Manual

Ensuring Data Integrity in Autonomous Vehicles using Block-chain

EDIAVB:

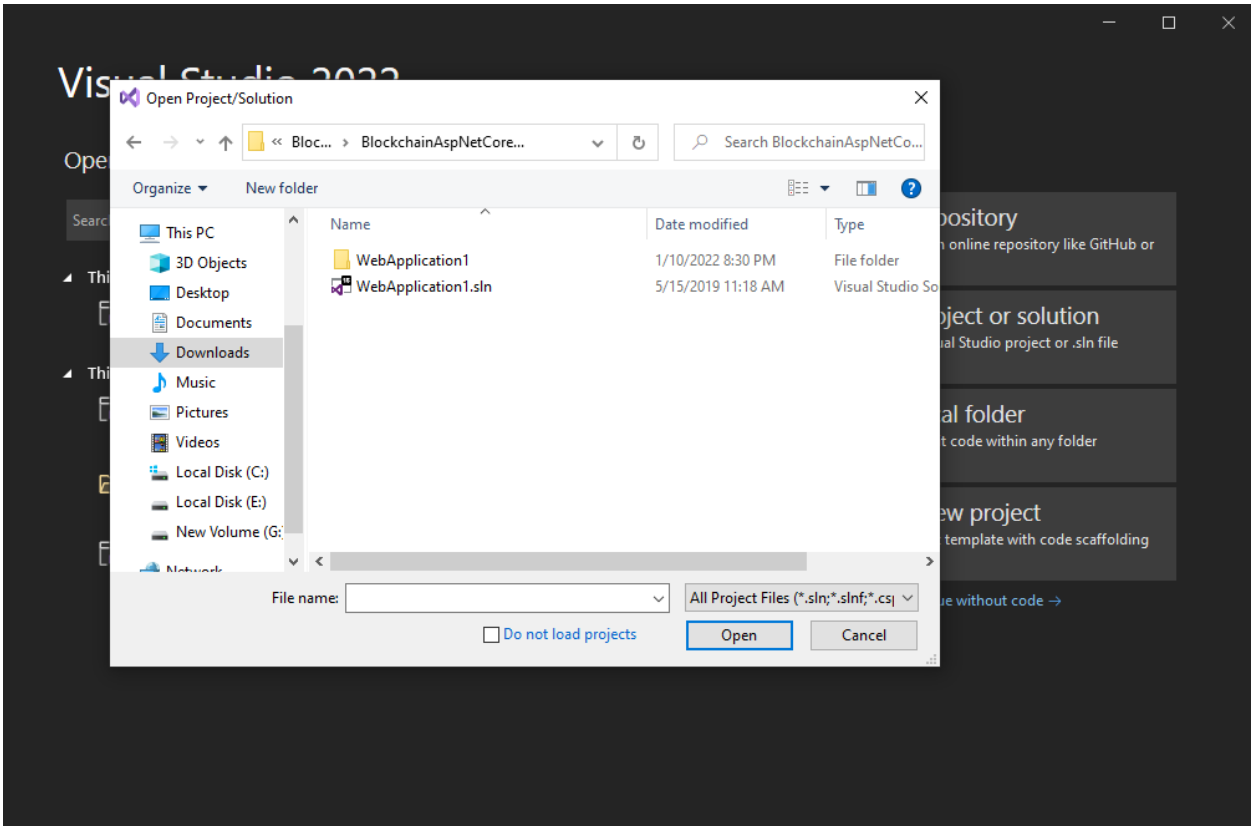
We have proposed a block chain based solution to ensure data integrity in autonomous vehicles. We have used visual studio as a coding platform and .netcore 2.1 framework to implement this solution.

Steps

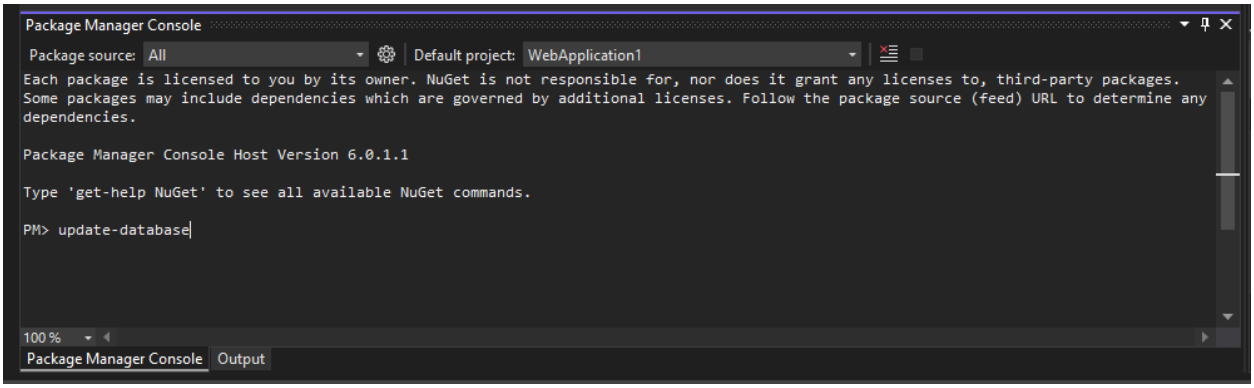
1- Download the .rar file from https://github.com/danishni/Ensuring-Data-Integrity-using-block-chain

2- Unzip it.

