

Arpit Singh

19BCG10069

Appointy – Task 1

Technical Task

(Internship)

Steps:

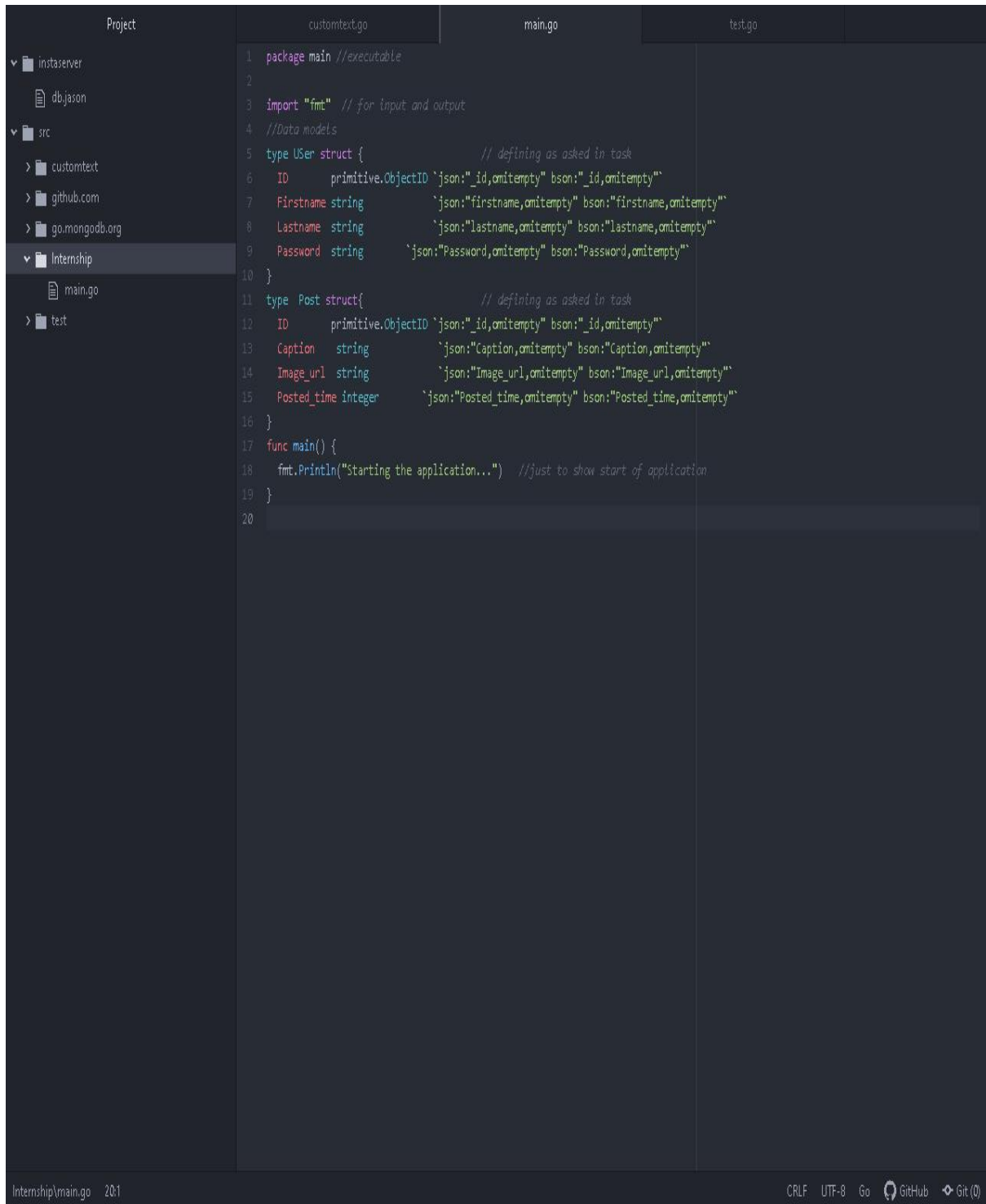
1. Installing Golang and Setting up the Environment
 - a. Install(Setup for windows) golang from Golang.org
 - b. Setup the System (Environment) variable as per the desired directory
 - i. Use commands: go env; Check GoRoot and GoPath specifically.
 - c. For Example: To set workstation as a folder in Desktop set env variable as: *C:\Users\ArpitSG\Desktop\Go-Workspace*.
2. Installing MongoDB and Setting up the Environment
 - a. Install(Setup for windows) MongoDB from MongoDB.com(community server)
 - b. Setup the System (Environment) variable as per the desired directory
 - c. For Example: *C:\Program Files\MongoDB\Server\5.0\bin*.
3. Setup a Connection between MongoDB cluster(Server) and Golang(file)
 - a. Import dependencies :
 - i. go get github.com/gorilla/mux (For Managing http requests)
 - ii. go get go.mongodb.org/mongo-driver/mongo(For Managing and establishing connection with MongoDB)

Coding

Create a file under GOPath Directory

(C:\Users\ArpitSG\Desktop\Go-Workspace\src\Internship\main.go)

Open a text Editor (Atom) and write the following code that just puts in basic data model and outline of our go file.



```
1 package main //executable
2
3 import "fmt" // for input and output
4 //Data models
5 type User struct { // defining as asked in task
6     ID      primitive.ObjectID `json:"_id,omitempty" bson:"_id,omitempty"`
7     Firstname string      `json:"firstname,omitempty" bson:"firstname,omitempty"`
8     Lastname  string      `json:"lastname,omitempty" bson:"lastname,omitempty"`
9     Password  string      `json:"Password,omitempty" bson:"Password,omitempty"`
10 }
11 type Post struct{ // defining as asked in task
12     ID      primitive.ObjectID `json:"_id,omitempty" bson:"_id,omitempty"`
13     Caption string      `json:"Caption,omitempty" bson:"Caption,omitempty"`
14     Image_url string    `json:"Image_url,omitempty" bson:"Image_url,omitempty"`
15     Posted_time integer  `json:"Posted_time,omitempty" bson:"Posted_time,omitempty"`
16 }
17 func main() {
18     fmt.Println("Starting the application...") //just to show start of application
19 }
20
```

