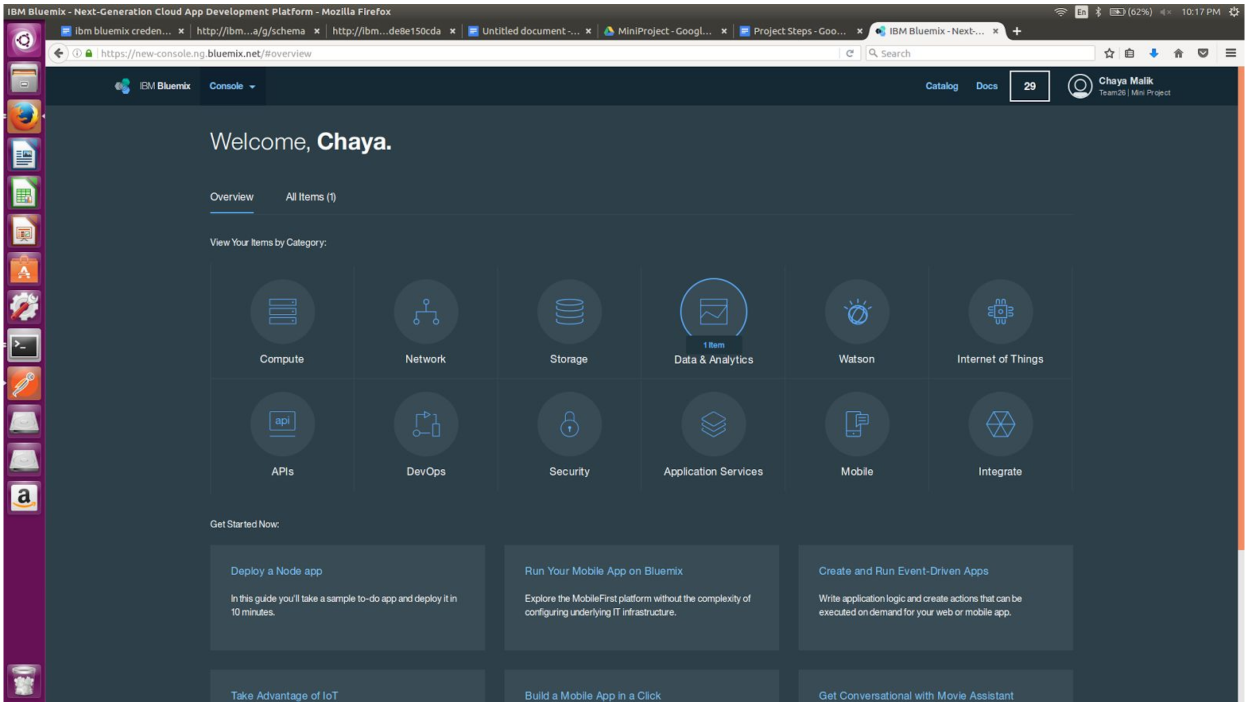
Steps for working with IBM Graph service

Step 1: Login into bluemix account



Welcome, **Chaya.**

View Your Items by Category:

Get Started Now:

Deploy a Node app

In this guide you'll take a sample to-do app and deploy it in 10 minutes.

Run Your Mobile App on Bluemix

Explore the MobileFirst platform without the complexity of configuring underlying IT infrastructure.

Create and Run Event-Driven Apps

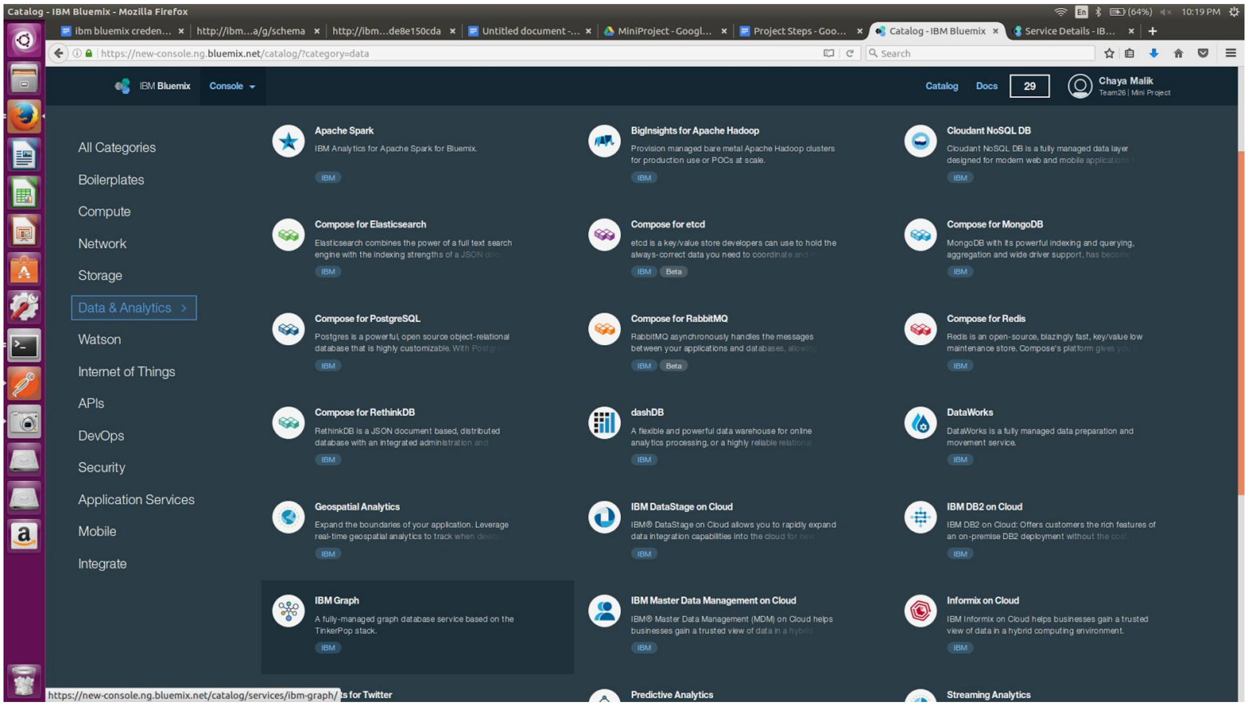
Write application logic and create actions that can be executed on demand for your web or mobile app.

Take Advantage of IoT

Build a Mobile App in a Click

Get Conversational with Movie Assistant

Step 2: Navigate to catalog-data and analysis and select ibm graph



Apache Spark
IBM Analytics for Apache Spark for Bluemix.
IBM

BigInsights for Apache Hadoop
Provision managed bare metal Apache Hadoop clusters for production use or POCs at scale.
IBM

Cloudant NoSQL DB
Cloudant NoSQL DB is a fully managed data layer designed for modern web and mobile applications
IBM

Compose for Elasticsearch
Elasticsearch combines the power of a full text search engine with the indexing strengths of a JSON doc
IBM

Compose for etcd
etcd is a key/value store developers can use to hold the always-correct data you need to coordinate and
IBM Beta

Compose for MongoDB
MongoDB with its powerful indexing and querying, aggregation and wide driver support, has become
IBM

Compose for PostgreSQL
Postgres is a powerful, open source object-relational database that is highly customizable. With Postgre
IBM

Compose for RabbitMQ
RabbitMQ asynchronously handles the messages between your applications and databases, allowing
IBM Beta

Compose for Redis
Redis is an open-source, blazingly fast, key/value low maintenance store. Compose's platform gives you
IBM

Compose for RethinkDB
RethinkDB is a JSON document based, distributed database with an integrated administration and
IBM

dashDB
A flexible and powerful data warehouse for online analytics processing, or a highly reliable relational
IBM

DataWorks
DataWorks is a fully managed data preparation and movement service.
IBM

