Training for CA_3
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 66ms/step - loss: 0.5419 - val_loss: 0.5697
Epoch 2/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4682 - val_loss: 0.4566
Epoch 3/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4276 - val_loss: 0.4100
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3974 - val_loss: 0.4263
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3815 - val_loss: 0.4381
Epoch 6/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3769 - val_loss: 0.4285
Epoch 7/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3653 - val_loss: 0.4386
Epoch 8/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3651 - val_loss: 0.4494
Epoch 9/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3603 - val_loss: 0.4588
Epoch 10/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3571 - val_loss: 0.4606
Epoch 11/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3578 - val_loss: 0.4593
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3572 - val_loss: 0.4367
Epoch 13/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3528 - val_loss: 0.4372
Epoch 14/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3523 - val_loss: 0.4378
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3484 - val_loss: 0.4357
Epoch 16/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3499 - val_loss: 0.4353
Epoch 17/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3439 - val_loss: 0.4428
Epoch 18/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3485 - val_loss: 0.4335
Epoch 19/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3424 - val_loss: 0.4396
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3423 - val_loss: 0.4350
Epoch 21/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3405 - val_loss: 0.4386

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Epoch 22/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3369 - val_loss: 0.4409
Epoch 23/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3378 - val_loss: 0.4472
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3383 - val_loss: 0.4406
Epoch 25/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3333 - val_loss: 0.4455
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3332 - val_loss: 0.4548
Epoch 27/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3315 - val_loss: 0.4417
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3293 - val_loss: 0.4510
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3294 - val_loss: 0.4487
Epoch 30/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3250 - val_loss: 0.4466
Epoch 31/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3274 - val_loss: 0.4564
Epoch 32/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3234 - val_loss: 0.4504
Epoch 33/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3220 - val_loss: 0.4448
Epoch 34/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3191 - val_loss: 0.4416
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3216 - val_loss: 0.4479
Epoch 36/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3187 - val_loss: 0.4442
Epoch 37/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3148 - val_loss: 0.4563
Epoch 38/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3158 - val_loss: 0.4494
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3134 - val_loss: 0.4474
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3130 - val_loss: 0.4456
Epoch 41/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3106 - val_loss: 0.4550
Epoch 42/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3072 - val_loss: 0.4610
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3098 - val_loss: 0.4502
Epoch 44/100
```

```
50/50 [==============================] - 3s 56ms/step - loss: 0.3052 - val_loss: 0.4731
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3055 - val_loss: 0.4508
Epoch 46/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3055 - val_loss: 0.4448
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3012 - val_loss: 0.4584
Epoch 48/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2999 - val_loss: 0.4500
Epoch 49/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3011 - val_loss: 0.4525
Epoch 50/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3006 - val_loss: 0.4615
Epoch 51/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2986 - val_loss: 0.4620
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2978 - val_loss: 0.4681
Epoch 53/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2958 - val_loss: 0.4620
Epoch 54/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2952 - val_loss: 0.4642
Epoch 55/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2947 - val_loss: 0.4743
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2937 - val_loss: 0.4737
Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2894 - val_loss: 0.4650
Epoch 58/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2923 - val_loss: 0.4705
Epoch 59/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2887 - val_loss: 0.4709
Epoch 60/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2865 - val_loss: 0.4686
Epoch 61/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2855 - val_loss: 0.4754
Epoch 62/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2862 - val_loss: 0.4751
Epoch 63/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2870 - val_loss: 0.4733
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2825 - val_loss: 0.4725
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2807 - val_loss: 0.4736
Epoch 66/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2794 - val_loss: 0.4716
```

```
Epoch 67/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2816 - val_loss: 0.4775
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2768 - val_loss: 0.4724
Epoch 69/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2731 - val_loss: 0.4785
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2772 - val_loss: 0.4737
Epoch 71/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2768 - val_loss: 0.4861
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2714 - val_loss: 0.4786
Epoch 73/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2707 - val_loss: 0.4874
Epoch 74/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2717 - val_loss: 0.4865
Epoch 75/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2675 - val_loss: 0.4840
Epoch 76/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2706 - val_loss: 0.4751
Epoch 77/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2659 - val_loss: 0.4998
Epoch 78/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2671 - val_loss: 0.4837
Epoch 79/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2649 - val_loss: 0.4775
Epoch 80/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2647 - val_loss: 0.4895
Epoch 81/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2607 - val_loss: 0.4805
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2628 - val_loss: 0.4898
Epoch 83/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2585 - val_loss: 0.4971
Epoch 84/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2590 - val_loss: 0.4863
Epoch 85/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2571 - val_loss: 0.4884
Epoch 86/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2577 - val_loss: 0.4842
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2560 - val_loss: 0.5002
Epoch 88/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2522 - val_loss: 0.4898
Epoch 89/100
```

```
50/50 [==============================] - 3s 56ms/step - loss: 0.2525 - val_loss: 0.4928
Epoch 90/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2517 - val_loss: 0.4953
Epoch 91/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2504 - val_loss: 0.5033
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2512 - val_loss: 0.4939
Epoch 93/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2448 - val_loss: 0.4972
Epoch 94/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2498 - val_loss: 0.4947
Epoch 95/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2448 - val_loss: 0.5028
Epoch 96/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2449 - val_loss: 0.4973
Epoch 97/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2428 - val_loss: 0.4911
Epoch 98/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2426 - val_loss: 0.5030
Epoch 99/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2429 - val_loss: 0.5020
Epoch 100/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2400 - val_loss: 0.5049
```


Single Step Training and validation loss for CA_3

Single Step Prediction for CA_3
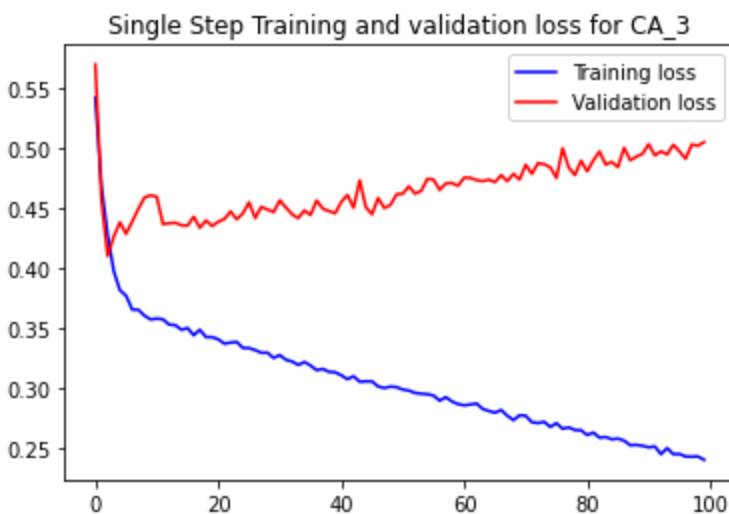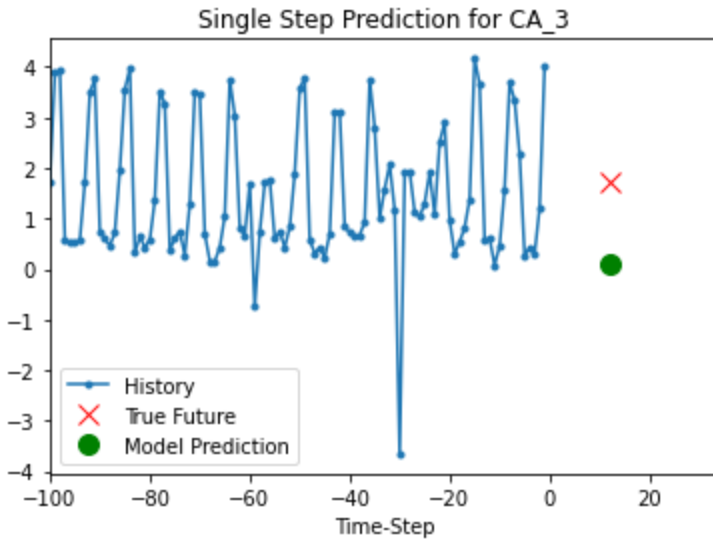
CA_3 - True Future: 7921
CA_3 - Model Prediction: 5938
CA_3 - Model Percentage Error: 25.03%
====================================
====================================
Training for CA_4
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 68ms/step - loss: 0.5381 - val_loss: 0.4870
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4240 - val_loss: 0.4425
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4003 - val_loss: 0.4262
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3852 - val_loss: 0.4187
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3736 - val_loss: 0.4134
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3702 - val_loss: 0.4265
Epoch 7/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3663 - val_loss: 0.4000
Epoch 8/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3616 - val_loss: 0.4099
Epoch 9/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3621 - val_loss: 0.4016
Epoch 10/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3576 - val_loss: 0.3935
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3581 - val_loss: 0.3925