Json – for user understanding (Web client)

Bson – for MongoDB interpretation

Next lets create a mongo client and establish connection(within main function along with context time) each time a function of our application is implemented.

```
21 var client *mongo.Client // a client would be setup for each time of implementation
22 func main() {
23     fmt.Println("Starting the application...") //just to show start of application
24     ctx, _ := context.WithTimeout(context.Background(), 10*time.Second) // for establishing connection (context)
25     clientOptions := options.Client().ApplyURI("mongodb://localhost:27017") // port setup
26     client, _ = mongo.Connect(ctx, clientOptions) // mongo Connect
27 }
28
```

Next lets define the router to complete the connection process with MongoDB by passing in our router and port.

```
28 var client *mongo.Client // a client would be setup for each time of implementation
29 func main() {
30     var (
31         client *mongo.Client
32         mongoURL = "mongodb://localhost:27017"
33     )
34     fmt.Println("Starting the application...") //just to show start of application
35     ctx, _ := context.WithTimeout(context.Background(), 10*time.Second) // for establishing connection (context)
36     client, err := mongo.NewClient(options.Client().ApplyURI(mongoURL)) // mongo Connect
37     err = client.Connect(ctx) // to check if connection is established or not
38     ctx, _ = context.WithTimeout(context.Background(), 10*time.Second)
39     if err = client.Ping(ctx, readpref.Primary()); err != nil { // ping mongo server
40         fmt.Println("could not ping to mongo db service: %v\n", err)
41         return
42     }
43 }
```

Now lets Check everything is working properly.

To do so lets go to terminal (Cmd) and execute are main.go (file) with:

(go run main.go)

Note you should be in the GoPath file directory

(C:\Users\ArpitSG\Desktop\Go-Workspace\src\Internship\main.go)

```
# command-line-arguments
.\main.go:26:15: undefined: Time

C:\Users\ArpitSG\Desktop\Go-Workspace\src\Internship>go run main.go
Starting the application...
connected to nosql database: mongodb://localhost:27017
```

Now with this the connection to server is setup and we have how the basic data model of our application looks like.

Next lets perform the task as descirebed in the doc file:

*So in the folder named **TheMainAPI** all the required coding tasks are done.*

****NOTE: Proper comments are added in each file for better understanding.****

ThMainAPI folder has been divided as:

- i. **main.go***
- ii. **posts.go***
- iii. **go.sum***
- iv. **go.mod***
- v. **Database(Folder > db.go)***

In Main.go:

The basic data model of our application has been implemented with proper http requests and json format.

The User data model is implemented and data is stored in the collections accordingly.

All the handlers are added and stored in a function named `handelfunction()`.

```

1 package main
2
3 import (
4     "TheMainAPI/DB"
5     "context"
6     "encoding/json"
7     "fmt"
8     "go.mongodb.org/mongo-driver/bson"
9     "golang.org/x/crypto/bcrypt"
10    "io/ioutil"
11    "log"
12    "net/http"
13    "os"
14    "reflect"
15    "strconv"
16    "time"
17 )
18 //Struct defined as per the task here instead of struct users_collection are used
19 type UserDetails struct {
20     Id int `json: "Id"` //unique int type
21     Name string `json: "Name"` // rest all strings
22     Email string `json: "Email"`
23     Password string `json: "Password"`
24 }
25 var UserArr []UserDetails // here all user are stored with the help of array
26 //handle functions
27 func homePage(w http.ResponseWriter, r *http.Request) { // Function to display few greeting lines
28     fmt.Fprintf(w, "This is a Instagram API(Task 1)")
29     fmt.Println("Endpoint: homePage") //endpoint indication
30 }
31
32 func AddUserFunc(w http.ResponseWriter, r *http.Request) {
33     if r.Method == "POST" { // here Method post used to get the response from web users
34         reqBody, _ := ioutil.ReadAll(r.Body)
35         fmt.Fprintf(w, "%v", string(reqBody))
36         var users UserDetails // variable to store the data
37         json.Unmarshal(reqBody, &users)
38         // update our global userdetail array to include
39         // our new user
40         UserArr = append(UserArr, users) // adding entered details with appendbackwards in the global array
41
42         // Save the Password (hash) Password(users) // Save used to encode the data task 1 user use

```

```

41
42     json.NewEncoder(w).Encode(users)           // json used to encode the data from users var
43
44     fmt.Println("Endpoint: users")             //endpoint indication
45     DatabaseName := "Instagram_DB"             // creating and moving the database to env
46     client, err := db.CreateDatabaseConnection(DatabaseName)
47     if err != nil {                             // checking connection to mongodb Server
48         fmt.Println("Failed to connect to Database")
49         panic(err)
50     }
51     defer client.Disconnect(context.TODO()) // this handels when user Disconnects
52     ctx, _ := context.WithTimeout(context.Background(), 10*time.Second)
53     col := client.Database(DatabaseName).Collection("users_collection")
54     HashPassword(users.Password)               //encrypting password for secruing user password
55     fmt.Println(HashPassword(users.Password))  // showing user DEBUGed:Password
56     result, insertErr := col.InsertOne(ctx, users) // result and err used in collection col
57     if insertErr != nil {
58         fmt.Println("InsertONE Error:", insertErr) // checking id user entered the data correctly or not
59         os.Exit(1)
60     } else {
61         fmt.Println("InsertOne() result type: ", reflect.TypeOf(result)) // inserting data in collection with reseult
62         fmt.Println("InsertOne() api result type: ", result)
63
64         newID := result.InsertedID // assigning unique id each time at insertion
65         fmt.Println("InsertedOne(), newID", newID) // showing the ID
66         fmt.Println("InsertedOne(), newID type:", reflect.TypeOf(newID))
67     }
68 }
69
70 }
71 }
72 func GetUserFunc(w http.ResponseWriter, r *http.Request) { //function to perform the post and get tasks
73
74     keys, ok := r.URL.Query()["id"]
75
76     if !ok || len(keys[0]) < 1 { // checking the parameters as passed
77         log.Println("Url Param 'key' is missing")
78         return
79     }
80
81     // Query()["key"] will return an array of items,
82     // we only want the single item