Geospatial Analytics
Expand the boundaries of your application. Leverage real-time geospatial analytics to track when device
IBM

IBM DataStage on Cloud
IBM® DataStage on Cloud allows you to rapidly expand data integration capabilities into the cloud for new
IBM

IBM DB2 on Cloud
IBM DB2 on Cloud: Offers customers the rich features of an on-premise DB2 deployment without the cost
IBM

IBM Graph
A fully-managed graph database service based on the TinkerPop stack.
IBM

IBM Master Data Management on Cloud
IBM® Master Data Management (MDM) on Cloud helps businesses gain a trusted view of data in a hybrid
IBM

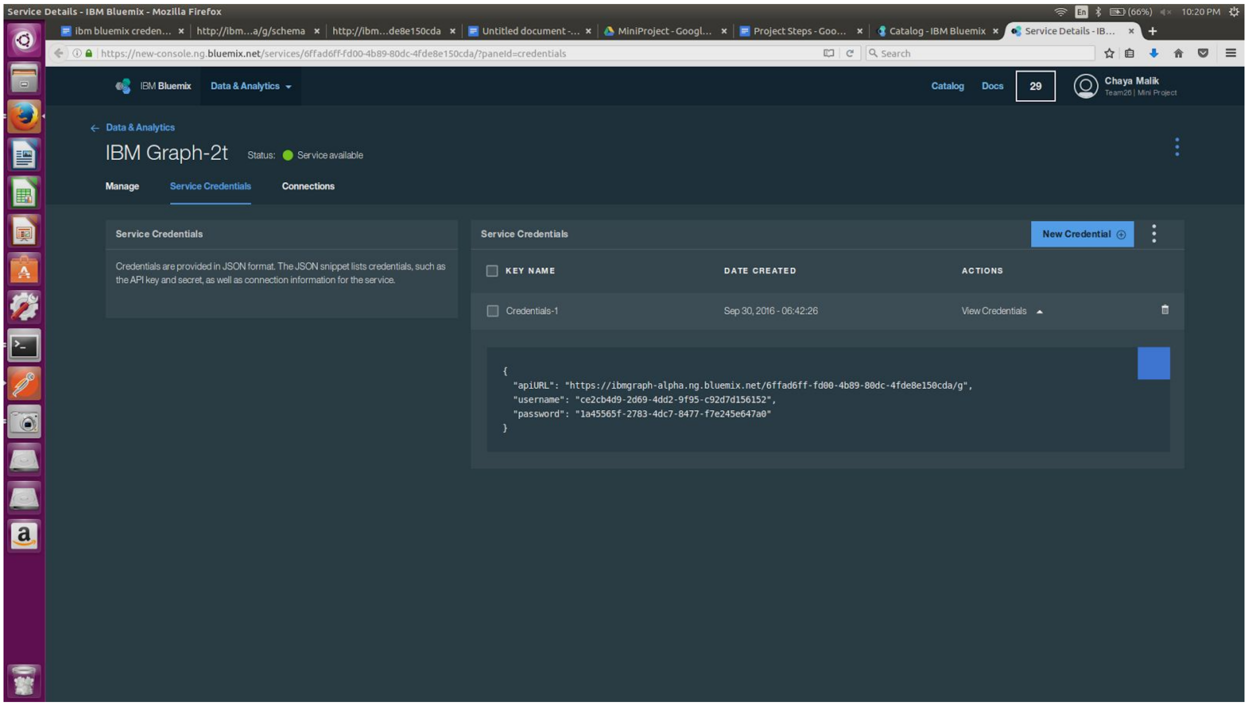
Informix on Cloud
IBM Informix on Cloud helps businesses gain a trusted view of data in a hybrid computing environment.
IBM

ts for Twitter

Predictive Analytics

Streaming Analytics

Step 3:Create instance and copy the credentials



https://new-console.ng.bluemix.net/services/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/?paneId=credentials

Data & Analytics

IBM Graph-2t   Status: ● Service available

Service Credentials

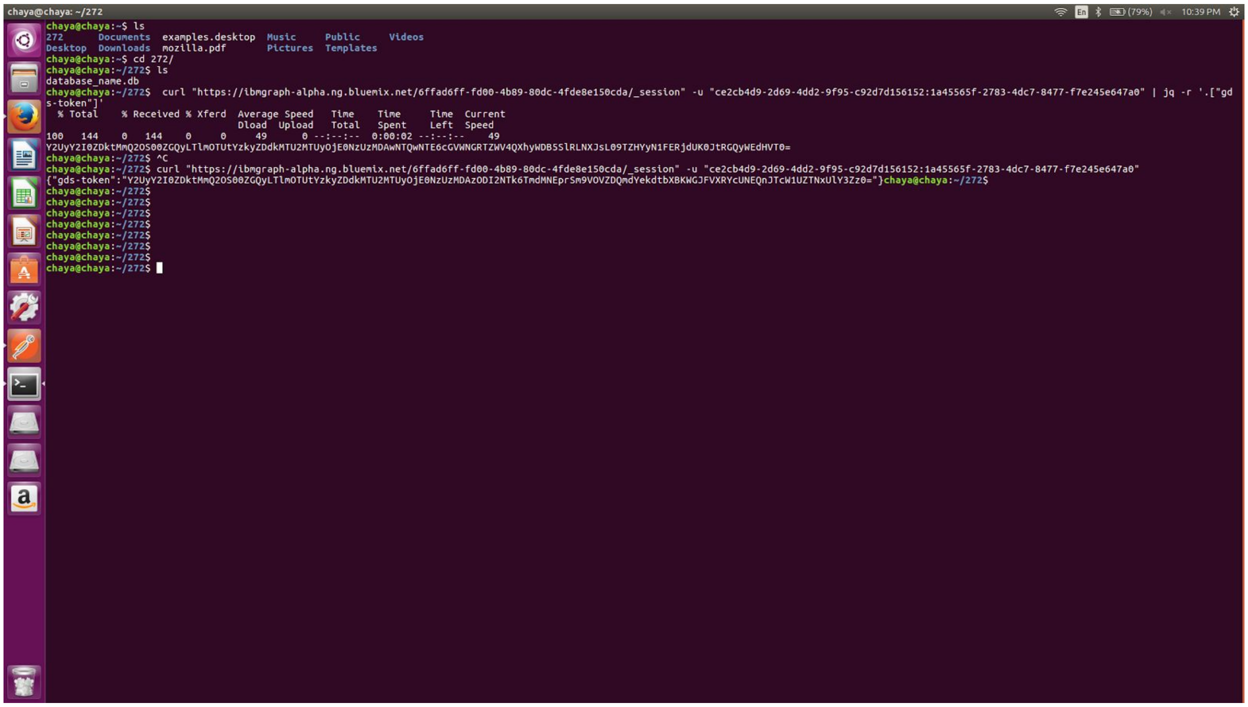
Credentials are provided in JSON format. The JSON snippet lists credentials, such as the API key and secret, as well as connection information for the service.