```
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3579 - val_loss: 0.3931
Epoch 13/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3570 - val_loss: 0.3962
Epoch 14/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3547 - val_loss: 0.3886
Epoch 15/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3532 - val_loss: 0.3949
Epoch 16/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3557 - val_loss: 0.3855
Epoch 17/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3501 - val_loss: 0.3924
Epoch 18/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3504 - val_loss: 0.3881
Epoch 19/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3518 - val_loss: 0.3861
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3480 - val_loss: 0.3874
Epoch 21/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3498 - val_loss: 0.3942
Epoch 22/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3449 - val_loss: 0.3964
Epoch 23/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3466 - val_loss: 0.3959
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3473 - val_loss: 0.3864
Epoch 25/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3416 - val_loss: 0.3811
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3438 - val_loss: 0.3949
Epoch 27/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3415 - val_loss: 0.3837
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3448 - val_loss: 0.3829
Epoch 29/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3387 - val_loss: 0.3925
Epoch 30/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3364 - val_loss: 0.4037
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3390 - val_loss: 0.3907
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3364 - val_loss: 0.3930
Epoch 33/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3338 - val_loss: 0.3883
Epoch 34/100
```

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50/50 [==============================] - 3s 55ms/step - loss: 0.3334 - val_loss: 0.4031
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3322 - val_loss: 0.3885
Epoch 36/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3310 - val_loss: 0.3915
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3277 - val_loss: 0.3919
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3305 - val_loss: 0.3954
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3270 - val_loss: 0.3973
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3271 - val_loss: 0.3997
Epoch 41/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3245 - val_loss: 0.3934
Epoch 42/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3244 - val_loss: 0.3935
Epoch 43/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3215 - val_loss: 0.3965
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3197 - val_loss: 0.4181
Epoch 45/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3208 - val_loss: 0.4050
Epoch 46/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3182 - val_loss: 0.3924
Epoch 47/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3187 - val_loss: 0.4053
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3157 - val_loss: 0.4059
Epoch 49/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3188 - val_loss: 0.4196
Epoch 50/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3149 - val_loss: 0.4125
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3137 - val_loss: 0.4115
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3156 - val_loss: 0.4097
Epoch 53/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3121 - val_loss: 0.4291
Epoch 54/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3136 - val_loss: 0.4294
Epoch 55/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3105 - val_loss: 0.4080
Epoch 56/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3106 - val_loss: 0.4232
```

```
Epoch 57/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3085 - val_loss: 0.4254
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3125 - val_loss: 0.4424
Epoch 59/100
50/50 [==============================] - 3s 60ms/step - loss: 0.3057 - val_loss: 0.4320
Epoch 60/100
50/50 [==============================] - 4s 85ms/step - loss: 0.3085 - val_loss: 0.4206
Epoch 61/100
50/50 [==============================] - 4s 73ms/step - loss: 0.3040 - val_loss: 0.4130
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3078 - val_loss: 0.4415
Epoch 63/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3046 - val_loss: 0.4176
Epoch 64/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3031 - val_loss: 0.4566
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3045 - val_loss: 0.4627
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3012 - val_loss: 0.4303
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3015 - val_loss: 0.4220
Epoch 68/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3018 - val_loss: 0.4256
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3009 - val_loss: 0.4467
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2972 - val_loss: 0.4400
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2982 - val_loss: 0.4280
Epoch 72/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2953 - val_loss: 0.4481
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2949 - val_loss: 0.4452
Epoch 74/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2958 - val_loss: 0.4500
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2918 - val_loss: 0.4330
Epoch 76/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2923 - val_loss: 0.4509
Epoch 77/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2928 - val_loss: 0.4449
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2913 - val_loss: 0.4540
Epoch 79/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2912 - val_loss: 0.4412
Epoch 80/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2881 - val_loss: 0.4413
Epoch 81/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2862 - val_loss: 0.4317
Epoch 82/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2872 - val_loss: 0.4335
Epoch 83/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2848 - val_loss: 0.4414
Epoch 84/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2847 - val_loss: 0.4545
Epoch 85/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2827 - val_loss: 0.4375
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2851 - val_loss: 0.4455
Epoch 87/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2811 - val_loss: 0.4478
Epoch 88/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2834 - val_loss: 0.4361
Epoch 89/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2790 - val_loss: 0.4386
Epoch 90/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2798 - val_loss: 0.4386
Epoch 91/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2788 - val_loss: 0.4470
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2781 - val_loss: 0.4399
Epoch 93/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2736 - val_loss: 0.4469
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2763 - val_loss: 0.4582
Epoch 95/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2760 - val_loss: 0.4506
Epoch 96/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2728 - val_loss: 0.4551
Epoch 97/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2726 - val_loss: 0.4562
Epoch 98/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2729 - val_loss: 0.4559
Epoch 99/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2705 - val_loss: 0.4644
Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2708 - val_loss: 0.4494
```