```

```

80
81 // Query()["key"] will return an array of items,
82 // we only want the single item.
83 key := keys[0]
84
85 log.Println("Url Param 'key' is: " + string(key))
86 //var userDB UserDetails
87 DatabaseName := "Instagram_DB"
88 client, err := db.CreateDatabaseConnection(DatabaseName) // create a database if all criterias are fulfilled
89 if err != nil {
90     fmt.Println("Failed to connect to DB")
91     panic(err) // else print Error
92 }
93 defer client.Disconnect(context.TODO()) // for disconnecting Client
94 ctx, _ := context.WithTimeout(context.Background(), 10*time.Second)
95 col := client.Database(DatabaseName).Collection("users_collection")
96 id_key, err := strconv.Atoi(key)
97 filterCursor, err := col.Find(ctx, bson.M{"id":id_key }) // this maps the user id as stroed previously in col Col
98 fmt.Println(filterCursor)
99 if err != nil {
100     log.Fatal(err) // if not found the key/id
101 }
102 var userFiltered []bson.M
103 if err = filterCursor.All(ctx, &userFiltered); err != nil {
104     log.Fatal(err)
105 }
106 fmt.Println(userFiltered)
107 json.NewEncoder(w).Encode(userFiltered) // encoded the data with json
108 }
109
110 func handleRequests(){ // the main handleRequests
111     http.HandleFunc("/", homePage)
112     http.HandleFunc("/users", AddUserFunc)
113     http.HandleFunc("/users/", GetUserFunc)
114     http.HandleFunc("/posts", createPosts)
115     http.HandleFunc("/posts/", PostById)
116     http.HandleFunc("/posts/users/", returnAllPosts)
117
118     log.Fatal(http.ListenAndServe(":12345", nil))
119
120
121

```



```

100     log.Fatal(err) // if not found the key/id
101 }
102 var userFiltered []bson.M
103 if err = filterCursor.All(ctx, &userFiltered); err != nil {
104     log.Fatal(err)
105 }
106 fmt.Println(userFiltered)
107 json.NewEncoder(w).Encode(userFiltered) // encoded the data with json
108 }
109
110 func handleRequests() { // the main handleRequests
111     http.HandleFunc("/", homePage)
112     http.HandleFunc("/users", AddUserFunc)
113     http.HandleFunc("/users/", GetUserFunc)
114     http.HandleFunc("/posts", createPosts)
115     http.HandleFunc("/posts/", PostById)
116     http.HandleFunc("/posts/users/", returnAllPosts)
117
118     log.Fatal(http.ListenAndServe(":12345", nil))
119 }
120
121
122 }
123 //password encryption generating methods
124 func HashPassword(password string) (string, error) {
125     bytes, err := bcrypt.GenerateFromPassword([]byte(password), 14)
126     return string(bytes), err
127 }
128 // checking for Password
129 func CheckPasswordHash(password, hash string) bool {
130     err := bcrypt.CompareHashAndPassword([]byte(hash), []byte(password))
131     return err == nil
132 }
133 func main() {
134
135     handleRequests() // function call in main Method
136
137 }
138 //Arpit Singh
139 //19BCG10069
140

```

Next *Posts.go* similar to *main.to* :

However here post data model is described

And search by postid/id logic has been implemented.

Main.go

```
1  package main
2
3  import (
4      "TheMainAPI/db"
5      "context"
6      "encoding/json"
7      "fmt"
8      "go.mongodb.org/mongo-driver/bson"
9      "io/ioutil"
10     "log"
11     "net/http"
12     "os"
13     "reflect"
14     "strconv"
15     "time"
16 )
17
18 //Struct for post collection as described in the Task
19 type postsDetails struct {
20
21     Id int `json: "Id"` // id and post id given unique integer id for future uses
22     PostId int `json: "PostId"`
23     Caption string `json: "Caption"`
24     ImageURL string `json: "ImageURL"`
25     PostedTS time.Time `json: "PostedTS"` // Time selector used for time datatype
26 }
27 var PostArr []postsDetails // all post details stored in this array
28 func createPosts(w http.ResponseWriter, r *http.Request){
29     if r.Method == "POST" {
30
31         reqBody, _ := ioutil.ReadAll(r.Body) // r used for request var.
32         fmt.Fprintf(w, "%+v", string(reqBody))
33         var posts postsDetails // var to add and include postsDetails
34         json.Unmarshal(reqBody, &posts)
35         // update our global post array to include
36         // our new post with the help of appendbackwards.
37         PostArr = append(PostArr, posts)
38
39         json.NewEncoder(w).Encode(posts) // encoded the data in json format
40
41         fmt.Println("Endpoint : posts")
42         DatabaseName := "Instagram DR" // move to env
```

```

41     fmt.Println(Endpoint, posts)
42     DatabaseName := "Instagram_DB" // move to env
43     client, err := db.CreateDatabaseConnection(DatabaseName)
44     if err != nil { // here proccess is simimlar to main.go i.e. for the creation and connection to Server
45         fmt.Println("Failed to connect to DB")
46         panic(err)
47     }
48     defer client.Disconnect(context.TODO())
49
50     ctx, _ := context.WithTimeout(context.Background(), 10*time.Second)
51     col := client.Database(DatabaseName).Collection("users_posts")
52     result, insertErr := col.InsertOne(ctx, posts) // insertion of posts proccess
53     if insertErr != nil {
54         fmt.Println("InsertONE Error:", insertErr)
55         os.Exit(1)
56     } else {
57         fmt.Println("InsertOne() result type: ", reflect.TypeOf(result))
58         fmt.Println("InsertOne() api result type: ", result)
59
60         newID := result.InsertedID // seprate insertion Id assigned each Time
61         fmt.Println("InsertedOne(), newID", newID)
62         fmt.Println("InsertedOne(), newID type:", reflect.TypeOf(newID))
63     }
64 }
65 }
66 }
67 }
68 }
69
70 func PostById(w http.ResponseWriter, r *http.Request) { // function/Logic to search the post with postid method
71
72     keys, ok := r.URL.Query()["postid"]
73
74     if !ok || len(keys[0]) < 1 {
75         log.Println("Url Param 'key' is missing")
76         return
77     }
78
79     // Query()["key"] will return an array of items,
80     // we only want the single item.
81     key := keys[0]
82