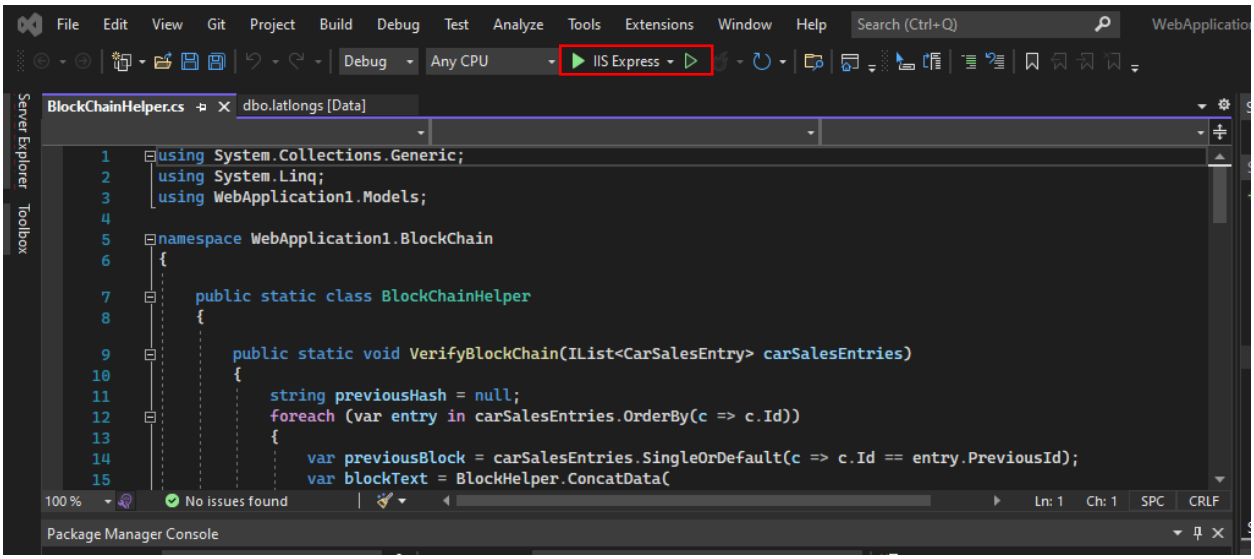
3- Open it in Visual Studio



4- Run Update-Database command in Project Manager Console.

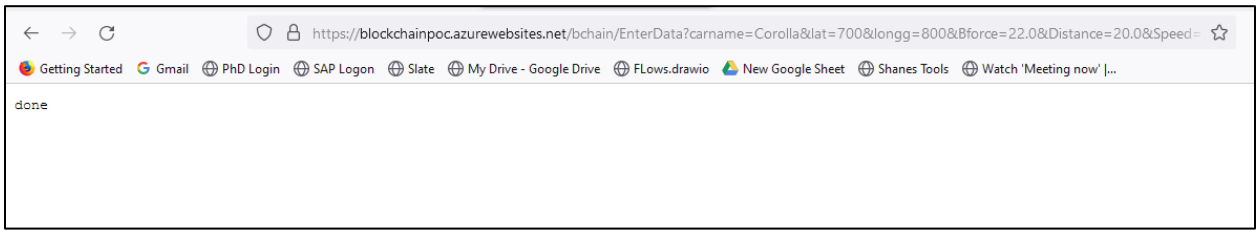


5-Run the project.



6- Use this API to Enter Data.

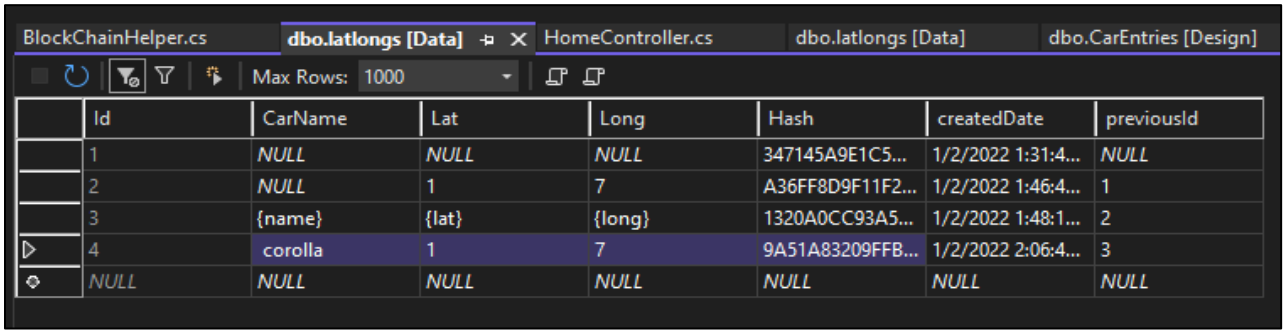
https://blockchainpoc.azurewebsites.net/bchain/EnterData?carname=Corolla&lat=700&longg=800&Bforce=22.0&Distance=20.0&Speed=25.0



7- Use this API to retrieve Data.

https://blockchainpoc.azurewebsites.net/bchain/GetData/[ID]

8- Changing Data.