Single Step Training and validation loss for CA_4

Single Step Prediction for CA_4
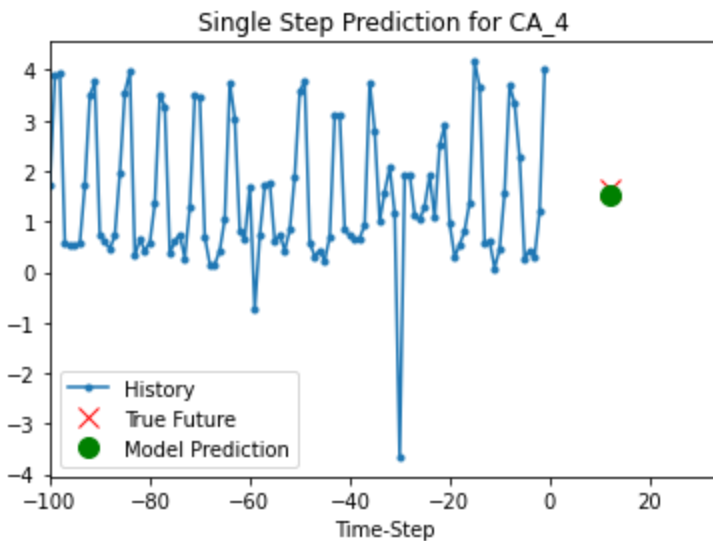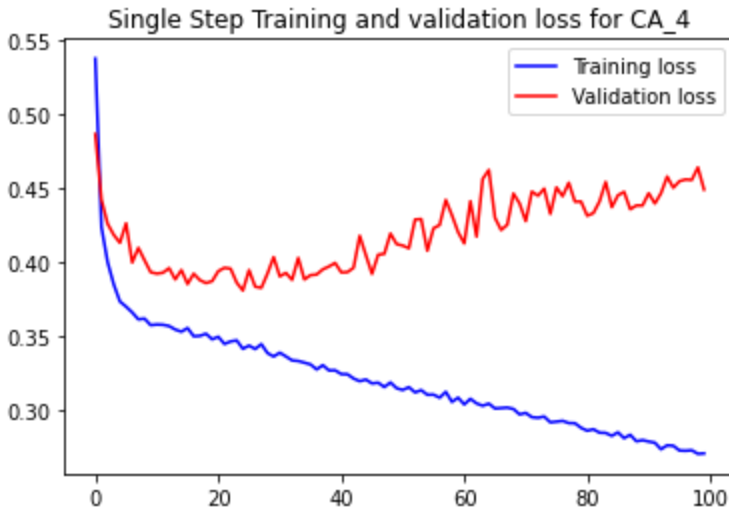
CA_4 - True Future: 2799
CA_4 - Model Prediction: 2753
CA_4 - Model Percentage Error: 1.64%
===================================
===================================
Training for CA_1
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 62ms/step - loss: 0.6393 - val_loss: 0.6260
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5085 - val_loss: 0.4731
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4196 - val_loss: 0.4450
Epoch 4/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3723 - val_loss: 0.4463

```
Epoch 5/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3604 - val_loss: 0.4382
Epoch 6/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3520 - val_loss: 0.4416
Epoch 7/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3446 - val_loss: 0.4465
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3427 - val_loss: 0.4483
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3394 - val_loss: 0.4637
Epoch 10/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3363 - val_loss: 0.4504
Epoch 11/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3363 - val_loss: 0.4615
Epoch 12/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3309 - val_loss: 0.4534
Epoch 13/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3313 - val_loss: 0.4530
Epoch 14/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3296 - val_loss: 0.4515
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3280 - val_loss: 0.4469
Epoch 16/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3288 - val_loss: 0.4556
Epoch 17/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3243 - val_loss: 0.4509
Epoch 18/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3239 - val_loss: 0.4371
Epoch 19/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3253 - val_loss: 0.4504
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3222 - val_loss: 0.4481
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3219 - val_loss: 0.4390
Epoch 22/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3214 - val_loss: 0.4474
Epoch 23/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3206 - val_loss: 0.4450
Epoch 24/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3189 - val_loss: 0.4399
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3188 - val_loss: 0.4499
Epoch 26/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3182 - val_loss: 0.4503
Epoch 27/100
```

```
50/50 [==============================] - 3s 54ms/step - loss: 0.3166 - val_loss: 0.4570
Epoch 28/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3167 - val_loss: 0.4467
Epoch 29/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3168 - val_loss: 0.4458
Epoch 30/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3130 - val_loss: 0.4384
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3127 - val_loss: 0.4389
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3130 - val_loss: 0.4397
Epoch 33/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3117 - val_loss: 0.4409
Epoch 34/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3126 - val_loss: 0.4346
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3133 - val_loss: 0.4363
Epoch 36/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3086 - val_loss: 0.4364
Epoch 37/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3073 - val_loss: 0.4448
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3099 - val_loss: 0.4356
Epoch 39/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3086 - val_loss: 0.4339
Epoch 40/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3078 - val_loss: 0.4427
Epoch 41/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3054 - val_loss: 0.4386
Epoch 42/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3068 - val_loss: 0.4433
Epoch 43/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3030 - val_loss: 0.4432
Epoch 44/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3046 - val_loss: 0.4426
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3049 - val_loss: 0.4406
Epoch 46/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3013 - val_loss: 0.4440
Epoch 47/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3033 - val_loss: 0.4461
Epoch 48/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3020 - val_loss: 0.4453
Epoch 49/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2981 - val_loss: 0.4501
```

```
Epoch 50/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2990 - val_loss: 0.4534
Epoch 51/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3000 - val_loss: 0.4531
Epoch 52/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2981 - val_loss: 0.4505
Epoch 53/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2967 - val_loss: 0.4500
Epoch 54/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2968 - val_loss: 0.4548
Epoch 55/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2966 - val_loss: 0.4587
Epoch 56/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2941 - val_loss: 0.4660
Epoch 57/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2934 - val_loss: 0.4605
Epoch 58/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2921 - val_loss: 0.4519
Epoch 59/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2909 - val_loss: 0.4573
Epoch 60/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2893 - val_loss: 0.4569
Epoch 61/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2910 - val_loss: 0.4588
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2907 - val_loss: 0.4670
Epoch 63/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2867 - val_loss: 0.4576
Epoch 64/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2840 - val_loss: 0.4585
Epoch 65/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2867 - val_loss: 0.4639
Epoch 66/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2858 - val_loss: 0.4670
Epoch 67/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2820 - val_loss: 0.4713
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2834 - val_loss: 0.4681
Epoch 69/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2802 - val_loss: 0.4832
Epoch 70/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2799 - val_loss: 0.4848
Epoch 71/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2774 - val_loss: 0.4925
Epoch 72/100
```

```
50/50 [==============================] - 3s 54ms/step - loss: 0.2767 - val_loss: 0.4927
Epoch 73/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2762 - val_loss: 0.4939
Epoch 74/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2741 - val_loss: 0.4909
Epoch 75/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2755 - val_loss: 0.5082
Epoch 76/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2730 - val_loss: 0.5409
Epoch 77/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2709 - val_loss: 0.5129
Epoch 78/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2724 - val_loss: 0.5125
Epoch 79/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2702 - val_loss: 0.5271
Epoch 80/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2681 - val_loss: 0.5304
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2666 - val_loss: 0.5422
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2690 - val_loss: 0.5447
Epoch 83/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2653 - val_loss: 0.5337
Epoch 84/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2636 - val_loss: 0.5700
Epoch 85/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2636 - val_loss: 0.5377
Epoch 86/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2634 - val_loss: 0.5562
Epoch 87/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2620 - val_loss: 0.5312
Epoch 88/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2609 - val_loss: 0.5542
Epoch 89/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2608 - val_loss: 0.5757
Epoch 90/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2581 - val_loss: 0.5716
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2549 - val_loss: 0.5757
Epoch 92/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2573 - val_loss: 0.5740
Epoch 93/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2545 - val_loss: 0.5819
Epoch 94/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2524 - val_loss: 0.5739
```

```
Epoch 95/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2528 - val_loss: 0.5587
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2487 - val_loss: 0.5720
Epoch 97/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2513 - val_loss: 0.5727
Epoch 98/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2497 - val_loss: 0.5725
Epoch 99/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2489 - val_loss: 0.5862
Epoch 100/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2470 - val_loss: 0.5796
```