```

```

80 // we only want the single item.
81 key := keys[0]
82
83 log.Println("Url Param 'key' is: " + string(key))
84 //var userDB UserDetails
85 DatabaseName := "Instagram_DB"
86 client, err := db.CreateDatabaseConnection(DatabaseName)
87 if err != nil {
88     fmt.Println("Failed to connect to DB")
89     panic(err)
90 }
91 defer client.Disconnect(context.TODO())
92 ctx, _ := context.WithTimeout(context.Background(), 10*time.Second)
93 col := client.Database(DatabaseName).Collection("users_posts")
94 id_key, err := strconv.Atoi(key) // similar to main.go just instead of key here postid is used
95 filterCursor, err := col.Find(ctx, bson.M{"postid":id_key })
96 fmt.Println(filterCursor)
97 if err != nil {
98     log.Fatal(err)
99 }
100 var postFiltered []bson.M
101 if err = filterCursor.All(ctx, &postFiltered); err != nil {
102     log.Fatal(err)
103 }
104 fmt.Println(postFiltered) // mapped with postid and added to the collection in json format.
105 json.NewEncoder(w).Encode(postFiltered)
106 }
107
108
109 func returnAllPosts(w http.ResponseWriter, r *http.Request) {
110     keys, ok := r.URL.Query()["id"]
111
112     if !ok || len(keys[0]) < 1 {
113         log.Println("Url Param 'key' is missing")
114         return
115     }
116
117     // Query()["key"] will return an array of items,
118     // we only want the single item.
119     key := keys[0]
120
121     log.Println("Url Param 'key' is: " + string(key))

```

```

106 }
107
108
109 func returnAllPosts(w http.ResponseWriter, r *http.Request) {
110     keys, ok := r.URL.Query()["id"]
111
112     if !ok || len(keys[0]) < 1 {
113         log.Println("Url Param 'key' is missing")
114         return
115     }
116
117     // Query()["key"] will return an array of items,
118     // we only want the single item.
119     key := keys[0]
120
121     log.Println("Url Param 'key' is: " + string(key))
122     DatabaseName := "Instagram_DB" // move to env
123     client, err := db.CreateDatabaseConnection(DatabaseName)
124     if err != nil {
125         fmt.Println("Failed to connect to DB")
126         panic(err)
127     }
128     defer client.Disconnect(context.TODO())
129     ctx, _ := context.WithTimeout(context.Background(), 10*time.Second)
130     col := client.Database(DatabaseName).Collection("users_posts")
131     id_key, err := strconv.Atoi(key)
132     //var result UserDetails
133     cursor, err := col.Find(ctx, bson.M{"id":id_key })
134     if err != nil {
135         log.Fatal(err)
136     }
137     var user_list []bson.M
138     if err = cursor.All(ctx, &user_list); err != nil {
139         log.Fatal(err)
140     }
141     fmt.Println(user_list)
142     fmt.Println("Endpoint Hit: returnAllPosts")
143     json.NewEncoder(w).Encode(user_list)
144 }
145 //Arpit Singh
146 //19BCG10068
147

```

Next we have *go.sum* and *go.mod*:

These 2 files are used to store and get all the required dependencies.

Mod – module.

Sum – checks the cryptographic checksums.

