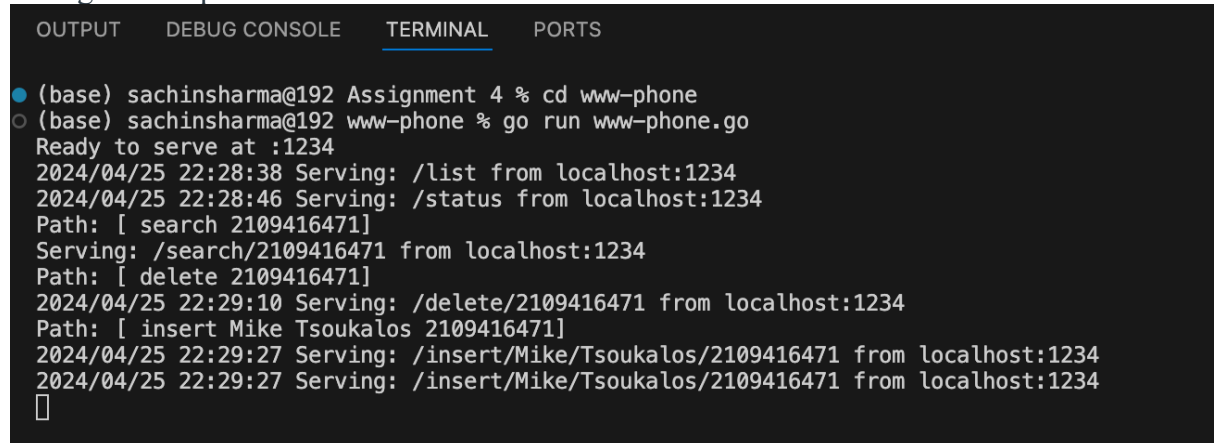


Assignment 4 - HTTP and REST API using Go

1. (12 Points) Run **handlers.go** and **www-phone.go** programs (make changes as necessary for your local machine)

I have corrected the handlers.go and www-phone.go program files. Attaching the below screenshot where we are running www-phone.go and performing the curl operations from another terminal.

Attaching readme document which contains details on all issues which we faced during the setup and how did we fixed them.

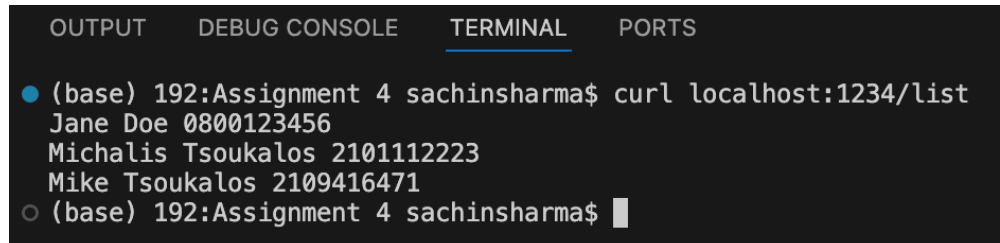


```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) sachinsharma@192 Assignment 4 % cd www-phone
○ (base) sachinsharma@192 www-phone % go run www-phone.go
Ready to serve at :1234
2024/04/25 22:28:38 Serving: /list from localhost:1234
2024/04/25 22:28:46 Serving: /status from localhost:1234
Path: [ search 2109416471]
Serving: /search/2109416471 from localhost:1234
Path: [ delete 2109416471]
2024/04/25 22:29:10 Serving: /delete/2109416471 from localhost:1234
Path: [ insert Mike Tsoukalos 2109416471]
2024/04/25 22:29:27 Serving: /insert/Mike/Tsoukalos/2109416471 from localhost:1234
2024/04/25 22:29:27 Serving: /insert/Mike/Tsoukalos/2109416471 from localhost:1234
█
```

Fig 1: Terminal screenshot of www-phone.go file

2. (12 Points) Use **curl** (download from <https://curl.se/download.html>) to execute the following commands from the command prompt