Service Credentials

□ KEY NAME	DATE CREATED	ACTIONS
□ Credentials-1	Sep 30, 2016 - 06:42:26	View Credentials ▲

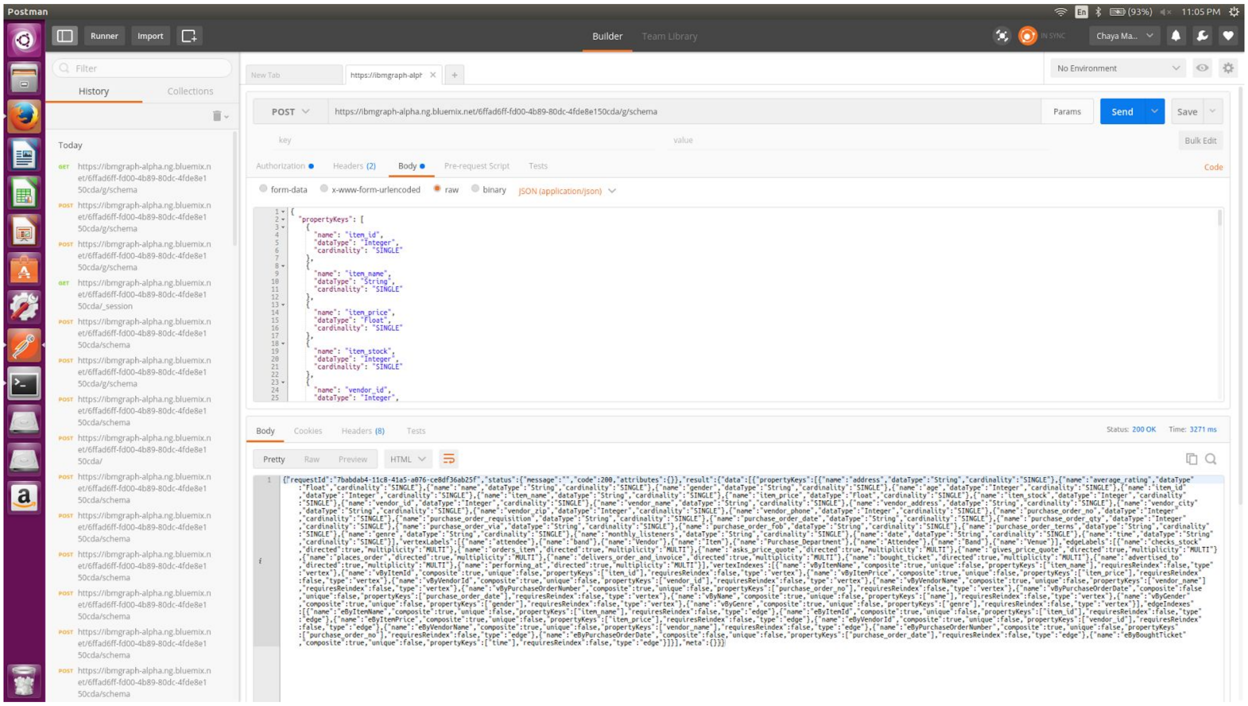
```
{
  "apiURL": "https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g",
  "username": "ce2cb4d9-2d69-4dd2-9f95-c92d7d156152",
  "password": "1a45565f-2783-4dc7-8477-f7e245e647a0"
}
```

Step 4: Generate Token using provided and copied credentials



```
chaya@chaya:~$ ls
272       Documents  examples.desktop  Music     Public     Videos
Desktop   Downloads  mozilla.pdf       Pictures  Templates
chaya@chaya:~$ cd 272/
chaya@chaya:~/272$ ls
database_name.db
chaya@chaya:~/272$  curl "https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/_session" -u "ce2cb4d9-2d69-4dd2-9f95-c92d7d156152:1a45565f-2783-4dc7-8477-f7e245e647a0" | jq -r '.["gd
s-token"]'
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   144    0   144    0     0     49      0 --:--:--  0:00:02 --:--:--    49
Y2UyY2I0ZDktMmQ2OS00ZGQyLTlmOTUtYzkyZDdkMTU2MTUyOjE0NzUzMDAwNTQwNTE6cGVWNGRTZWV4QXhyWDB5SlRLNXJsL09TZHYyN1FERjdUK0JtRGQyWEdHVT0=
chaya@chaya:~/272$ ^C
chaya@chaya:~/272$ curl "https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/_session" -u "ce2cb4d9-2d69-4dd2-9f95-c92d7d156152:1a45565f-2783-4dc7-8477-f7e245e647a0"
{"gds-token":"Y2UyY2I0ZDktMmQ2OS00ZGQyLTlmOTUtYzkyZDdkMTU2MTUyOjE0NzUzMDAzODI2NTk6TmdMNEprSm9VOVZDQmdYekdtbXBKWGJFVXRYcUNEQnJTcW1UZTNxUlY3Zz0="}chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$
chaya@chaya:~/272$ 
```

Step 5: Define the graph schema:


Postman
En
(93%)
11:05 PM
Runner
Import
Builder
Team Library
IN SYNC
Chaya Ma...
Filter
History
Collections
Today
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/_session
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
New Tab
https://ibmgraph-alph
No Environment
Params
Send
Save
key
value
Bulk Edit
Authorization
Headers (2)
Body
Pre-request Script
Tests
Code
○ form-data
○ x-www-form-urlencoded
● raw
○ binary
JSON (application/json)
Body
Cookies
Headers (8)
Tests
Pretty
Raw
Preview
HTML

POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema

```
{
  "propertyKeys": [
    {
      "name": "item_id",
      "dataType": "Integer",
      "cardinality": "SINGLE"
    },
    {
      "name": "item_name",
      "dataType": "String",
      "cardinality": "SINGLE"
    },
    {
      "name": "item_price",
      "dataType": "Float",
      "cardinality": "SINGLE"
    },
    {
      "name": "item_stock",
      "dataType": "Integer",
      "cardinality": "SINGLE"
    },
    {
      "name": "vendor_id",
      "dataType": "Integer",
```

