { "S" : "80-578-28" }]	Distorted Reception
	14	www.breakableWonder.com	breakableWonder@gmail.com	[{ "S" : "57-786-38" }, { "S" : "27-467-35" }, { "S" : "93-825-71" }, { "S" : "...	Breakable Wonder
	15	www.sarcasticBand.com	sarcasticBand@gmail.com	[{ "S" : "68-455-46" }, { "S" : "34-200-55" }]	Sarcastic Band
	16	www.impressiveHorse.com	impressiveHorse@gmail.com	[{ "S" : "54-150-34" }, { "S" : "62-988-60" }, { "S" : "98-798-36" }, { "S" : "...	Impressive Horse

RECORDS

	RecordId ⓘ	LicensePlate	Occured	SensorId
☐	0b1e208e3e4d78cff27cc4e74d82cb773b981f20	43-256-27	1590934839909	6
☐	137c85cae00913ccdab8b50e54d4fe3b0570ddd6	12-548-39	1590934839914	5
☐	15e4405eb58ce1962764ba0a52bc1fc2b4687ae5	73-157-40	1590934839901	5
☐	192e46450e52ca0065dbf538c154e8e98df03adb	76-913-96	1590934839913	7
☐	3546561c7ac4cf6fab3eda439e1a792fd85ebe2c	76-913-96	1590934839899	4
☐	41634b2dae87b73b40bd599895804948a1faaadd	44-298-70	1590934839909	3

SENSORS

	SensorId ⓘ	Cost	Lat	Lng
☐	1	1	271946.98	269494.84
☐	2	8	568478.38	548745.46
☐	3	2	615458.41	858927.84
☐	4	2	104702.33	254254.46
☐	5	9	664493.26	794491.20
☐	6	6	617170.49	145652.3