GO.SUM:

```

1 // This file consists of all the dependencies used.
2
3
4
5
6
7 github.com/BurntSushi/toml v0.3.1/go.mod h1:xHWCNGjB5oqiDr8zfno3MHue2Ht5sIBksp03qcyfWMU=
8 github.com/davecgh/go-spew v1.1.0/go.mod h1:J7Y8YcW2NiHsgmVo/mv3lAw1/skON4iLHjSsI+c5H38=
9 github.com/davecgh/go-spew v1.1.1/go.mod h1:J7Y8YcW2NiHsgmVo/mv3lAw1/skON4iLHjSsI+c5H38=
10 github.com/go-stack/stack v1.8.0 h1:5SGMzNM5HxrEjV0uWw2LTmX6E2Izsfxas4+YHWRs3Lsk=
11 github.com/go-stack/stack v1.8.0/go.mod h1:v0f6uXyyMGvRgIKkXu+yp6POwL0qKG85N/meLR3HDY=
12 github.com/gobuffalo/attrs v0.0.0-20190224210810-a9411de4debd/go.mod h1:4duuawTq12wkkpB4EPgWMAai6/Kc6WEzB3bhFwpHzjE
13 github.com/gobuffalo/depgen v0.0.0-20190329151759-d478694a28d3/go.mod h1:3STtPUQYuzV0gBVOY3vy6cFmm/ljr4pABfrTeHNLHL
14 github.com/gobuffalo/depgen v0.1.0/go.mod h1:+ifsuy7fh115RWncXQQKjW59JPKdah5sZvtHc2RXGLg=
15 github.com/gobuffalo/envy v1.6.15/go.mod h1:n7DRkBerg/aorDM8kbduw5dN3oXGswK51iaSCx4T5NI=
16 github.com/gobuffalo/envy v1.7.0/go.mod h1:n7DRkBerg/aorDM8kbduw5dN3oXGswK51iaSCx4T5NI=
17 github.com/gobuffalo/flect v0.1.0/go.mod h1:d2ehjJqG0H/Kjqcoz+F7JHTBbmDb38yXA598Hb50EGs=
18 github.com/gobuffalo/flect v0.1.1/go.mod h1:8JCgGvBrJhVgD6399mQr4fx5RrFGKvZFbjb6RE/9UI=
19 github.com/gobuffalo/flect v0.1.3/go.mod h1:8JCgGvBrJhVgD6399mQr4fx5RrFGKvZFbjb6RE/9UI=
20 github.com/gobuffalo/genny v0.0.0-20190329151137-27723ad26ef9/go.mod h1:rW54Z12d1Zbf19r1sn0nur75KqhYp52EAGGxTbBhNk
21 github.com/gobuffalo/genny v0.0.0-20190403191548-3ca520ef0d9e/go.mod h1:80L1jjk3VjWw0rXwWMRZdzhW3DsrdjILv1L/SFKBzF2E
22 github.com/gobuffalo/genny v0.1.0/go.mod h1:XiDbUqzak3lHdS//TPu20giFB+51Ur5f7CSnXZ/JDv0=
23 github.com/gobuffalo/genny v0.1.1/go.mod h1:5TExbEyY48pfunL4Q5XxLD0mdsD44RRq4mVZ0Ex28Xk=
24 github.com/gobuffalo/gitgen v0.0.0-20190315122116-cc086187d211/go.mod h1:VEHJK/VE9dmhejeLeNt7UVv1SGv3ziL+djtTr3yyzCC
25 github.com/gobuffalo/gogen v0.0.0-20190315121717-8f38393713f5/go.mod h1:V9QVDixsgKNz5L2IYiGr8datGmhB577vzTDqypH36E
26 github.com/gobuffalo/gogen v0.1.0/go.mod h1:8NTElM5qd8RZ15VjQTFkAW6q0Mx5wBbW4dC5C3BY8gg=
27 github.com/gobuffalo/gogen v0.1.1/go.mod h1:y8iBtmHmGc4qa3urIyo1shvOD8JftTfCki+17ixFDNE=
28 github.com/gobuffalo/logger v0.0.0-20190315122116-86e12af44bc2/go.mod h1:QdxKcLW541h5SGTbnhUc4gaNIXRjlDppFGaDqzbrBd3v
29 github.com/gobuffalo/mapi v1.0.1/go.mod h1:4VAGh89y6rV0vm5A8fKFxYg+wiW6LO1fMTG9hNkStFc=
30 github.com/gobuffalo/mapi v1.0.2/go.mod h1:4VAGh89y6rV0vm5A8fKFxYg+wiW6LO1fMTG9hNkStFc=
31 github.com/gobuffalo/packd v0.0.0-20190315124812-a385830c7fc0/go.mod h1:M2Juc+hhDXf/PnmBANFQcx4DM3wRbgDvnVWeG2RIxq4
32 github.com/gobuffalo/packd v0.1.0/go.mod h1:M2Juc+hhDXf/PnmBANFQcx4DM3wRbgDvnVWeG2RIxq4=
33 github.com/gobuffalo/packr/v2 v2.0.9/go.mod h1:emmyGweYTM6Kdper+iywB6YK5YzuKchgtJQZ800dn4PQ=
34 github.com/gobuffalo/packr/v2 v2.2.0/go.mod h1:CaAwI0GPIAv+SvKLTv8AFwL+Cm78K/I/Vcm/3ptBN+0=
35 github.com/gobuffalo/syncx v0.0.0-20190224160051-33c29581e754/go.mod h1:HhnNqWY95UYww3u5ASeV7vtgYkT2t16hJgV3AEPUpw
36 github.com/golang/snappy v0.0.1 h1:Qgr9rKw7uDukrBSmqe1DsG8sJyGOGtuasMwWvp2P4=
37 github.com/golang/snappy v0.0.1/go.mod h1:XxbfmMg8lxeFKM7IXC3fBN1/7bRcc72aCRzEWmP2Q=
38 github.com/google/go-cmp v0.5.2/go.mod h1:v8dTdLbM62kIc/vjV1+f65V22dbKXbowE6jgT/gNBxE=
39 github.com/gorilla/mux v1.8.0 h1:i40aqfK1Ri2SLN9hojwV5ZA91wcXFOvkdnIEFDp5koI=
40 github.com/gorilla/mux v1.8.0/go.mod h1:DVBog23sWSsFRCP05f1EN6jmj59Unw/n46BH5rLB71So=
41 github.com/inconshreveable/mousetrap v1.0.0/go.mod h1:PxpqiEviyGE2Gv3NX3JIT2ANYtuPF10arO4DADm73n8=
42