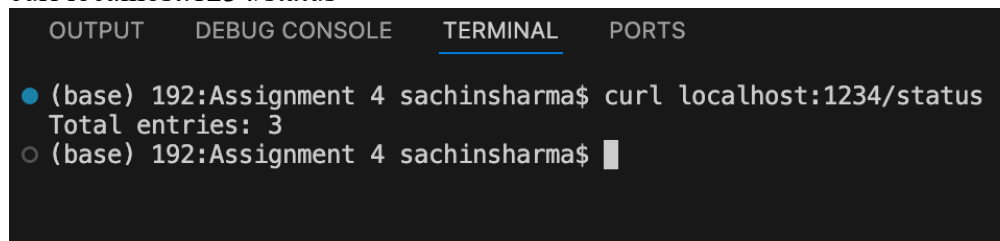
1. curl localhost:1234/list



```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) 192:Assignment 4 sachinsharma$ curl localhost:1234/list
Jane Doe 0800123456
Michalis Tsoukalos 2101112223
Mike Tsoukalos 2109416471
○ (base) 192:Assignment 4 sachinsharma$ █
```

Fig 2: Curl list command api records output

2. curl localhost:1234/status



```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) 192:Assignment 4 sachinsharma$ curl localhost:1234/status
Total entries: 3
○ (base) 192:Assignment 4 sachinsharma$ █
```

Fig 3: Curl status command api output

3. curl localhost:1234/search/2109416471

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

● (base) 192:Assignment 4 sachinsharma$ curl localhost:1234/search/2109416471
Mike Tsoukalos 2109416471
○ (base) 192:Assignment 4 sachinsharma$ █
```

Fig 4: Curl search record command api output

4. curl localhost:1234/delete/2109416471

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

● (base) 192:Assignment 4 sachinsharma$ curl localhost:1234/delete/2109416471
2109416471 deleted!
○ (base) 192:Assignment 4 sachinsharma$ █
```

Fig 5: Curl delete record command api output

5. curl localhost:1234/delete

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

● (base) sachinsharma@192 Assignment 4 % curl localhost:1234/delete
<a href="/delete/">Moved Permanently</a>.
○ (base) sachinsharma@192 Assignment 4 % █
```

Fig 6: Curl delete record command api output

6. curl localhost:1234/insert/Mike/Tsoukalos/2109416471

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

● (base) 192:Assignment 4 sachinsharma$ curl localhost:1234/insert/Mike/Tsoukalos/2109416471
New record added successfully
○ (base) 192:Assignment 4 sachinsharma$ █
```

Fig 7: Curl insert record command api output

3. (10 Points) Modify and run **handlers.go** and **www-phone.go** as follows:

1. Replace **Entry struct** with **MSDSCourse struct** that has course name, description, and prerequisite:
type NoEmpty struct {
Name string `json:"username"`
Surname string `json:"surname"`
Year int `json:"creationyear,omitempty"`
}

With

```
type MSDSCourse struct {  
CID string `json:"courseI_D`  
CNAME string `json:"course_name"`  
CPREREQ string `json:"prerequisite"`  
}
```

Replaced the Entry struct with the MSDSCourse struct. Attached below screenshot from modified handlers.go file.

```
13
14  type MSDSCourse struct {
15      CID      string
16      CNAME     string
17      CPREREQ   string
18      LastAccess string
19  }
20
```

Fig 8: MSDSCourse Struct code screenshot

2. Replace type PhoneBook []Entry with type MSDSCourseCatalog []MSDSCourse

Replaced the PhoneBook []Entry with MSDSCourseCatalog []MSDSCourse. Attached below screenshot of modified code from new handlers.go file.

```
14  type MSDSCourse struct {
15      CID      string
16      CNAME     string
17      CPREREQ   string
18      LastAccess string
19  }
20
21  // JSONFILE resides in the current directory
22  var CSVFILE = "./dataMSDS.csv"
23
24  type MSDSCourseCatalog []MSDSCourse
25
26  var data = MSDSCourseCatalog{}
```