Single Step Training and validation loss for CA_1

Single Step Prediction for CA_1
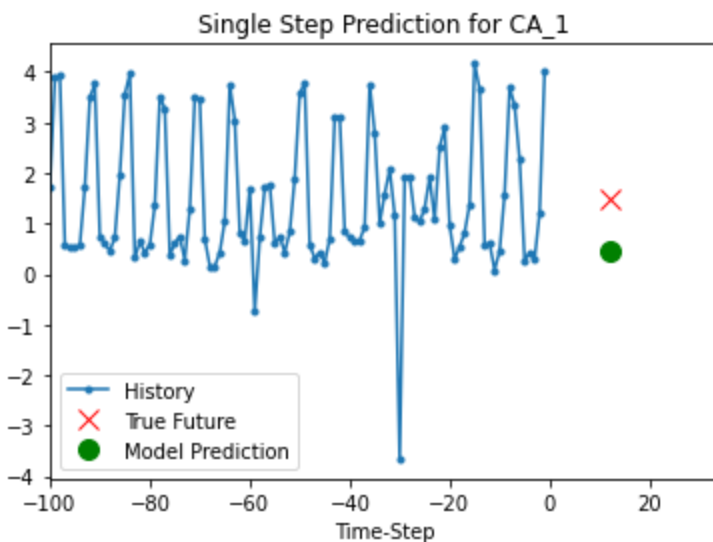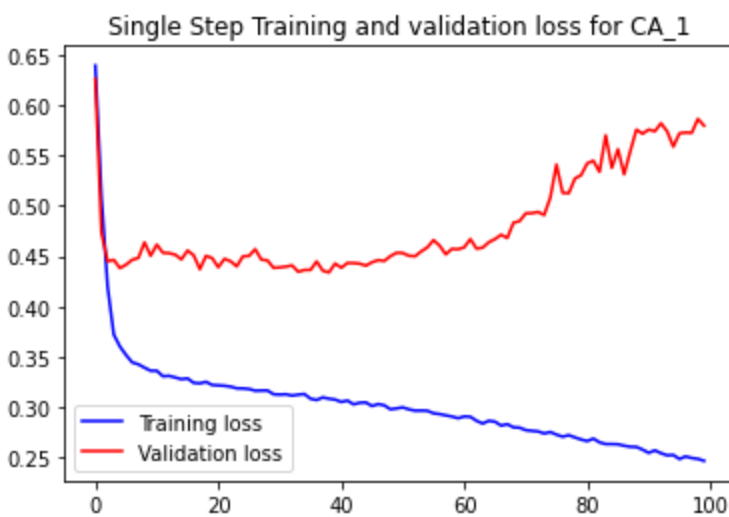
CA_1 - True Future: 5483
CA_1 - Model Prediction: 4453
CA_1 - Model Percentage Error: 18.79%

```
===================================
===================================
Training for CA_2
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 69ms/step - loss: 0.6160 - val_loss: 0.9605
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4834 - val_loss: 0.7978
Epoch 3/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3936 - val_loss: 0.6882
Epoch 4/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3509 - val_loss: 0.6313
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3348 - val_loss: 0.6174
Epoch 6/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3278 - val_loss: 0.6123
Epoch 7/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3273 - val_loss: 0.6004
Epoch 8/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3226 - val_loss: 0.5964
Epoch 9/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3246 - val_loss: 0.5954
Epoch 10/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3214 - val_loss: 0.5953
Epoch 11/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3167 - val_loss: 0.5977
Epoch 12/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3170 - val_loss: 0.5937
Epoch 13/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3161 - val_loss: 0.5962
Epoch 14/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3135 - val_loss: 0.5945
Epoch 15/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3129 - val_loss: 0.5895
Epoch 16/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3109 - val_loss: 0.5963
Epoch 17/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3097 - val_loss: 0.5861
Epoch 18/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3068 - val_loss: 0.5893
Epoch 19/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3061 - val_loss: 0.5865
Epoch 20/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3044 - val_loss: 0.5971
```

```
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3034 - val_loss: 0.5854
Epoch 22/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3019 - val_loss: 0.5851
Epoch 23/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3013 - val_loss: 0.5808
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3005 - val_loss: 0.5824
Epoch 25/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2956 - val_loss: 0.5785
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2960 - val_loss: 0.5812
Epoch 27/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2942 - val_loss: 0.5802
Epoch 28/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2950 - val_loss: 0.5805
Epoch 29/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2895 - val_loss: 0.5834
Epoch 30/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2904 - val_loss: 0.5925
Epoch 31/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2874 - val_loss: 0.5909
Epoch 32/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2846 - val_loss: 0.6656
Epoch 33/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2832 - val_loss: 0.5992
Epoch 34/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2848 - val_loss: 0.5941
Epoch 35/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2787 - val_loss: 0.5891
Epoch 36/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2780 - val_loss: 0.5893
Epoch 37/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2775 - val_loss: 0.5995
Epoch 38/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2788 - val_loss: 0.5886
Epoch 39/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2754 - val_loss: 0.5824
Epoch 40/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2734 - val_loss: 0.6142
Epoch 41/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2754 - val_loss: 0.5975
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2707 - val_loss: 0.6057
Epoch 43/100
```

```
50/50 [==============================] - 3s 57ms/step - loss: 0.2741 - val_loss: 0.6087
Epoch 44/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2690 - val_loss: 0.6016
Epoch 45/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2689 - val_loss: 0.5799
Epoch 46/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2695 - val_loss: 0.5964
Epoch 47/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2673 - val_loss: 0.5847
Epoch 48/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2677 - val_loss: 0.6165
Epoch 49/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2638 - val_loss: 0.6012
Epoch 50/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2681 - val_loss: 0.5985
Epoch 51/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2632 - val_loss: 0.5886
Epoch 52/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2655 - val_loss: 0.5977
Epoch 53/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2633 - val_loss: 0.6104
Epoch 54/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2631 - val_loss: 0.5991
Epoch 55/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2607 - val_loss: 0.6001
Epoch 56/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2621 - val_loss: 0.6073
Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2602 - val_loss: 0.5916
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2595 - val_loss: 0.5945
Epoch 59/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2598 - val_loss: 0.6073
Epoch 60/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2578 - val_loss: 0.6064
Epoch 61/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2574 - val_loss: 0.6064
Epoch 62/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2557 - val_loss: 0.5861
Epoch 63/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2572 - val_loss: 0.5907
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2581 - val_loss: 0.5959
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2534 - val_loss: 0.5797
```

```
Epoch 66/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2559 - val_loss: 0.5844
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2513 - val_loss: 0.5849
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2528 - val_loss: 0.5889
Epoch 69/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2521 - val_loss: 0.5787
Epoch 70/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2517 - val_loss: 0.5953
Epoch 71/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2525 - val_loss: 0.5882
Epoch 72/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2503 - val_loss: 0.5960
Epoch 73/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2521 - val_loss: 0.5795
Epoch 74/100
50/50 [==============================] - 4s 85ms/step - loss: 0.2461 - val_loss: 0.5961
Epoch 75/100
50/50 [==============================] - 4s 76ms/step - loss: 0.2500 - val_loss: 0.5999
Epoch 76/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2493 - val_loss: 0.6126
Epoch 77/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2495 - val_loss: 0.6109
Epoch 78/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2482 - val_loss: 0.5893
Epoch 79/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2465 - val_loss: 0.6324
Epoch 80/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2490 - val_loss: 0.6157
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2439 - val_loss: 0.6015
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2450 - val_loss: 0.6856
Epoch 83/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2457 - val_loss: 0.6295
Epoch 84/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2434 - val_loss: 0.6726
Epoch 85/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2437 - val_loss: 0.7072
Epoch 86/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2434 - val_loss: 0.7135
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2428 - val_loss: 0.7238
Epoch 88/100
```

```
50/50 [==============================] - 3s 57ms/step - loss: 0.2434 - val_loss: 0.7337
Epoch 89/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2419 - val_loss: 0.7536
Epoch 90/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2418 - val_loss: 0.7750
Epoch 91/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2396 - val_loss: 0.7562
Epoch 92/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2382 - val_loss: 0.7287
Epoch 93/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2419 - val_loss: 0.7660
Epoch 94/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2382 - val_loss: 0.7857
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2384 - val_loss: 0.8242
Epoch 96/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2369 - val_loss: 0.7763
Epoch 97/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2376 - val_loss: 0.7984
Epoch 98/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2354 - val_loss: 0.7483
Epoch 99/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2342 - val_loss: 0.7764
Epoch 100/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2364 - val_loss: 0.7721
```


Single Step Training and validation loss for CA_2

Single Step Prediction for CA_2
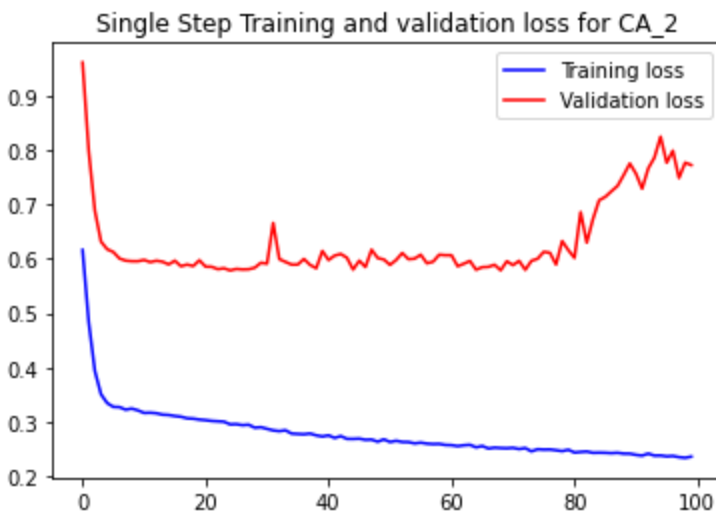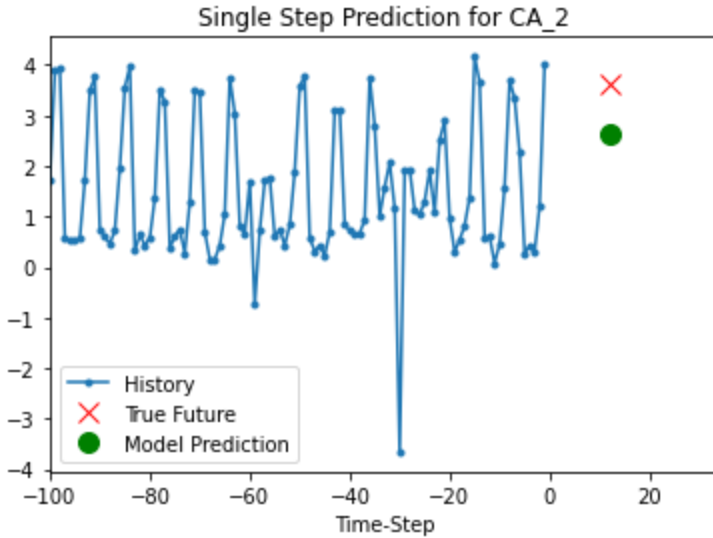
CA_2 - True Future: 5645
CA_2 - Model Prediction: 4889
CA_2 - Model Percentage Error: 13.39%
====================================
====================================
Training for TX_1
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 62ms/step - loss: 0.6889 - val_loss: 0.6353
Epoch 2/100
50/50 [==============================] - 3s 54ms/step - loss: 0.6199 - val_loss: 0.5732
Epoch 3/100
50/50 [==============================] - 3s 53ms/step - loss: 0.5755 - val_loss: 0.5221
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5396 - val_loss: 0.4993
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5132 - val_loss: 0.4728
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4940 - val_loss: 0.4588
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4791 - val_loss: 0.4396
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4663 - val_loss: 0.4166
Epoch 9/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4546 - val_loss: 0.4435
Epoch 10/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4421 - val_loss: 0.4209
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4377 - val_loss: 0.4206