```



```
42 github.com/joho/godotenv v1.3.0/go.mod h1:7hK45KPybAKOC6peb+G5ykLZFmXejkZhHbwpqxOKXbg=
43 github.com/karrick/godirwalk v1.8.0/go.mod h1:H5KPZjovv4LE+QYImBI8xVtrBRgYrIVsaRPx4tDPEn4=
44 github.com/karrick/godirwalk v1.10.3/go.mod h1:RoGL9dQei4vP9iLrPETWE8CLOZ1kIN0LhBygSwwAsHA=
45 github.com/klauspost/compress v1.13.6 h1:P76CopJELS0T102mebmnrzGwaaJssP/EszplttgQxcgc=
46 github.com/klauspost/compress v1.13.6/go.mod h1:/3/Vjq9QcHkK5UeR5lBEmyoZi1Fhe47etQ6QUkpK6sk=
47 github.com/konsorten/go-windows-terminal-sequences v1.0.1/go.mod h1:T0+ingSBFLxvqU3pZm/2kptfBszLMUkC4ZK/EgS/cQ=
48 github.com/konsorten/go-windows-terminal-sequences v1.0.2/go.mod h1:T0+ingSBFLxvqU3pZm/2kptfBszLMUkC4ZK/EgS/cQ=
49 github.com/kr/pretty v0.1.0/go.mod h1:dAy3ld7l9f0ibDNOQOHMvYIIbhfbHSm3C4ZsoJORN0=
50 github.com/kr/pty v1.1.1/go.mod h1:pFQYn66WHR0pPYN1jwOMqo10TkYh1fy3cY1o2l3bcS0=
51 github.com/kr/text v0.1.0/go.mod h1:4Jbv+DJW3UT/LiOwJeYQe1efqtUx/iVham/4vfdArNI=
52 github.com/markbates/once v0.0.0-20181203154359-bf2de49a0be2/go.mod h1:Ld9puTsIW75CHF650eIOkyKbteujpZVXDpWK6VGZbxE
53 github.com/markbates/safe v1.0.1/go.mod h1:nAqgmR17cY2nqMc92/bSEeQA+R40heNU2T1kNSCbdG0=
54 github.com/montanaflynn/stats v0.0.0-20171201202039-1bf9d9cd8cbe/go.mod h1:wLBQJutMNUDYhXwkmf0ly8i1Dtp5TECJFWDZD2D5I
55 github.com/pelletier/go-toml v1.7.0/go.mod h1:vwGfMzjaWfMwYfHwgiBhI2YUuM4fB6nL6lVAvS1LBMMhTE=
56 github.com/pkg/errors v0.8.0/go.mod h1:bwawxfHBFNV+L2hUp1rHADufV3IMtnDRdf1r5NINEl0=
57 github.com/pkg/errors v0.8.1/go.mod h1:bwawxfHBFNV+L2hUp1rHADufV3IMtnDRdf1r5NINEl0=
58 github.com/pkg/errors v0.9.1 h1:FEBLx1zS2I4oWpjj7qsBe1xURkuhQAwrK5UwLGTwt4=
59 github.com/pkg/errors v0.9.1/go.mod h1:bwawxfHBFNV+L2hUp1rHADufV3IMtnDRdf1r5NINEl0=
60 github.com/pmezard/go-difflib v1.0.0/go.mod h1:iKH77koFhYxTK1pcRnkKqfTogsbg7gZNVY4sRDYZ/4=
61 github.com/rogpeppe/go-internal v1.1.0/go.mod h1:M8bDsm7K20lrFYOpMOWEs/qY81heoFRclV5y23lUDJ4=
62 github.com/rogpeppe/go-internal v1.2.2/go.mod h1:M8bDsm7K20lrFYOpMOWEs/qY81heoFRclV5y23lUDJ4=
63 github.com/rogpeppe/go-internal v1.3.0/go.mod h1:M8bDsm7K20lrFYOpMOWEs/qY81heoFRclV5y23lUDJ4=
64 github.com/sirupsen/logrus v1.4.0/go.mod h1:LxeOpSwwHxABJmUn/MG1IvRgCAasNZTL0kJPxbbu5Vwo=
65 github.com/sirupsen/logrus v1.4.1/go.mod h1:ni0Sbl8bgC9z8RoU9G6nDwqqs/fq4eDPysMBDgk/93Q=
66 github.com/sirupsen/logrus v1.4.2/go.mod h1:tLMuLIdttU9McNUSpp0XgXVQah82FyeX6MwdIuYE2rE=
67 github.com/spf13/cobra v0.0.3/go.mod h1:l0RY5zgKvJaso13XT1TypsSe7PqH0Sj9dhYf7v3XqQ=
68 github.com/spf13/pflag v1.0.3/go.mod h1:DYY7MBk1bdzusC3SVhjObp+wFpr4gzcVqqNjLnInEg4=
69 github.com/stretchr/objx v0.1.0/go.mod h1:HFkY916IF+rwdDfMAkV70twuqBVzrE8GR6GFx+wEXME=
70 github.com/stretchr/objx v0.1.1/go.mod h1:HFkY916IF+rwdDfMAkV70twuqBVzrE8GR6GFx+wEXME=
71 github.com/stretchr/testify v1.2.2/go.mod h1:a80nRc1b4nhh0aRAV+Yts87kKdqPP7pXfy6kDkUVs=
72 github.com/stretchr/testify v1.3.0/go.mod h1:M5Wly9Dh21IEIfnGQwXGc5bZfKNJtfHm1UVUgZn+0EI=
73 github.com/stretchr/testify v1.6.1/go.mod h1:6Fq8oRcR53rry900zMQJjRRixrwX3KX962/h/Wwjteg=
74 github.com/tidwall/pretty v1.0.0/go.mod h1:XNkn8801Chp5DQmQeStsy+sBenx6DDtFZJXhVysOjyk=
75 github.com/xdg-go/pbkdf2 v1.0.0 h1:Su7DPu48wXmMwC3bs7MCMG+z4FhcYEuZ5d1vchbq0B0c=
76 github.com/xdg-go/pbkdf2 v1.0.0/go.mod h1:jrpuaogTd400dnrH08LkMI/xciMbP0ebTwRqct5RDeI=
77 github.com/xdg-go/scram v1.0.2 h1:akYIkZ28e6A96dkWnJQu3nmCzH3YfwMPQEXUYDaRv7w=
78 github.com/xdg-go/scram v1.0.2/go.mod h1:1WAg6h33pAw+iRreB3400RO2Nf7qel3VV3fjBj+hCSs=
79 github.com/xdg-go/stringprep v1.0.2 h1:6iq84/ryjjeRmMJwutI51F2G1PLP5BftvXHeYjyhBc=
80 github.com/xdg-go/stringprep v1.0.2/go.mod h1:8F9zXuVzgWmYt5DUm4GUfZGdD3W+LCvS6+da405kxM=
81 github.com/youmark/pkcs8 v0.0.0-20181117223130-1be2e3e5546d h1:splanxYIlg+5LfHAM6xpdFEAYOk81ySO56hMFq6uLyA=
82 github.com/youmark/pkcs8 v0.0.0-20181117223130-1be2e3e5546d/go.mod h1:rHwXgn7JulP+udvsHwJovG1YGAP6VLg4y9I5dyZdqmA=
```

```
78 github.com/xdg-go/scram v1.0.2/go.mod h1:1WAg6h33pAw+iRreB34OOR02Nf7qe13VV3fjBj+hCSs=
79 github.com/xdg-go/stringprep v1.0.2 h1:6iq84/ryjjeRmMJwxutI51F2GIP1P5BftvXHeYjyhBc=