Status: 200 OK Time: 3271 ms

```
{"requestId":"7babdab4-11c8-41a5-a076-ce8df36ab25f","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"propertyKeys":[{"name":"address","dataType":"String","cardinality":"SINGLE"},{"name":"average_rating","dataType"
  :"Float","cardinality":"SINGLE"},{"name":"name","dataType":"String","cardinality":"SINGLE"},{"name":"gender","dataType":"String","cardinality":"SINGLE"},{"name":"age","dataType":"Integer","cardinality":"SINGLE"},{"name":"item_id"
  ,"dataType":"Integer","cardinality":"SINGLE"},{"name":"item_name","dataType":"String","cardinality":"SINGLE"},{"name":"item_price","dataType":"Float","cardinality":"SINGLE"},{"name":"item_stock","dataType":"Integer","cardinality"
  :"SINGLE"},{"name":"vendor_id","dataType":"Integer","cardinality":"SINGLE"},{"name":"vendor_name","dataType":"String","cardinality":"SINGLE"},{"name":"vendor_address","dataType":"String","cardinality":"SINGLE"},{"name":"vendor_city"
  ,"dataType":"String","cardinality":"SINGLE"},{"name":"vendor_zip","dataType":"Integer","cardinality":"SINGLE"},{"name":"vendor_phone","dataType":"Integer","cardinality":"SINGLE"},{"name":"purchase_order_no","dataType":"Integer"
  ,"cardinality":"SINGLE"},{"name":"purchase_order_requisition","dataType":"String","cardinality":"SINGLE"},{"name":"purchase_order_date","dataType":"String","cardinality":"SINGLE"},{"name":"purchase_order_qty","dataType":"Integer"
  ,"cardinality":"SINGLE"},{"name":"purchase_order_via","dataType":"String","cardinality":"SINGLE"},{"name":"purchase_order_fob","dataType":"String","cardinality":"SINGLE"},{"name":"purchase_order_terms","dataType":"String","cardinality"
  :"SINGLE"},{"name":"genre","dataType":"String","cardinality":"SINGLE"},{"name":"monthly_listeners","dataType":"String","cardinality":"SINGLE"},{"name":"date","dataType":"String","cardinality":"SINGLE"},{"name":"time","dataType":"String"
  ,"cardinality":"SINGLE"}],"vertexLabels":[{"name":"attendee"},{"name":"band"},{"name":"Vendor"},{"name":"Item"},{"name":"Purchase_Department"},{"name":"Attendee"},{"name":"Band"},{"name":"Venue"}],"edgeLabels":[{"name":"checks_stock"
  ,"directed":true,"multiplicity":"MULTI"},{"name":"orders_item","directed":true,"multiplicity":"MULTI"},{"name":"asks_price_quote","directed":true,"multiplicity":"MULTI"},{"name":"gives_price_quote","directed":true,"multiplicity":"MULTI"}
  ,{"name":"places_order","directed":true,"multiplicity":"MULTI"},{"name":"delivers_order_and_invoice","directed":true,"multiplicity":"MULTI"},{"name":"bought_ticket","directed":true,"multiplicity":"MULTI"},{"name":"advertised_to"
  ,"directed":true,"multiplicity":"MULTI"},{"name":"performing_at","directed":true,"multiplicity":"MULTI"}],"vertexIndexes":[{"name":"vByItemName","composite":true,"unique":false,"propertyKeys":["item_name"],"requiresReindex":false,"type"
  :"vertex"},{"name":"vByItemId","composite":true,"unique":false,"propertyKeys":["item_id"],"requiresReindex":false,"type":"vertex"},{"name":"vByItemPrice","composite":true,"unique":false,"propertyKeys":["item_price"],"requiresReindex"
  :false,"type":"vertex"},{"name":"vByVendorId","composite":true,"unique":false,"propertyKeys":["vendor_id"],"requiresReindex":false,"type":"vertex"},{"name":"vByVendorName","composite":true,"unique":false,"propertyKeys":["vendor_name"]
  ,"requiresReindex":false,"type":"vertex"},{"name":"vByPurchaseOrderNumber","composite":true,"unique":false,"propertyKeys":["purchase_order_no"],"requiresReindex":false,"type":"vertex"},{"name":"vByPurchaseOrderDate","composite":false
  ,"unique":false,"propertyKeys":["purchase_order_date"],"requiresReindex":false,"type":"vertex"},{"name":"vByName","composite":true,"unique":false,"propertyKeys":["name"],"requiresReindex":false,"type":"vertex"},{"name":"vByGender"
  ,"composite":true,"unique":false,"propertyKeys":["gender"],"requiresReindex":false,"type":"vertex"},{"name":"vByGenre","composite":true,"unique":false,"propertyKeys":["genre"],"requiresReindex":false,"type":"vertex"}],"edgeIndexes"
  :[{"name":"eByItemName","composite":true,"unique":false,"propertyKeys":["item_name"],"requiresReindex":false,"type":"edge"},{"name":"eByItemId","composite":true,"unique":false,"propertyKeys":["item_id"],"requiresReindex":false,"type"
  :"edge"},{"name":"eByItemPrice","composite":true,"unique":false,"propertyKeys":["item_price"],"requiresReindex":false,"type":"edge"},{"name":"eByVendorId","composite":true,"unique":false,"propertyKeys":["vendor_id"],"requiresReindex"
  :false,"type":"edge"},{"name":"eByVendorName","composite":true,"unique":false,"propertyKeys":["vendor_name"],"requiresReindex":false,"type":"edge"},{"name":"eByPurchaseOrderNumber","composite":true,"unique":false,"propertyKeys"
  :["purchase_order_no"],"requiresReindex":false,"type":"edge"},{"name":"eByPurchaseOrderDate","composite":false,"unique":false,"propertyKeys":["purchase_order_date"],"requiresReindex":false,"type":"edge"},{"name":"eByBoughtTicket"
  ,"composite":true,"unique":false,"propertyKeys":["time"],"requiresReindex":false,"type":"edge"}]}],"meta":{}}}
```

This was the schema used:

```
{
  "propertyKeys": [
        {
        "name": "item_id",
        "dataType": "Integer",
        "cardinality": "SINGLE"
        },
        {
        "name": "item_name",
        "dataType": "String",
        "cardinality": "SINGLE"
        },
        {
        "name": "item_price",
        "dataType": "Float",
        "cardinality": "SINGLE"
        },
        {
        "name": "item_stock",
        "dataType": "Integer",
        "cardinality": "SINGLE"
        },
{
"name": "vendor_id",
"dataType": "Integer",
"cardinality": "SINGLE"
},
{
"name": "vendor_name",
"dataType": "String",
"cardinality": "SINGLE"
},
{
"name": "vendor_address",
"dataType": "String",
"cardinality": "SINGLE"
},
{
"name": "vendor_city",
"dataType": "String",
"cardinality": "SINGLE"
},
{
"name": "vendor_zip",
"dataType": "Integer",
"cardinality": "SINGLE"
},
{
"name": "vendor_phone",
"dataType": "Integer",
"cardinality": "SINGLE"
},
{
"name": "purchase_order_no",
"dataType": "Integer",
"cardinality": "SINGLE"
},
{
"name": "purchase_order_requisition",
"dataType": "String",
"cardinality": "SINGLE"
},
{
"name": "purchase_order_date",
"dataType": "String",
        "cardinality": "SINGLE"
        },
        {
        "name": "purchase_order_qty",
        "dataType": "Integer",
        "cardinality": "SINGLE"
        },
        {
        "name": "purchase_order_via",
        "dataType": "String",
        "cardinality": "SINGLE"
        },
        {
        "name": "purchase_order_fob",
        "dataType": "String",
        "cardinality": "SINGLE"
        },
        {
        "name": "purchase_order_terms",
        "dataType": "String",
        "cardinality": "SINGLE"
        }
    ],
    "vertexLabels": [
        {
        "name": "Vendor"
        },
        {
        "name": "Item"
        },
        {
        "name": "Purchase_Department"
        }
    ],
    "edgeLabels": [
        {
        "name": "checks_stock",
        "multiplicity": "MULTI"
        },
        {
        "name": "orders_item",
        "multiplicity": "MULTI"
        },
 {
        "name": "asks_price_quote",
        "multiplicity": "MULTI"
        },
        {
        "name": "gives_price_quote",
        "multiplicity": "MULTI"
        },
         {
        "name": "places_order",
        "multiplicity": "MULTI"
        },
         {
        "name": "delivers_order_and_invoice",
        "multiplicity": "MULTI"
        }
    ],
    "vertexIndexes": [
        {
        "name": "vByItemName",
        "propertyKeys": [
        "item_name"
        ],
        "composite": true,
        "unique": false
        },
        {
        "name": "vByItemId",
        "propertyKeys": [
        "item_id"
        ],
        "composite": true,
        "unique": false
        },
        {
        "name": "vByItemPrice",
        "propertyKeys": [
        "item_price"
        ],
        "composite": true,
        "unique": false
        },
        {
```