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Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4314 - val_loss: 0.4131
Epoch 13/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4282 - val_loss: 0.4034
Epoch 14/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4264 - val_loss: 0.4427
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4238 - val_loss: 0.4252
Epoch 16/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4222 - val_loss: 0.4269
Epoch 17/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4195 - val_loss: 0.4307
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4194 - val_loss: 0.4118
Epoch 19/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4159 - val_loss: 0.4328
Epoch 20/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4153 - val_loss: 0.4127
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4123 - val_loss: 0.4022
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4102 - val_loss: 0.4285
Epoch 23/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4155 - val_loss: 0.4304
Epoch 24/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4057 - val_loss: 0.4580
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4043 - val_loss: 0.4234
Epoch 26/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4061 - val_loss: 0.4331
Epoch 27/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4020 - val_loss: 0.4436
Epoch 28/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4006 - val_loss: 0.4438
Epoch 29/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3980 - val_loss: 0.4357
Epoch 30/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3975 - val_loss: 0.4622
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3938 - val_loss: 0.4454
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3918 - val_loss: 0.4525
Epoch 33/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3905 - val_loss: 0.4591
Epoch 34/100
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50/50 [==============================] - 3s 57ms/step - loss: 0.3879 - val_loss: 0.4718
Epoch 35/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3855 - val_loss: 0.4581
Epoch 36/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3819 - val_loss: 0.4723
Epoch 37/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3859 - val_loss: 0.4601
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3791 - val_loss: 0.4579
Epoch 39/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3763 - val_loss: 0.4749
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3754 - val_loss: 0.4525
Epoch 41/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3759 - val_loss: 0.4504
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3713 - val_loss: 0.4686
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3696 - val_loss: 0.4584
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3707 - val_loss: 0.4203
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3695 - val_loss: 0.3759
Epoch 46/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3639 - val_loss: 0.4187
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3653 - val_loss: 0.4153
Epoch 48/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3620 - val_loss: 0.3852
Epoch 49/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3617 - val_loss: 0.3971
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3581 - val_loss: 0.4338
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3588 - val_loss: 0.4161
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3560 - val_loss: 0.4171
Epoch 53/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3533 - val_loss: 0.4064
Epoch 54/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3523 - val_loss: 0.4016
Epoch 55/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3516 - val_loss: 0.4388
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3476 - val_loss: 0.4144
```

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Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3466 - val_loss: 0.4269
Epoch 58/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3439 - val_loss: 0.4100
Epoch 59/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3441 - val_loss: 0.4095
Epoch 60/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3443 - val_loss: 0.4327
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3405 - val_loss: 0.4312
Epoch 62/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3384 - val_loss: 0.4178
Epoch 63/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3426 - val_loss: 0.4027
Epoch 64/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3355 - val_loss: 0.4161
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3367 - val_loss: 0.4310
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3357 - val_loss: 0.3903
Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3289 - val_loss: 0.4037
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3357 - val_loss: 0.4211
Epoch 69/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3333 - val_loss: 0.3900
Epoch 70/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3280 - val_loss: 0.4058
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3294 - val_loss: 0.4094
Epoch 72/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3270 - val_loss: 0.4104
Epoch 73/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3265 - val_loss: 0.4243
Epoch 74/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3259 - val_loss: 0.4158
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3210 - val_loss: 0.4197
Epoch 76/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3224 - val_loss: 0.4167
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3247 - val_loss: 0.4172
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3189 - val_loss: 0.4347
Epoch 79/100
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50/50 [==============================] - 3s 55ms/step - loss: 0.3180 - val_loss: 0.4184
Epoch 80/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3163 - val_loss: 0.4121
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3193 - val_loss: 0.4366
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3138 - val_loss: 0.4351
Epoch 83/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3173 - val_loss: 0.4255
Epoch 84/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3127 - val_loss: 0.4347
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3137 - val_loss: 0.4304
Epoch 86/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3102 - val_loss: 0.4431
Epoch 87/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3107 - val_loss: 0.4473
Epoch 88/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3083 - val_loss: 0.4376
Epoch 89/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3057 - val_loss: 0.4385
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3081 - val_loss: 0.4362
Epoch 91/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3054 - val_loss: 0.4702
Epoch 92/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3030 - val_loss: 0.4685
Epoch 93/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3017 - val_loss: 0.4833
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3001 - val_loss: 0.5142
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3028 - val_loss: 0.4885
Epoch 96/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2973 - val_loss: 0.4760
Epoch 97/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2999 - val_loss: 0.4973
Epoch 98/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2957 - val_loss: 0.5323
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2991 - val_loss: 0.4739
Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2958 - val_loss: 0.4957
```

Single Step Prediction for TX_1
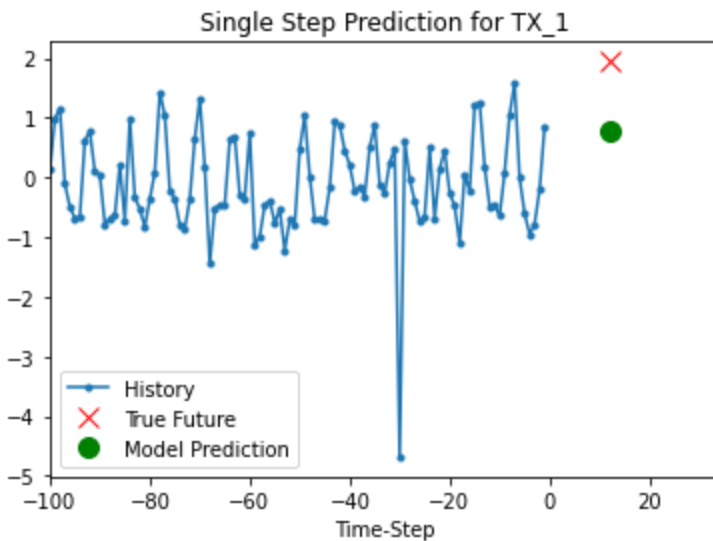
TX_1 - True Future: 4107
TX_1 - Model Prediction: 3396
TX_1 - Model Percentage Error: 17.31%
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Training for TX_3
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 4s 71ms/step - loss: 0.6040 - val_loss: 0.5371
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5460 - val_loss: 0.5136
Epoch 3/100
50/50 [==============================] - 3s 54ms/step - loss: 0.5177 - val_loss: 0.4722
Epoch 4/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4801 - val_loss: 0.4358
Epoch 5/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4534 - val_loss: 0.4202
Epoch 6/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4377 - val_loss: 0.4094
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4235 - val_loss: 0.4182
Epoch 8/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4180 - val_loss: 0.4006
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4115 - val_loss: 0.4041

```
Epoch 10/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4072 - val_loss: 0.4117
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4043 - val_loss: 0.3850
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4069 - val_loss: 0.3904
Epoch 13/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4027 - val_loss: 0.3941
Epoch 14/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4002 - val_loss: 0.3897
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3972 - val_loss: 0.3944
Epoch 16/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3954 - val_loss: 0.3925
Epoch 17/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3961 - val_loss: 0.4005
Epoch 18/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3912 - val_loss: 0.3989
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3941 - val_loss: 0.3994
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3900 - val_loss: 0.4053
Epoch 21/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3884 - val_loss: 0.4096
Epoch 22/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3883 - val_loss: 0.3950
Epoch 23/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3870 - val_loss: 0.3963
Epoch 24/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3853 - val_loss: 0.4211
Epoch 25/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3822 - val_loss: 0.3953
Epoch 26/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3831 - val_loss: 0.3976
Epoch 27/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3808 - val_loss: 0.3875
Epoch 28/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3818 - val_loss: 0.3819
Epoch 29/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3793 - val_loss: 0.3860
Epoch 30/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3787 - val_loss: 0.3910
Epoch 31/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3747 - val_loss: 0.3959
Epoch 32/100
```

```
50/50 [==============================] - 3s 54ms/step - loss: 0.3739 - val_loss: 0.3755
Epoch 33/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3736 - val_loss: 0.3804
Epoch 34/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3716 - val_loss: 0.3799
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3724 - val_loss: 0.3903
Epoch 36/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3649 - val_loss: 0.3794
Epoch 37/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3692 - val_loss: 0.4146
Epoch 38/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3648 - val_loss: 0.3958
Epoch 39/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3666 - val_loss: 0.3764
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3632 - val_loss: 0.3866
Epoch 41/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3604 - val_loss: 0.3843
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3621 - val_loss: 0.3987
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3562 - val_loss: 0.3766
Epoch 44/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3572 - val_loss: 0.4099
Epoch 45/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3569 - val_loss: 0.3890
Epoch 46/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3525 - val_loss: 0.3852
Epoch 47/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3547 - val_loss: 0.3911
Epoch 48/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3485 - val_loss: 0.4102
Epoch 49/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3469 - val_loss: 0.3909
Epoch 50/100
50/50 [==============================] - 3s 63ms/step - loss: 0.3478 - val_loss: 0.4421
Epoch 51/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3433 - val_loss: 0.3998
Epoch 52/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3466 - val_loss: 0.4280
Epoch 53/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3412 - val_loss: 0.4147
Epoch 54/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3386 - val_loss: 0.4474
```