80 github.com/xdg-go/stringprep v1.0.2/go.mod h1:8F9zXuVzgwmYTDUm4GUfZGdD3W+LCvS6+da405kxM=
81 github.com/youmark/pkcs8 v0.0.0-20181117223130-1be2e3e5546d h1:splanxYIlg+5LfHAM6xpdFEAYOk81yS056hMFq6uLyA=
82 github.com/youmark/pkcs8 v0.0.0-20181117223130-1be2e3e5546d/go.mod h1:rHwXgn7JulP+udvsHwJoV61YGAP6VLg4y9I5dyZdqmA=
83 go.mongodb.org/mongo-driver v1.7.3 h1:64L/eYY9YrQAK/AUGkV0koQKzQnYddnWxrd/Etf0jIs=
84 go.mongodb.org/mongo-driver v1.7.3/go.mod h1:NqaYOwnXWr5Pm7AOpO5QFxFKJ503nbMse/R79oO62zWg=
85 golang.org/x/crypto v0.0.0-20180904163835-0709b304e793/go.mod h1:6SG95UA2DQfeDnFUPMdvaQWQ7yPrPDi9nLGo2tz2b4=
86 golang.org/x/crypto v0.0.0-20190308221718-c2843e01d9a2/go.mod h1:djNgcEr1/C05ACKg1iLf1JU5Ep61QUkGWBqpdssI0+w=
87 golang.org/x/crypto v0.0.0-20190422162423-af44ce270edf/go.mod h1:WFFai1msRO1wXaEeE5yQxYXGsfI8pQAWXQop6sCtWE=
88 golang.org/x/crypto v0.0.0-20200302210943-78000ba7a073 h1:xMPOj6Pz6UiP1wXlkrtpqHbR8AVFnyPEQq/wRWz9lM=
89 golang.org/x/crypto v0.0.0-20200302210943-78000ba7a073/go.mod h1:LzIPMQfyMNHhGPhUkYOS5KpL4U8rLKemX1yGLhDgUto=
90 golang.org/x/net v0.0.0-20190311183353-d8887717615a/go.mod h1:t9HGtf8HONx5eT2rtn7q6eTqICyQUVnKs3thJo3Qp1g=
91 golang.org/x/net v0.0.0-20190404232315-eb5bcb51f2a3/go.mod h1:t9HGtf8HONx5eT2rtn7q6eTqICyQUVnKs3thJo3Qp1g=
92 golang.org/x/sync v0.0.0-20190227155943-e225da77a7e6/go.mod h1:RxMgew5VJxzue5/jJTE5uejpjVlOe/izrB70Jof72aM=
93 golang.org/x/sync v0.0.0-20190412183630-56d35773e84/go.mod h1:RxMgew5VJxzue5/jJTE5uejpjVlOe/izrB70Jof72aM=
94 golang.org/x/sync v0.0.0-20190423024810-112230192c58/go.mod h1:RxMgew5VJxzue5/jJTE5uejpjVlOe/izrB70Jof72aM=
95 golang.org/x/sync v0.0.0-20190911185100-cd5d95a43a6e h1:vcxGaoTs7kV8m5Np9uUNQin4BrLothgV7252N8V+FwY=
96 golang.org/x/sync v0.0.0-20190911185100-cd5d95a43a6e/go.mod h1:RxMgew5VJxzue5/jJTE5uejpjVlOe/izrB70Jof72aM=
97 golang.org/x/sys v0.0.0-20180905080454-ebe1bf3edb33/go.mod h1:STP8DvDyc/dI5b8T5hshtkjs+E42TnysNCUPdjciGhY=
98 golang.org/x/sys v0.0.0-20190215142949-d0b11bdaac8a/go.mod h1:STP8DvDyc/dI5b8T5hshtkjs+E42TnysNCUPdjciGhY=
99 golang.org/x/sys v0.0.0-20190403152447-81d4e9dc473e/go.mod h1:h1NjWce9XRlGQEsW7wpKNCjG9DtNlClVuFLEZdDNbEs=
100 golang.org/x/sys v0.0.0-20190412213103-97732733099d/go.mod h1:h1NjWce9XRlGQEsW7wpKNCjG9DtNlClVuFLEZdDNbEs=
101 golang.org/x/sys v0.0.0-20190419153524-e88e3143a4fa/go.mod h1:h1NjWce9XRlGQEsW7wpKNCjG9DtNlClVuFLEZdDNbEs=
102 golang.org/x/sys v0.0.0-20190422165155-953cdadca894/go.mod h1:h1NjWce9XRlGQEsW7wpKNCjG9DtNlClVuFLEZdDNbEs=
103 golang.org/x/sys v0.0.0-20190531175056-4c3a928424d2/go.mod h1:h1NjWce9XRlGQEsW7wpKNCjG9DtNlClVuFLEZdDNbEs=
104 golang.org/x/text v0.3.0/go.mod h1:NqM8EUOU14njk3fQmWtpc6LDnwhi/IjpwHt7yyuw0Q=
105 golang.org/x/text v0.3.5 h1:i6eZZ+zk0S0f0xgBpEPD18qWcJda6q1sxt3S0kzyUQ=
106 golang.org/x/text v0.3.5/go.mod h1:5Zoc/QRtKVWzQhOtBvMwqHzDpF61r09z98x98xDceosuG1Q=
107 golang.org/x/tools v0.0.0-20180917221912-90fa682c2a6e/go.mod h1:n7NCudcB/nEzxxVgMlbDwY5pWTLqBcC2KZ6jyyvM4mQ=
108 golang.org/x/tools v0.0.0-20190329151228-23e29df326fe/go.mod h1:LCzVG0aR6xX0jkQ3onu1FJEFr0SW1gC7cKk1uF8kGRs=
109 golang.org/x/tools v0.0.0-20190416151739-9c9e1878f421/go.mod h1:LCzVG0aR6xX0jkQ3onu1FJEFr0SW1gC7cKk1uF8kGRs=
110 golang.org/x/tools v0.0.0-20190420181800-aa740d480789/go.mod h1:LCzVG0aR6xX0jkQ3onu1FJEFr0SW1gC7cKk1uF8kGRs=
111 golang.org/x/tools v0.0.0-20190531172133-b3315ee88b7d/go.mod h1:/rFqWRud4F7ZHNgwSSTFct+R/Kf40FW1sUzUQTQTgfc=
112 golang.org/x/xerrors v0.0.0-20191204190536-9bdfabe68543/go.mod h1:I/5z698sn9Ka8TeJc9MKroUUfQBauWjQqLJ2OPfMY0=
113 gopkg.in/check.v1 v0.0.0-20161208181325-20d25e280405/go.mod h1:Co6ibVJAznAaIkqp8huTwlJQCZ016jof/cbN4VW5Yz0=
114 gopkg.in/check.v1 v1.0.0-20180628173108-788fd7840127/go.mod h1:Co6ibVJAznAaIkqp8huTwlJQCZ016jof/cbN4VW5Yz0=
115 gopkg.in/errgo.v2 v2.1.0/go.mod h1:hNsdiEY+bozCKY1Ytp96fpM3vjJbqLJn88ws8XvfDNI=
116 gopkg.in/yaml.v2 v2.2.8/go.mod h1:hI93XBMqTisBFMUTm0b8Fm+jr3Dg1NNxqmp+5A1VGuI=
117 gopkg.in/yaml.v3 v3.0.0-20200313102051-9f266ea9e77c/go.mod h1:K4uYk7z7BCEPqu6E+C64Yfv1cQ7kz7rIZviUmN+EgEM=
118
```