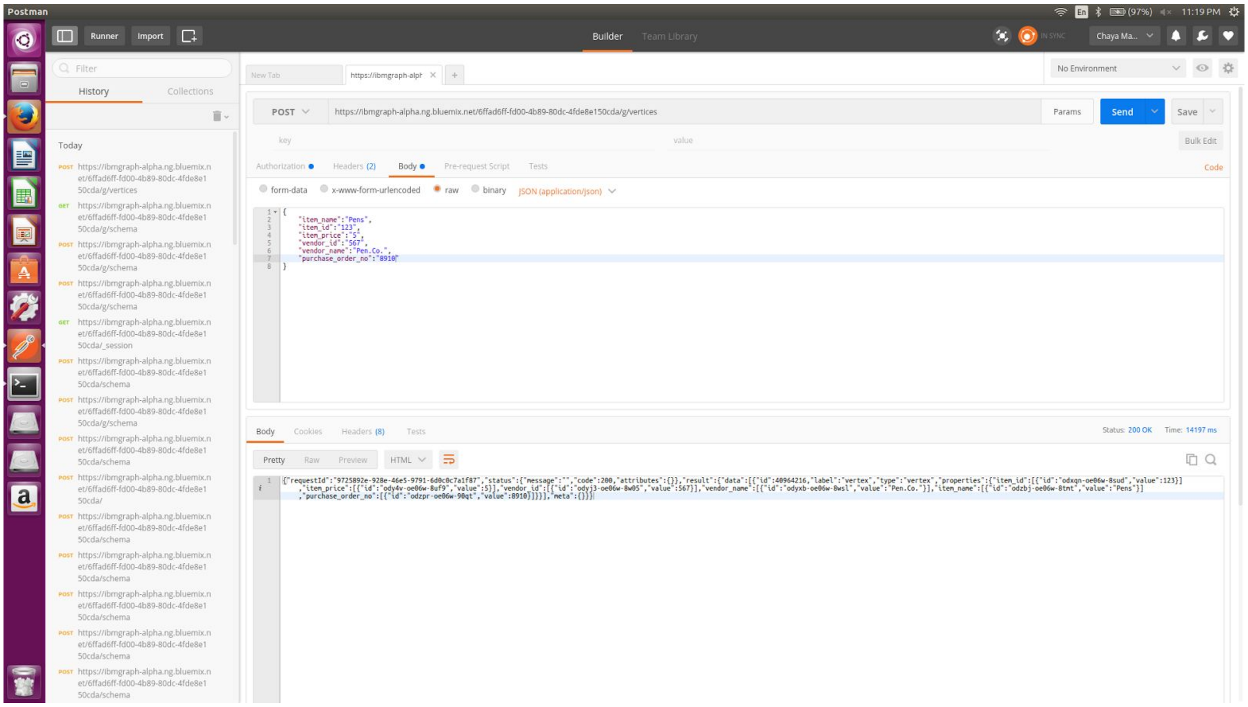
```
        "name": "vByVendorId",
        "propertyKeys": [
        "vendor_id"
        ],
        "composite": true,
        "unique": false
        },
        {
        "name": "vByVendorName",
        "propertyKeys": [
        "vendor_name"
        ],
        "composite": true,
        "unique": false
        },

        {
        "name": "vByPurchaseOrderNumber",
        "propertyKeys": [
        "purchase_order_no"
        ],
        "composite": true,
        "unique": false
        },
        {
        "name": "vByPurchaseOrderDate",
        "propertyKeys": [
        "purchase_order_date"
        ],
        "composite": false,
        "unique": false
        }
],
"edgeIndexes": [
        {
        "name": "eByItemName",
        "propertyKeys": [
        "item_name"
        ],
        "composite": true,
        "unique": false
        },
 {
```

```
"name": "eByItemId",
"propertyKeys": [
"item_id"
],
"composite": true,
"unique": false
},
{
"name": "eByItemPrice",
"propertyKeys": [
"item_price"
],
"composite": true,
"unique": false
},
{
"name": "eByVendorId",
"propertyKeys": [
"vendor_id"
],
"composite": true,
"unique": false
},
{
"name": "eByVendorName",
"propertyKeys": [
"vendor_name"
],
"composite": true,
"unique": false
},

{
"name": "eByPurchaseOrderNumber",
"propertyKeys": [
"purchase_order_no"
],
"composite": true,
"unique": false
},
{
"name": "eByPurchaseOrderDate",
"propertyKeys": [
            "purchase_order_date"
            ],
            "composite": false,
            "unique": false
            }
 ]
}
```

Step 6: Create a vertex
(i) Vertex 1:



POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices

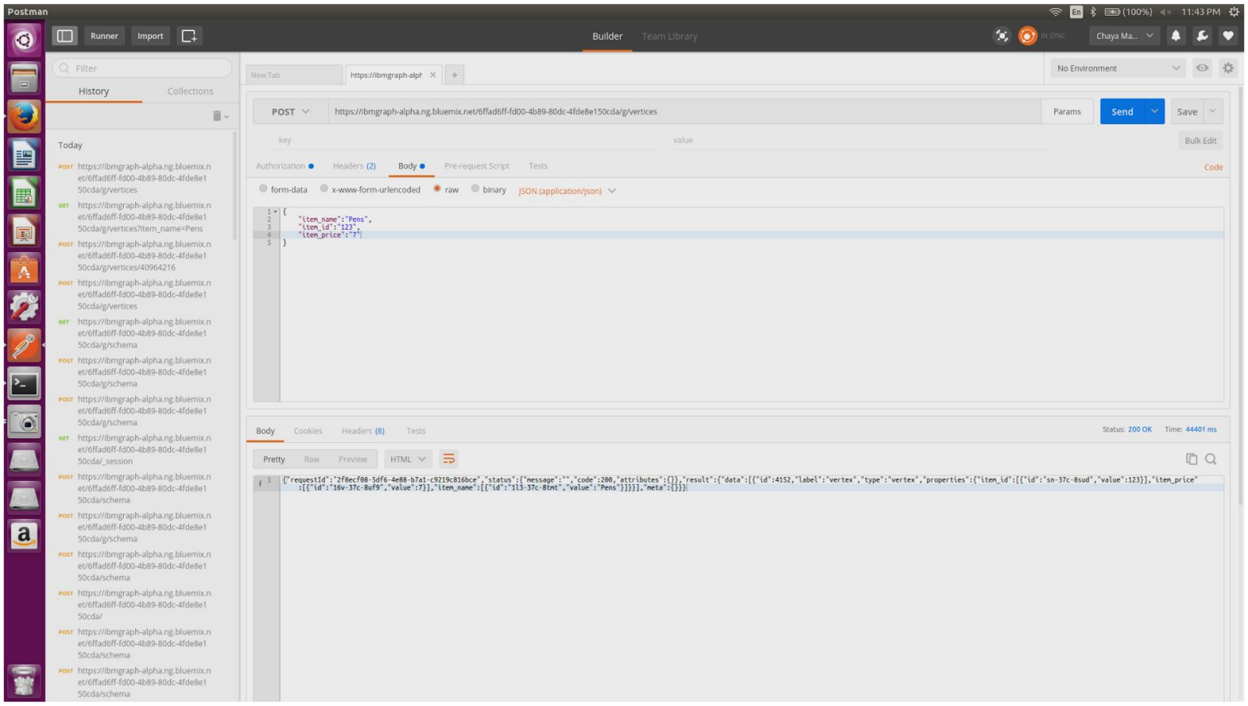
Body: raw JSON (application/json)

```
{
    "item_name":"Pens",
    "item_id":"123",
    "item_price":"5",
    "vendor_id":"567",
    "vendor_name":"Pen.Co.",
    "purchase_order_no":"8910"
}
```

Status: 200 OK Time: 14197 ms

```
{"requestId":"9725892e-928e-46e5-9791-6d0c0c7a1f87","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":40964216,"label":"vertex","type":"vertex","properties":{"item_id":[{"id":"odxqn-oe06w-8sud","value":123}]
    ,"item_price":[{"id":"ody4v-oe06w-8uf9","value":5}],"vendor_id":[{"id":"odyj3-oe06w-8w05","value":567}],"vendor_name":[{"id":"odyxb-oe06w-8wsl","value":"Pen.Co."}],"item_name":[{"id":"odzbj-oe06w-8tmt","value":"Pens"}]
    ,"purchase_order_no":[{"id":"odzpr-oe06w-90qt","value":8910}]}}],"meta":{}}}
```

(ii) Vertex 2:



POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices

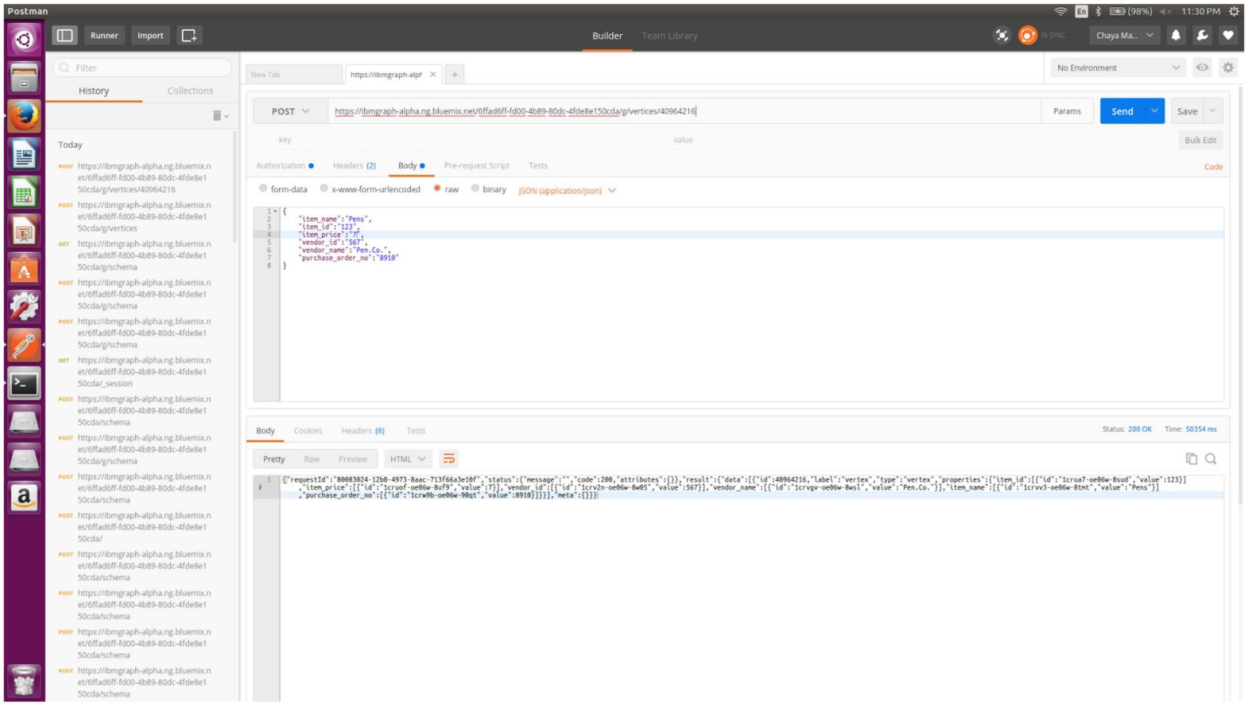
Body: raw, JSON (application/json)

```
{
    "item_name":"Pens",
    "item_id":"123",
    "item_price":"7"
}
```

Status: 200 OK Time: 44401 ms

```
{"requestId":"2f8ecf08-5df6-4e88-b7a1-c9219c816bce","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":4152,"label":"vertex","type":"vertex","properties":{"item_id":[{"id":"sn-37c-8sud","value":123}],"item_price"
    :[{"id":"16v-37c-8uf9","value":7}],"item_name":[{"id":"1l3-37c-8tmt","value":"Pens"}]}}],"meta":{}}}
```

Step 7:Update a vertex:



POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216

Body: raw, JSON (application/json)

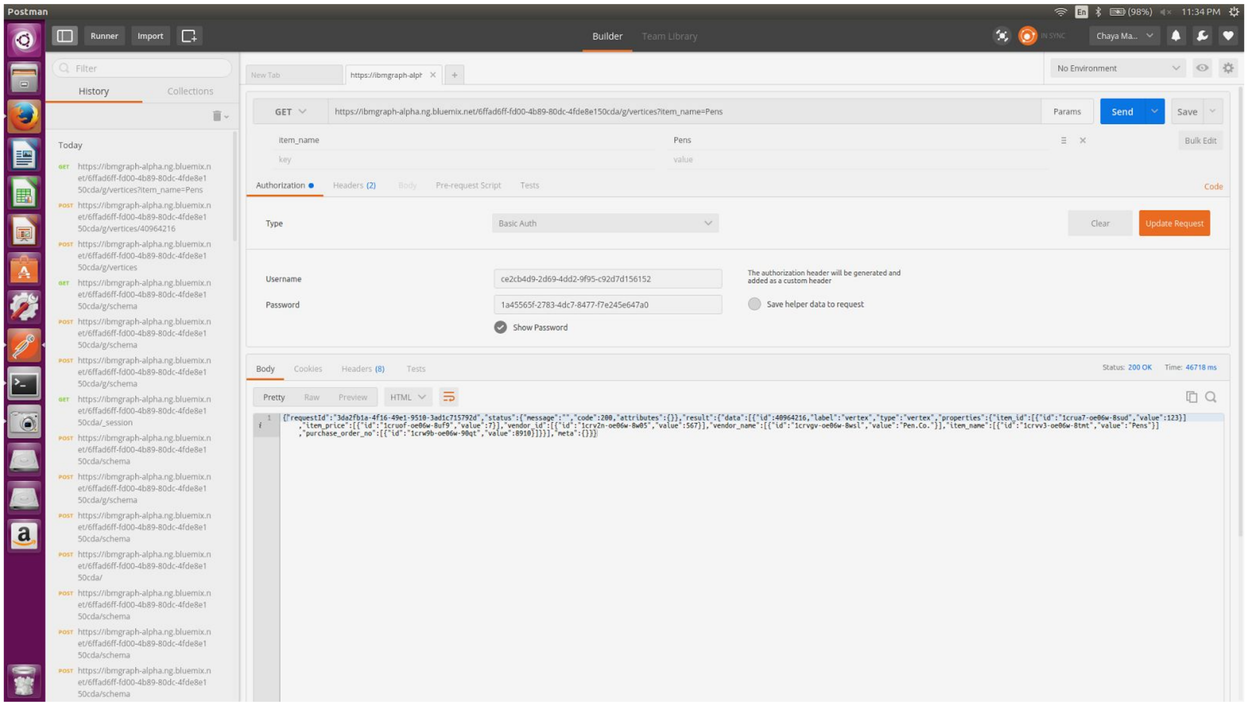
```
{
    "item_name":"Pens",
    "item_id":"123",
    "item_price":"7",
    "vendor_id":"567",
    "vendor_name":"Pen.Co.",
    "purchase_order_no":"8910"
}
```

Status: 200 OK Time: 50354 ms

```
{"requestId":"80083024-12b0-4973-8aac-713f66a3e10f","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":40964216,"label":"vertex","type":"vertex","properties":{"item_id":[{"id":"1crua7-oe06w-8sud","value":123}]
    ,"item_price":[{"id":"1cruof-oe06w-8uf9","value":7}],"vendor_id":[{"id":"1crv2n-oe06w-8w05","value":567}],"vendor_name":[{"id":"1crvgv-oe06w-8wsl","value":"Pen.Co."}],"item_name":[{"id":"1crvv3-oe06w-8tmt","value":"Pens"}]
    ,"purchase_order_no":[{"id":"1crw9b-oe06w-90qt","value":8910}]}}],"meta":{}}}
```

(Vertex updated: price change from 5 to 7, also note that the id remains the same)

Step 8:Get a vertex by indexed property



Postman

Runner Import

Builder Team Library

Filter

History Collections

Today

GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices?item_name=Pens
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/_session
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/schema