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Epoch 55/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3409 - val_loss: 0.4590
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3359 - val_loss: 0.4518
Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3382 - val_loss: 0.4330
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3329 - val_loss: 0.4504
Epoch 59/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3322 - val_loss: 0.4858
Epoch 60/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3327 - val_loss: 0.4804
Epoch 61/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3299 - val_loss: 0.4860
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3285 - val_loss: 0.4555
Epoch 63/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3262 - val_loss: 0.4726
Epoch 64/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3287 - val_loss: 0.4498
Epoch 65/100
50/50 [==============================] - 3s 63ms/step - loss: 0.3254 - val_loss: 0.5033
Epoch 66/100
50/50 [==============================] - 3s 62ms/step - loss: 0.3246 - val_loss: 0.4748
Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3235 - val_loss: 0.5204
Epoch 68/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3236 - val_loss: 0.4969
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3229 - val_loss: 0.4883
Epoch 70/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3186 - val_loss: 0.4861
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3191 - val_loss: 0.4994
Epoch 72/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3215 - val_loss: 0.5165
Epoch 73/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3167 - val_loss: 0.5081
Epoch 74/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3176 - val_loss: 0.4641
Epoch 75/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3216 - val_loss: 0.4998
Epoch 76/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3140 - val_loss: 0.5263
Epoch 77/100
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50/50 [==============================] - 3s 55ms/step - loss: 0.3115 - val_loss: 0.5233
Epoch 78/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3145 - val_loss: 0.5515
Epoch 79/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3125 - val_loss: 0.5270
Epoch 80/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3123 - val_loss: 0.4991
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3127 - val_loss: 0.5059
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3264 - val_loss: 0.4814
Epoch 83/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3134 - val_loss: 0.5378
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3084 - val_loss: 0.4975
Epoch 85/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3090 - val_loss: 0.5160
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3074 - val_loss: 0.5915
Epoch 87/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3038 - val_loss: 0.5203
Epoch 88/100
50/50 [==============================] - 4s 84ms/step - loss: 0.3061 - val_loss: 0.5613
Epoch 89/100
50/50 [==============================] - 4s 85ms/step - loss: 0.3054 - val_loss: 0.5427
Epoch 90/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3037 - val_loss: 0.5891
Epoch 91/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3004 - val_loss: 0.6029
Epoch 92/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3001 - val_loss: 0.6487
Epoch 93/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3026 - val_loss: 0.5699
Epoch 94/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2999 - val_loss: 0.6003
Epoch 95/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2979 - val_loss: 0.5522
Epoch 96/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2994 - val_loss: 0.6039
Epoch 97/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2971 - val_loss: 0.6196
Epoch 98/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2944 - val_loss: 0.5493
Epoch 99/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2972 - val_loss: 0.5691
```

Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2916 - val_loss: 0.5803

Single Step Training and validation loss for TX_3

Single Step Prediction for TX_3
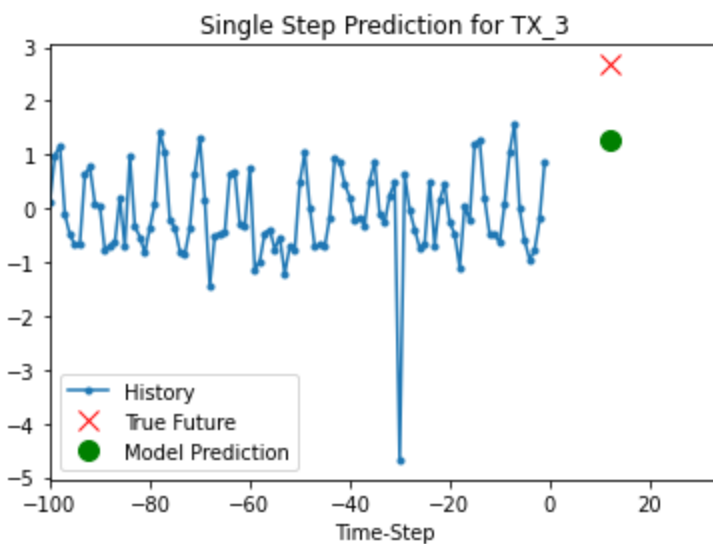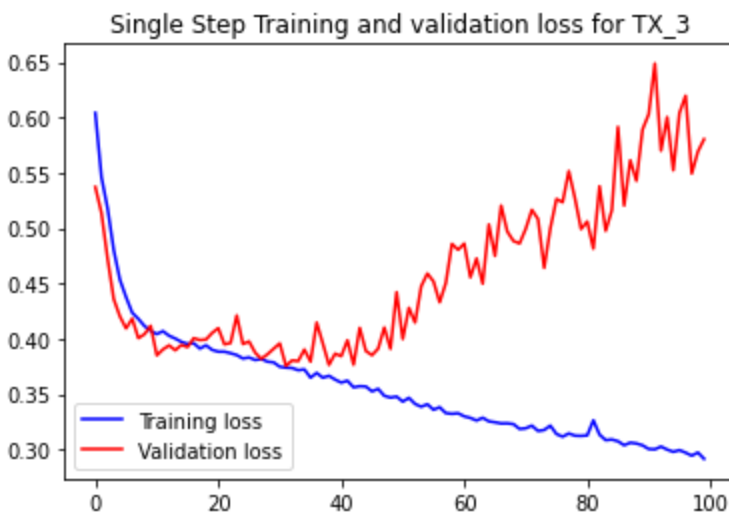
TX_3 - True Future: 4929
TX_3 - Model Prediction: 3996
TX_3 - Model Percentage Error: 18.93%
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Training for TX_2
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 61ms/step - loss: 0.6372 - val_loss: 0.5422
Epoch 2/100
50/50 [==============================] - 3s 52ms/step - loss: 0.5569 - val_loss: 0.4831
Epoch 3/100