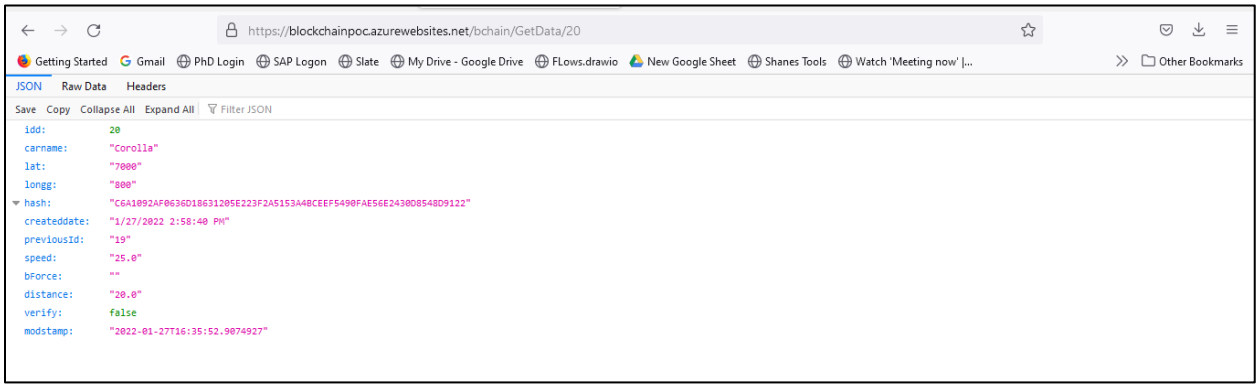
BlockChainHelper.cs | dbo.latlongs [Data] | HomeController.cs | dbo.latlongs [Data] | dbo.CarEntries [Design]

Max Rows: 1000

	Id	CarName	Lat	Long	Hash	createdDate	previousId
	1	NULL	NULL	NULL	347145A9E1C5...	1/2/2022 1:31:4...	NULL
	2	NULL	1	7	A36FF8D9F11F2...	1/2/2022 1:46:4...	1
	3	{name}	{lat}	{long}	1320A0CC93A5...	1/2/2022 1:48:1...	2
▷	4	corolla	1	7	9A51A83209FFB...	1/2/2022 2:06:4...	3
	NULL	NULL	NULL	NULL	NULL	NULL	NULL

9- Use this API to retrieve Data/ Validity false.

https://blockchainpoc.azurewebsites.net/bchain/GetData/[ID]



https://blockchainpoc.azurewebsites.net/bchain/GetData/20

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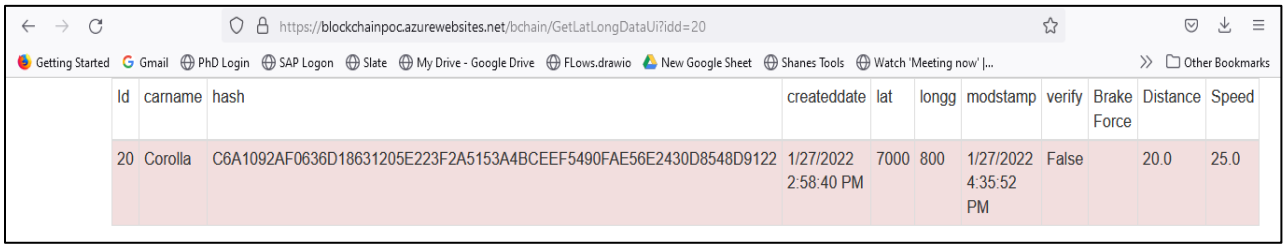
JSON | Raw Data | Headers

Save | Copy | Collapse All | Expand All | Filter JSON


```
idd:          20
carname:      "Corolla"
lat:          "7000"
longg:        "800"
hash:         "C6A1092AF0636D18631205E223F2A5153A4BCEEF5490FAE56E2430D8548D9122"
createddate:  "1/27/2022 2:58:40 PM"
previousId:   "19"
speed:        "25.0"
bForce:       ""
distance:     "20.0"
verify:       false
modstamp:     "2022-01-27T16:35:52.9074927"
```


10- API for UI.

https://blockchainpoc.azurewebsites.net/bchain/GetLatLongDataUi?idd=16



https://blockchainpoc.azurewebsites.net/bchain/GetLatLongDataUi?idd=20

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Id	carname	hash	createddate	lat	longg	modstamp	verify	Brake Force	Distance	Speed
20	Corolla	C6A1092AF0636D18631205E223F2A5153A4BCEEF5490FAE56E2430D8548D9122	1/27/2022 2:58:40 PM	7000	800	1/27/2022 4:35:52 PM	False		20.0	25.0