GO.MOD:

```
1 // this file consists of all github repos used along with there versions
2 module TheMainAPI
3
4 go 1.17
5
6 require (
7     github.com/go-stack/stack v1.8.0 // indirect
8     github.com/golang/snappy v0.0.1 // indirect
9     github.com/gorilla/mux v1.8.0 // indirect
10    github.com/klauspost/compress v1.13.6 // indirect
11    github.com/pkg/errors v0.9.1 // indirect
12    github.com/xdg-go/pbkdf2 v1.0.0 // indirect
13    github.com/xdg-go/scram v1.0.2 // indirect
14    github.com/xdg-go/stringprep v1.0.2 // indirect
15    github.com/youmark/pkcs8 v0.0.0-20181117223130-1be2e3e5546d // indirect
16    go.mongodb.org/mongo-driver v1.7.3 // indirect
17    golang.org/x/crypto v0.0.0-20200302210943-78000ba7a073 // indirect
18    golang.org/x/sync v0.0.0-20190911185100-cd5d95a43a6e // indirect
19    golang.org/x/text v0.3.5 // indirect
20 )
21
```

Lastly we have a Folder Database(Database>db.go):

Here we setup a connection with MongoDB server and Check it as well *(as done at start of document).

Db.go

```
1 // as described in the word document here we establish a connection to mongoDB server
2 package db
3
4 import (
5     "context"
6     "fmt"
7     "go.mongodb.org/mongo-driver/mongo"
8     "go.mongodb.org/mongo-driver/mongo/options"
9     "log"
10 )
11
12 func CreateDatabaseConnection(dbName string) (*mongo.Client, error) { // function to create a connection with mongodb
13     clientOptions := options.Client().ApplyURI("mongodb://localhost:27017")
14
15     // Connect to MongoDB
16     client, err := mongo.Connect(context.TODO(), clientOptions)
17
18     if err != nil {
19         log.Fatal(err) // if unable print Error
20     }
21
22     // Check the connection
23     err = client.Ping(context.TODO(), nil)
24
25     if err != nil {
26         log.Fatal(err)
27     }
28
29     fmt.Println("Connected to MongoDB!")
30     return client, err
31 }
32
```

The Folder .Xmlfiles has been added to give browser feasibility.

All the files can be accessed at:

<https://github.com/TSM-ArpitSG/InstagramAPI>