```
50/50 [==============================] - 3s 54ms/step - loss: 0.5063 - val_loss: 0.4541
Epoch 4/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4695 - val_loss: 0.4329
Epoch 5/100
50/50 [==============================] - 3s 52ms/step - loss: 0.4454 - val_loss: 0.4450
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4379 - val_loss: 0.4226
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4294 - val_loss: 0.4303
Epoch 8/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4239 - val_loss: 0.4270
Epoch 9/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4215 - val_loss: 0.4250
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4179 - val_loss: 0.4241
Epoch 11/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4170 - val_loss: 0.4297
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4152 - val_loss: 0.4218
Epoch 13/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4124 - val_loss: 0.4336
Epoch 14/100
50/50 [==============================] - 3s 52ms/step - loss: 0.4113 - val_loss: 0.4233
Epoch 15/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4060 - val_loss: 0.4146
Epoch 16/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4090 - val_loss: 0.4179
Epoch 17/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4027 - val_loss: 0.4144
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4020 - val_loss: 0.4128
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4010 - val_loss: 0.4102
Epoch 20/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4002 - val_loss: 0.4198
Epoch 21/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3981 - val_loss: 0.4130
Epoch 22/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3989 - val_loss: 0.4207
Epoch 23/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3933 - val_loss: 0.3941
Epoch 24/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3907 - val_loss: 0.4072
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3918 - val_loss: 0.4253
```

```
Epoch 26/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3901 - val_loss: 0.4118
Epoch 27/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3883 - val_loss: 0.4074
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3840 - val_loss: 0.4153
Epoch 29/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3838 - val_loss: 0.4298
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3850 - val_loss: 0.4036
Epoch 31/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3834 - val_loss: 0.4490
Epoch 32/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3797 - val_loss: 0.4337
Epoch 33/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3791 - val_loss: 0.4429
Epoch 34/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3793 - val_loss: 0.4593
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3745 - val_loss: 0.4592
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3719 - val_loss: 0.4763
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3760 - val_loss: 0.4826
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3672 - val_loss: 0.4701
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3670 - val_loss: 0.4895
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3652 - val_loss: 0.4763
Epoch 41/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3634 - val_loss: 0.4810
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3619 - val_loss: 0.4949
Epoch 43/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3590 - val_loss: 0.4716
Epoch 44/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3582 - val_loss: 0.4685
Epoch 45/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3529 - val_loss: 0.4986
Epoch 46/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3522 - val_loss: 0.4848
Epoch 47/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3506 - val_loss: 0.5001
Epoch 48/100
```

```
50/50 [==============================] - 3s 53ms/step - loss: 0.3499 - val_loss: 0.4873
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3501 - val_loss: 0.4675
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3464 - val_loss: 0.4946
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3438 - val_loss: 0.4861
Epoch 52/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3431 - val_loss: 0.4956
Epoch 53/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3416 - val_loss: 0.4897
Epoch 54/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3409 - val_loss: 0.4772
Epoch 55/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3386 - val_loss: 0.5013
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3430 - val_loss: 0.4635
Epoch 57/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3372 - val_loss: 0.4744
Epoch 58/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3348 - val_loss: 0.5016
Epoch 59/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3369 - val_loss: 0.4907
Epoch 60/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3358 - val_loss: 0.4652
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3292 - val_loss: 0.4545
Epoch 62/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3332 - val_loss: 0.4970
Epoch 63/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3322 - val_loss: 0.4873
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3298 - val_loss: 0.4414
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3277 - val_loss: 0.4639
Epoch 66/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3280 - val_loss: 0.4824
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3267 - val_loss: 0.4644
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3255 - val_loss: 0.4416
Epoch 69/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3231 - val_loss: 0.4603
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3244 - val_loss: 0.4633
```

```
Epoch 71/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3223 - val_loss: 0.4364
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3246 - val_loss: 0.4347
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3190 - val_loss: 0.4414
Epoch 74/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3209 - val_loss: 0.4258
Epoch 75/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3190 - val_loss: 0.4382
Epoch 76/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3138 - val_loss: 0.4250
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3191 - val_loss: 0.4334
Epoch 78/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3163 - val_loss: 0.4366
Epoch 79/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3132 - val_loss: 0.4555
Epoch 80/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3143 - val_loss: 0.4596
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3117 - val_loss: 0.4625
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3098 - val_loss: 0.4447
Epoch 83/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3094 - val_loss: 0.4347
Epoch 84/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3068 - val_loss: 0.4424
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3075 - val_loss: 0.4171
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3059 - val_loss: 0.4478
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3067 - val_loss: 0.4425
Epoch 88/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3036 - val_loss: 0.4377
Epoch 89/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3007 - val_loss: 0.4259
Epoch 90/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3058 - val_loss: 0.4517
Epoch 91/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3000 - val_loss: 0.4142
Epoch 92/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2987 - val_loss: 0.4093
Epoch 93/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2992 - val_loss: 0.4431
Epoch 94/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2977 - val_loss: 0.4394
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2967 - val_loss: 0.4727
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2932 - val_loss: 0.4445
Epoch 97/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2936 - val_loss: 0.4437
Epoch 98/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2963 - val_loss: 0.4617
Epoch 99/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2935 - val_loss: 0.4544
Epoch 100/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2901 - val_loss: 0.4491
```


Single Step Training and validation loss for TX_2

Single Step Prediction for TX_2
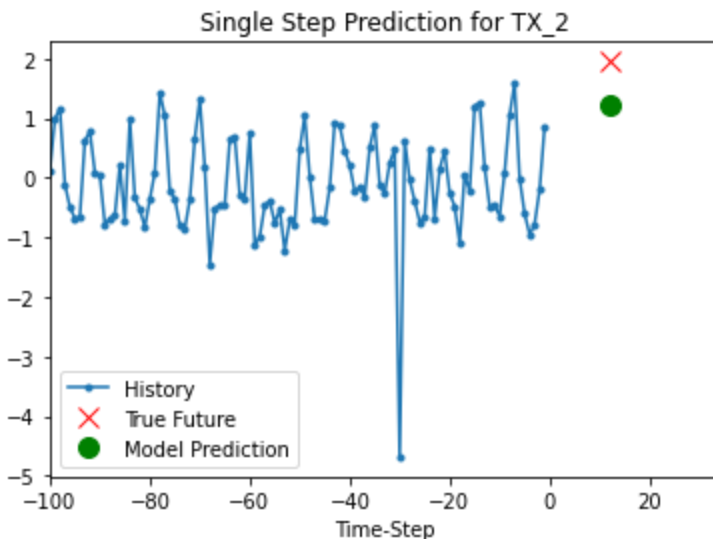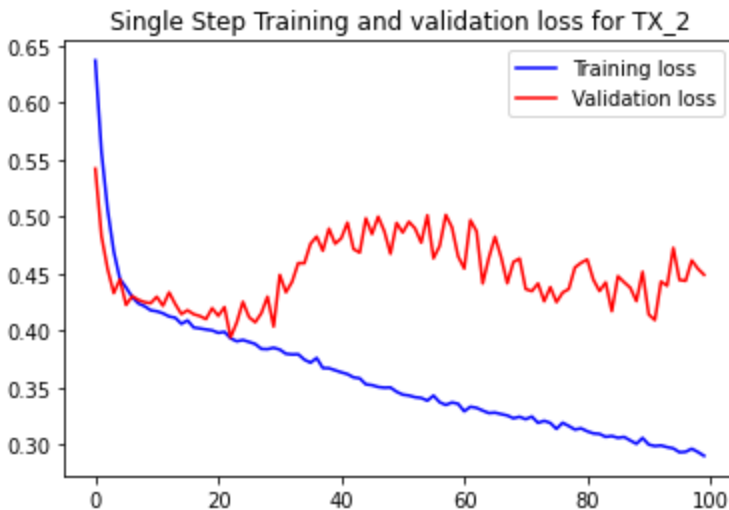
TX_2 - True Future: 5327
TX_2 - Model Prediction: 4733
TX_2 - Model Percentage Error: 11.15%
==================================
==================================
Training for WI_1
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 64ms/step - loss: 0.5205 - val_loss: 0.7156
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4436 - val_loss: 0.6443
Epoch 3/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4102 - val_loss: 0.5857
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3749 - val_loss: 0.5214
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3470 - val_loss: 0.4744
Epoch 6/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3288 - val_loss: 0.4440
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3201 - val_loss: 0.4507
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3138 - val_loss: 0.4167
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3140 - val_loss: 0.4194
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3055 - val_loss: 0.3944
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3024 - val_loss: 0.3795
Epoch 12/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3037 - val_loss: 0.3890
Epoch 13/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2982 - val_loss: 0.3838
Epoch 14/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2971 - val_loss: 0.3883
Epoch 15/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2937 - val_loss: 0.3720
Epoch 16/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2939 - val_loss: 0.3731
Epoch 17/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2894 - val_loss: 0.3890
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2913 - val_loss: 0.3772
Epoch 19/100

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2872 - val_loss: 0.3805
Epoch 20/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2857 - val_loss: 0.3764
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2875 - val_loss: 0.3680
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2825 - val_loss: 0.3730
Epoch 23/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2845 - val_loss: 0.3740
Epoch 24/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2808 - val_loss: 0.3802
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2830 - val_loss: 0.3862
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2801 - val_loss: 0.3759
Epoch 27/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2788 - val_loss: 0.3765
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2778 - val_loss: 0.3810
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2788 - val_loss: 0.3749
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2747 - val_loss: 0.3637
Epoch 31/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2773 - val_loss: 0.3752
Epoch 32/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2759 - val_loss: 0.3724
Epoch 33/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2726 - val_loss: 0.3847
Epoch 34/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2743 - val_loss: 0.3880
Epoch 35/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2694 - val_loss: 0.3654
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2721 - val_loss: 0.3588
Epoch 37/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2708 - val_loss: 0.3677
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2684 - val_loss: 0.3904
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2683 - val_loss: 0.3554
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2654 - val_loss: 0.3699
Epoch 41/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2687 - val_loss: 0.3815
```

```
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2640 - val_loss: 0.3664
Epoch 43/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2653 - val_loss: 0.3709
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2648 - val_loss: 0.3686
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2609 - val_loss: 0.3662
Epoch 46/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2615 - val_loss: 0.3706
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2605 - val_loss: 0.3854
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2613 - val_loss: 0.3663
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2591 - val_loss: 0.3676
Epoch 50/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2589 - val_loss: 0.3594
Epoch 51/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2587 - val_loss: 0.3686
Epoch 52/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2564 - val_loss: 0.3590
Epoch 53/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2567 - val_loss: 0.3649
Epoch 54/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2560 - val_loss: 0.3661
Epoch 55/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2566 - val_loss: 0.3633
Epoch 56/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2532 - val_loss: 0.3614
Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2525 - val_loss: 0.3663
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2513 - val_loss: 0.3588
Epoch 59/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2526 - val_loss: 0.3654
Epoch 60/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2528 - val_loss: 0.3810
Epoch 61/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2530 - val_loss: 0.3736
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2453 - val_loss: 0.3709
Epoch 63/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2491 - val_loss: 0.3847
Epoch 64/100
```

```
50/50 [==============================] - 3s 57ms/step - loss: 0.2484 - val_loss: 0.3747
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2490 - val_loss: 0.3645
Epoch 66/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2467 - val_loss: 0.3617
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2446 - val_loss: 0.3626
Epoch 68/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2442 - val_loss: 0.3649
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2437 - val_loss: 0.3685
Epoch 70/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2423 - val_loss: 0.3656
Epoch 71/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2435 - val_loss: 0.3652
Epoch 72/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2408 - val_loss: 0.3662
Epoch 73/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2400 - val_loss: 0.3715
Epoch 74/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2398 - val_loss: 0.3655
Epoch 75/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2386 - val_loss: 0.3609
Epoch 76/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2359 - val_loss: 0.3698
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2381 - val_loss: 0.3646
Epoch 78/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2370 - val_loss: 0.3697
Epoch 79/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2354 - val_loss: 0.3717
Epoch 80/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2331 - val_loss: 0.3640
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2335 - val_loss: 0.3861
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2327 - val_loss: 0.3644
Epoch 83/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2330 - val_loss: 0.3680
Epoch 84/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2307 - val_loss: 0.3802
Epoch 85/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2330 - val_loss: 0.3650
Epoch 86/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2305 - val_loss: 0.3663
```