No Environment

GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices?item_name=Pens

key	value
item_name	Pens

Authorization Headers (2) Body Pre-request Script Tests

Type: Basic Auth

Username: ce2cb4d9-2d69-4dd2-9f95-c92d7d156152

Password: 1a45565f-2783-4dc7-8477-f7e245e647a0

☑ Show Password

The authorization header will be generated and added as a custom header

○ Save helper data to request

Clear Update Request

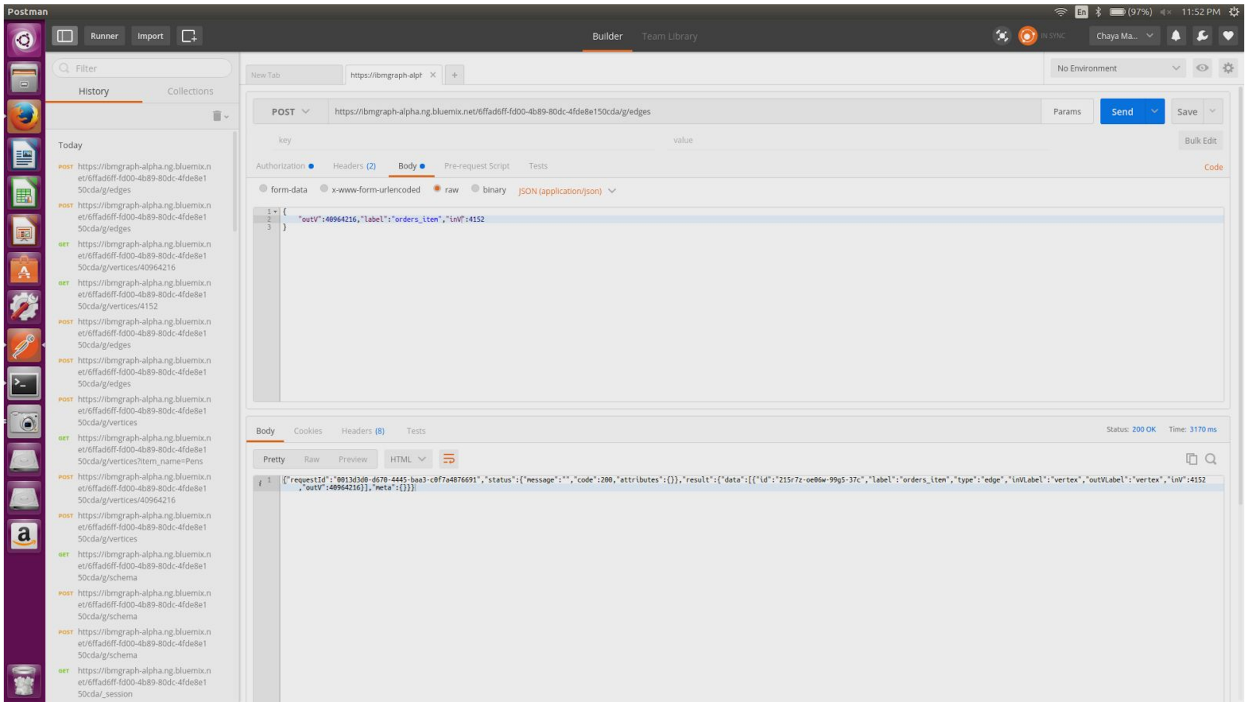
Body Cookies Headers (8) Tests

Status: 200 OK Time: 46718 ms

Pretty Raw Preview HTML

```
{"requestId":"3da2fb1a-4f16-49e1-9510-3ad1c715792d","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":40964216,"label":"vertex","type":"vertex","properties":{"item_id":[{"id":"1crua7-oe06w-8sud","value":123}]
,"item_price":[{"id":"1cruof-oe06w-8uf9","value":7}],"vendor_id":[{"id":"1crv2n-oe06w-8w05","value":567}],"vendor_name":[{"id":"1crvgv-oe06w-8wsl","value":"Pen.Co."}],"item_name":[{"id":"1crvv3-oe06w-8tmt","value":"Pens"}]
,"purchase_order_no":[{"id":"1crw9b-oe06w-90qt","value":8910}]}}],"meta":{}}}
```

Step 9:Create an edge



Postman

Runner Import

Builder Team Library

Filter

History Collections

Today

POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/4152
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices?item_name=Pens
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/schema
GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/_session

No Environment

POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges

Authorization Headers (2) Body Pre-request Script Tests

○ form-data ○ x-www-form-urlencoded ● raw ○ binary JSON (application/json)

```
{
    "outV":40964216,"label":"orders_item","inV":4152
}
```

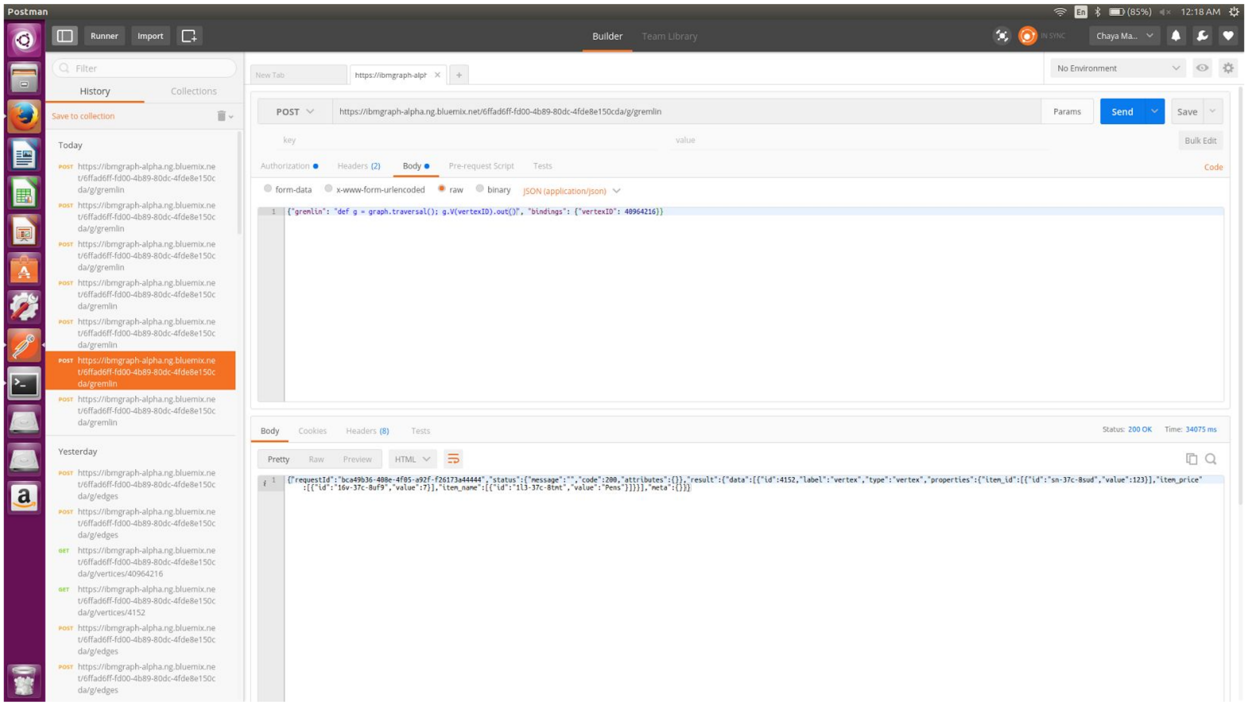
Body Cookies Headers (8) Tests

Status: 200 OK Time: 3170 ms

Pretty Raw Preview HTML

```
{"requestId":"0013d3d0-d670-4445-baa3-c0f7a4876691","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":"215r7z-oe06w-99g5-37c","label":"orders_item","type":"edge","inVLabel":"vertex","outVLabel":"vertex","inV":4152
,"outV":40964216}],"meta":{}}}
```

Step 10: Run a gremlin traversal



Today

- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin

Yesterday

- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
- GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216
- GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/4152
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges

POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin

○ form-data ○ x-www-form-urlencoded ● raw ○ binary JSON (application/json)

