**LAB ASSIGNMENT-5**

**DATE: 04/03/2024**

**Q1. Write a script in pymongo to create a collection and insert 5 random documents with attributes: (i)Name, (ii)Age, (iii)Gender, (iv)Department**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
documents=[  
 {"Name": "Alex", "Age": 30, "Gender": "Male", "Department": "CSE"},  
 {"Name": "Alice", "Age": 25, "Gender": "Female", "Department": "ECE"},  
 {"Name": "Bob", "Age": 35, "Gender": "Male", "Department": "Civil"},  
 {"Name": "Mini", "Age": 40, "Gender": "Female", "Department": "Mechanical"},  
 {"Name": "David", "Age": 50, "Gender": "Male", "Department": "Biomedical"}  
]  
status=collection.insert\_many(documents)  
print(status)**

**Output:**

**{**

"\_id" **:** ObjectId**(**"6603ef201fb25e69bcbf3b70"**),**

"Name" **:** "Alex"**,**

"Age" **:** NumberInt**(**30**),**

"Gender" **:** "Male"**,**

"Department" **:** "CSE"

**}**

**{**

"\_id" **:** ObjectId**(**"6603ef201fb25e69bcbf3b71"**),**

"Name" **:** "Alice"**,**

"Age" **:** NumberInt**(**25**),**

"Gender" **:** "Female"**,**

"Department" **:** "ECE"

**}**

**{**

"\_id" **:** ObjectId**(**"6603ef201fb25e69bcbf3b72"**),**

"Name" **:** "Bob"**,**

"Age" **:** NumberInt**(**35**),**

"Gender" **:** "Male"**,**

"Department" **:** "Civil"

**}**

**{**

"\_id" **:** ObjectId**(**"6603ef201fb25e69bcbf3b73"**),**

"Name" **:** "Mini"**,**

"Age" **:** NumberInt**(**40**),**

"Gender" **:** "Female"**,**

"Department" **:** "Mechanical"

**}**

**{**

"\_id" **:** ObjectId**(**"6603ef201fb25e69bcbf3b74"**),**

"Name" **:** "David"**,**

"Age" **:** NumberInt**(**50**),**

"Gender" **:** "Male"**,**

"Department" **:** "Biomedical"

**}**

**Q2. Display the name of the document “Alex”.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
query = {"Name": "Alex"}  
result = collection.find\_one(query)  
if result:  
 print(result)  
else:  
 print("Document not found")**

**Output:**

**{'\_id': ObjectId('6603f5af612082058d09794f'), 'Name': 'Alex', 'Age': 30, 'Gender': 'Male', 'Department': 'CSE'}**

**Process finished with exit code 0**

**Q3. Display the middle character of the name “Alex”.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
pipeline = [  
 {"$match": {"Name": "Alex"}},  
 {"$project": {  
 "middle\_character": {"$substr": ["$Name", {"$floor": {"$divide": [{"$strLenCP": "$Name"}, 2]}}, 1]}  
 }}  
]  
result = list(collection.aggregate(pipeline))  
if result:  
 middle\_character = result[0]['middle\_character']  
 print("Middle character of 'Alex' is:", middle\_character)  
else:  
 print("No document found with name 'Alex'")**

**Output:**

**Middle character of 'Alex' is: e**

**Process finished with exit code 0**

**Q4. Display only the age attribute of the name “Alex”.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
query = {"Name": "Alex"}  
projection = {"\_id": 0, "Age": 1}  
result = collection.find\_one(query, projection)  
if result:  
 print("Age of Alex:", result['Age'])  
else:  
 print("No document found with name 'Alex'")**

**Output:**

**Age of Alex: 30**

**Process finished with exit code 0**

**Q5. Display the total count of documents inside the collection.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
total\_count = collection.count\_documents({})  
print("Total count of documents in the collection:", total\_count)**

**Output:**

**Total count of documents in the collection: 5**

**Process finished with exit code 0**

**Q6. Display the average age of all the documents.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
pipeline = [  
 {"$group": {"\_id": None, "average\_age": {"$avg": "$Age"}}}  
]  
result = list(collection.aggregate(pipeline))  
if result:  
 average\_age = result[0]['average\_age']  
 print("Average age of all documents:", average\_age)  
else:  
 print("No documents found in the collection")**

**Output:**

**Average age of all documents: 36.0**

**Process finished with exit code 0**

**Q7. Display the documents whose department is CSE.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
query = {"Department": "CSE"}  
result = collection.find(query)  
print("Documents with department CSE:")  
for document in result:  
 print(document)**

**Output:**

**Documents with department CSE:**

**{'\_id': ObjectId('6603f5af612082058d09794f'), 'Name': 'Alex', 'Age': 30, 'Gender': 'Male', 'Department': 'CSE'}**

**Process finished with exit code 0**

**Q8. Display the sum of all the age.**

**Ans:**

**from pymongo import MongoClient  
client = MongoClient("mongodb://localhost:27017")  
db=client["adamas"]  
collection=db["random\_data"]  
pipeline = [  
 {"$group": {"\_id": None, "total\_age": {"$sum": "$Age"}}}  
]  
result = list(collection.aggregate(pipeline))  
if result:  
 total\_age = result[0]['total\_age']  
 print("Sum of all ages:", total\_age)  
else:  
 print("No documents found in the collection")**

**Output:**

**Sum of all ages: 180**

**Process finished with exit code 0**