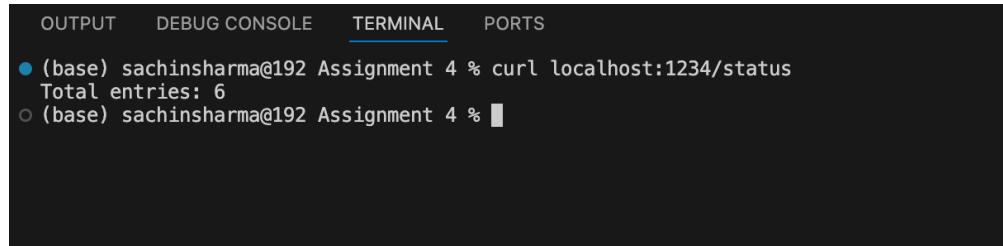
Fig 9: Updated MSDSCourse Struct and initialization code

4. (6 Points) Use curl to execute the following commands from the command prompt
 1. curl localhost:1234/list

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) sachinsharma@192 Assignment 4 % curl localhost:1234/list
MSDS422 PracticalMachineLearning MSDS400
MSDS453 NaturalLanguageProcessing MSDS422
MSDS460 DecisionAnalytics MSDS401
MSDS462 ComputerVision MSDS458
MSDS498 CapstoneProject MSDS453
MSDS432 FoundationsOfDataEngineering MSDS420
○ (base) sachinsharma@192 Assignment 4 %
```

Fig 10: Curl list records command api output with modified MSDSCourse Struct

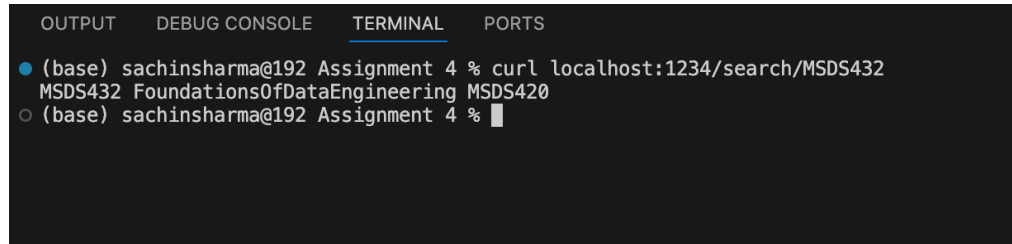
2. curl localhost:1234/status

A terminal window with a dark background and light-colored text. At the top, there are four tabs: 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected and underlined), and 'PORTS'. The terminal shows two lines of text. The first line is a command prompt followed by a blue dot, the user 'sachinsharma@192', the host 'Assignment 4', and the command '% curl localhost:1234/status'. The second line is the output 'Total entries: 6'. The third line is a new command prompt followed by a grey circle, the user 'sachinsharma@192', the host 'Assignment 4', and a cursor, indicating the command is ready to be entered.

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) sachinsharma@192 Assignment 4 % curl localhost:1234/status
Total entries: 6
○ (base) sachinsharma@192 Assignment 4 %
```

Fig 11: Curl status command api output with modified MSDSCourse Struct

3. curl localhost:1234/search/MSDS432

A terminal window with a dark background and light-colored text. At the top, there are four tabs: 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected and underlined), and 'PORTS'. The terminal shows two lines of text. The first line is a command prompt followed by a blue dot, the user 'sachinsharma@192', the host 'Assignment 4', and the command '% curl localhost:1234/search/MSDS432'. The second line is the output 'MSDS432 FoundationsOfDataEngineering MSDS420'. The third line is a new command prompt followed by a grey circle, the user 'sachinsharma@192', the host 'Assignment 4', and a cursor, indicating the command is ready to be entered.

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● (base) sachinsharma@192 Assignment 4 % curl localhost:1234/search/MSDS432
MSDS432 FoundationsOfDataEngineering MSDS420
○ (base) sachinsharma@192 Assignment 4 %
```

Fig 12: Curl search record command api output with modified MSDSCourse Struct