Python Assessment

1. Write a binary search function which searches for an element in a list. Your output should return the index of element if it is present otherwise raise an exception 'Element not found'

2. Write a program to Sort a List of Tuples in Increasing Order by the Last Element in Each Tuple. The program should be dynamic enough with the input list of tuples.

3. Given a new lexicographical order of alphabets, sort the list of strings according to the new order.
   Example:
   New lexicographical order - ['r' , 'c', 't' , 'a']
   Input list of strings - ['car', 'rat', 'cat']
   Output sorted list - ['rat', 'car', 'cat']

4. Given pairs of employees who have worked together in a project,
   a. find the total number of group of employees who are connected to each other
   b. given a pair of employees, find if they are connected to each other

   Example:
   Input:
   Pradnya Anisha
   Austin Pradnya
   Austin Melburne
   Vishal Akash
   Rahul Pavan

   Output:
   a. 3. The three groups are (Pradnya, Anisha, Austin, Melburne) and (Vishal, Akash) and (Pavan, Rahul)
   b. (Pradnya, Melburne) - Yes
      (Pavan, Vishal) - No

5. Read the following json content and output the arn of the s3 bucket

```
{
 "Records": [
  {
    "eventVersion": "2.0",
    "eventTime": "1970-01-01T00:00:00.000Z",
```

```
      "requestParameters": {
       "sourceIPAddress": "127.0.0.1"
      },
      "s3": {
       "configurationId": "testConfigRule",
       "object": {
        "eTag": "0123456789abcdef0123456789abcdef",
        "sequencer": "0A1B2C3D4E5F678901",
        "key": "HappyFace.jpg",
        "size": 1024
       },
       "bucket": {
        "arn": "arn:aws:s3:::mybucket",
        "name": "sourcebucket",
        "ownerIdentity": {
         "principalId": "EXAMPLE"
        }
       },
       "s3SchemaVersion": "1.0"
      },
      "responseElements": {
       "x-amz-id-2":
"EXAMPLE123/5678abcdefghijklambdaisawesome/mnopqrstuvwxyzABCDEFGH",
       "x-amz-request-id": "EXAMPLE123456789"
      },
      "awsRegion": "us-east-1",
      "eventName": "ObjectCreated:Put",
      "userIdentity": {
       "principalId": "EXAMPLE"
      },
      "eventSource": "aws:s3"
    }
  ]
}
```