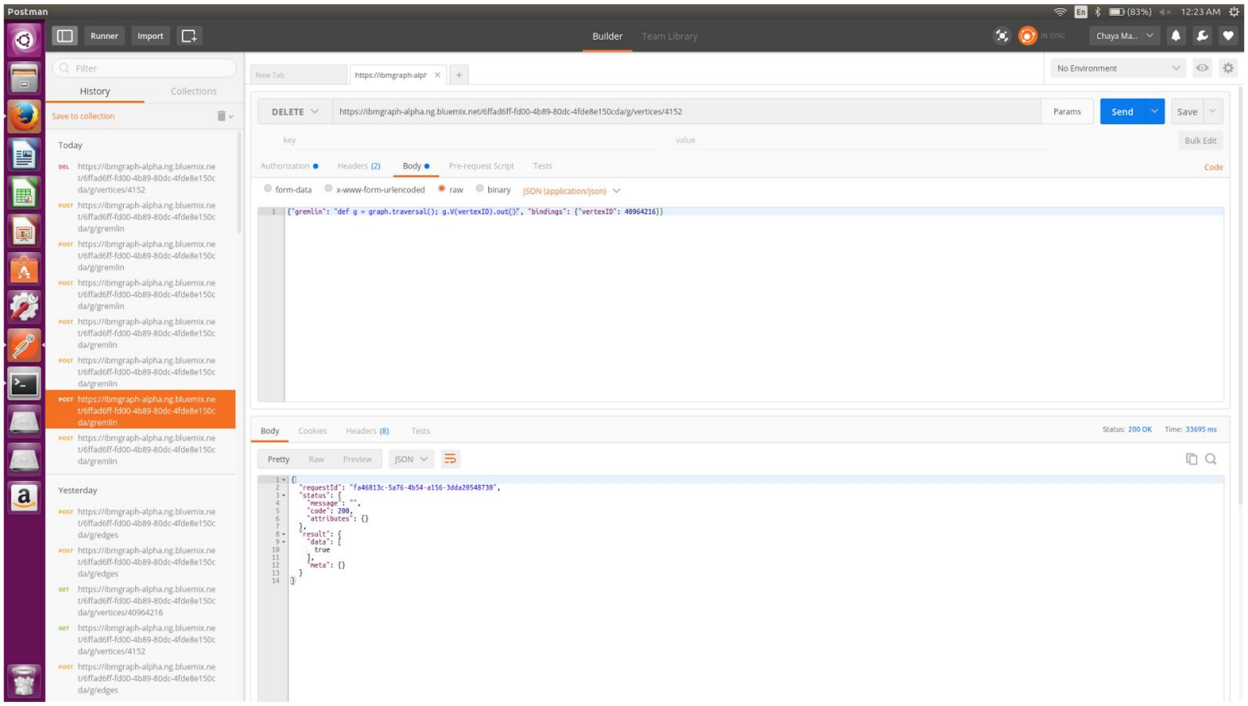
```
{"gremlin": "def g = graph.traversal(); g.V(vertexID).out()", "bindings": {"vertexID": 40964216}}
```

Body Cookies Headers (8) Tests

Status: 200 OK Time: 34075 ms

```
{"requestId":"bca49b36-408e-4f05-a92f-f26173a44444","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":4152,"label":"vertex","type":"vertex","properties":{"item_id":[{"id":"sn-37c-8sud","value":123}],"item_price"
   :[{"id":"16v-37c-8uf9","value":7}],"item_name":[{"id":"1l3-37c-8tmt","value":"Pens"}]}}],"meta":{}}}
```

Step 11: Delete a vertex:



Today

- DEL https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/4152
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/gremlin

Yesterday

- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges
- GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/40964216
- GET https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/4152
- POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/edges

DELETE https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/vertices/4152

○ form-data ○ x-www-form-urlencoded ● raw ○ binary JSON (application/json)

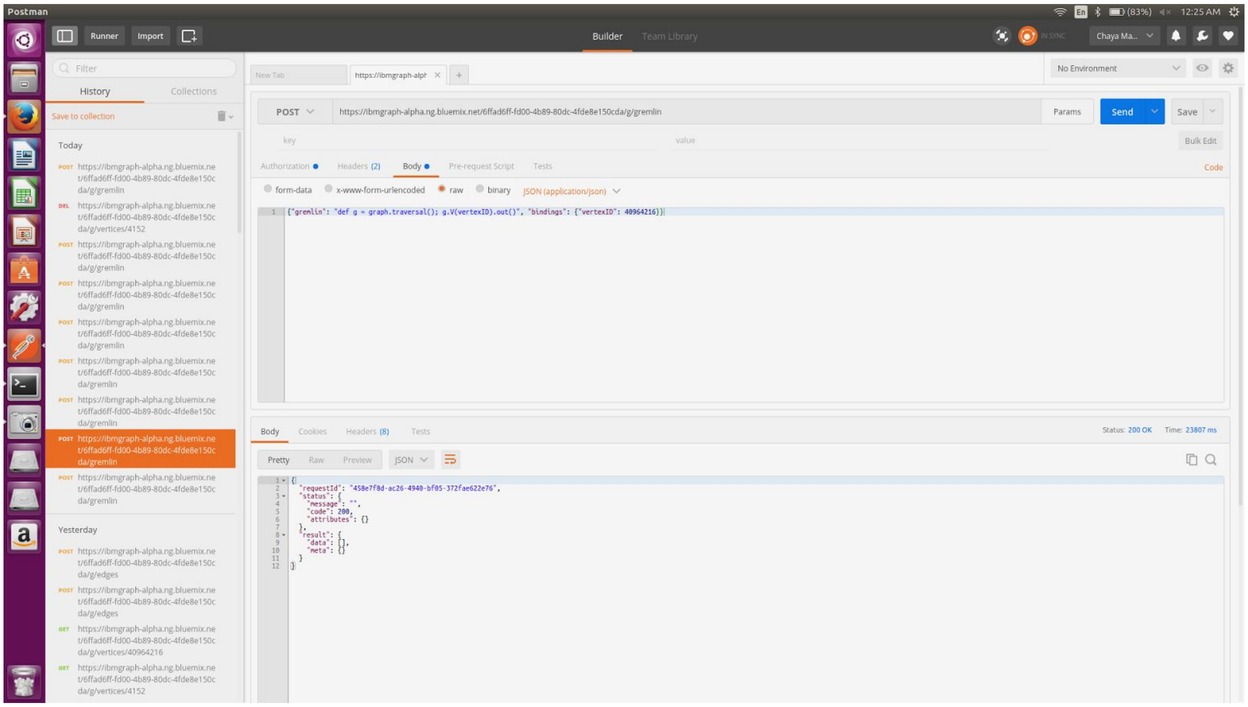
```
{"gremlin": "def g = graph.traversal(); g.V(vertexID).out()", "bindings": {"vertexID": 40964216}}
```

Body Cookies Headers (8) Tests

Status: 200 OK Time: 33695 ms

```
{
  "requestId": "fa46813c-5a76-4b54-a156-3dda20548730",
  "status": {
    "message": "",
    "code": 200,
    "attributes": {}
  },
  "result": {
    "data": [
      true
    ],
    "meta": {}
  }
}
```

Step 12: Traversal after deleting a vertex:



POST https://ibmgraph-alpha.ng.bluemix.net/6ffad6ff-fd00-4b89-80dc-4fde8e150cda/g/gremlin

Body: raw, JSON (application/json)

```
{"gremlin": "def g = graph.traversal(); g.V(vertexID).out()", "bindings": {"vertexID": 40964216}}
```

Status: 200 OK Time: 23807 ms

```
{
  "requestId": "458e7f8d-ac26-4940-bf05-372fae622e76",
  "status": {
    "message": "",
    "code": 200,
    "attributes": {}
  },
  "result": {
    "data": [],
    "meta": {}
  }
}
```

As expected after deleting a vertex the data is empty and there can be no traversal.

Using IBM Bluemix, requires an understanding of the underlying concept of what are graph databases. The API reference provides a lot of information of the designing the schema,. Information on property keys, edges, vertices,indexes is available which tells us how to design and work with graph databases. The interface is not easy to use for a first time user. But the information provided in the documentation is a great help. From analysis point of view, graph databases are more helpful than the traditional relational databases. The tool helps you to understand how nodes are related and the relationships between them.