Epoch 87/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2280 - val_loss: 0.3599
Epoch 88/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2293 - val_loss: 0.3700
Epoch 89/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2267 - val_loss: 0.3706
Epoch 90/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2287 - val_loss: 0.3791
Epoch 91/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2264 - val_loss: 0.3601
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2256 - val_loss: 0.3692
Epoch 93/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2250 - val_loss: 0.3624
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2245 - val_loss: 0.3638
Epoch 95/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2220 - val_loss: 0.3721
Epoch 96/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2231 - val_loss: 0.3601
Epoch 97/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2214 - val_loss: 0.3768
Epoch 98/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2203 - val_loss: 0.3735
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2213 - val_loss: 0.3676
Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2195 - val_loss: 0.3633

Single Step Training and validation loss for WI_1

Single Step Prediction for WI_1
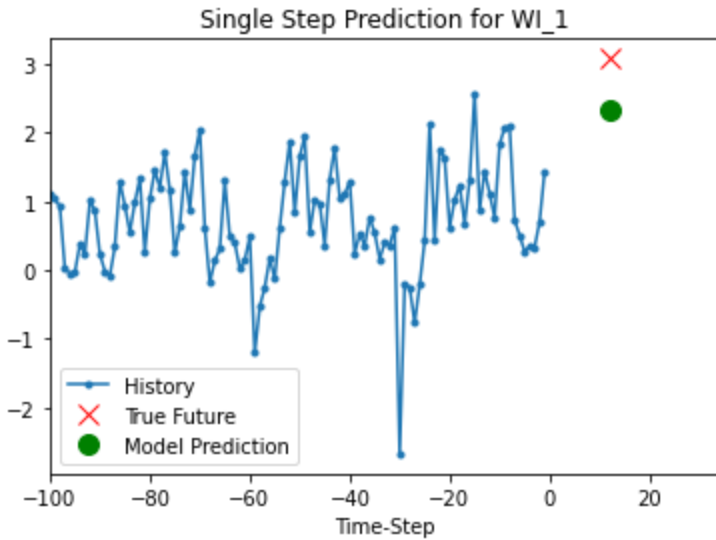
WI_1 - True Future: 5490
WI_1 - Model Prediction: 4787
WI_1 - Model Percentage Error: 12.81%
===================================
===================================
Training for WI_3
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 5s 97ms/step - loss: 0.6870 - val_loss: 0.8007
Epoch 2/100
50/50 [==============================] - 3s 66ms/step - loss: 0.6147 - val_loss: 0.7016
Epoch 3/100
50/50 [==============================] - 3s 53ms/step - loss: 0.5568 - val_loss: 0.6297
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4938 - val_loss: 0.5909
Epoch 5/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4560 - val_loss: 0.6168
Epoch 6/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4443 - val_loss: 0.5727
Epoch 7/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4366 - val_loss: 0.5609
Epoch 8/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4309 - val_loss: 0.6309
Epoch 9/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4322 - val_loss: 0.5973
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4260 - val_loss: 0.6238
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4234 - val_loss: 0.5954

```
Epoch 12/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4209 - val_loss: 0.5953
Epoch 13/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4231 - val_loss: 0.5984
Epoch 14/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4187 - val_loss: 0.5821
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4170 - val_loss: 0.5871
Epoch 16/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4171 - val_loss: 0.5716
Epoch 17/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4126 - val_loss: 0.5558
Epoch 18/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4129 - val_loss: 0.5869
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4095 - val_loss: 0.5743
Epoch 20/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4108 - val_loss: 0.5601
Epoch 21/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4075 - val_loss: 0.5714
Epoch 22/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4066 - val_loss: 0.5765
Epoch 23/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4038 - val_loss: 0.5760
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4013 - val_loss: 0.5651
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4010 - val_loss: 0.5547
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3999 - val_loss: 0.5714
Epoch 27/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3975 - val_loss: 0.5761
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3979 - val_loss: 0.5230
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3987 - val_loss: 0.5716
Epoch 30/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3917 - val_loss: 0.5575
Epoch 31/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3929 - val_loss: 0.5523
Epoch 32/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3923 - val_loss: 0.5736
Epoch 33/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3898 - val_loss: 0.5544
Epoch 34/100
```

```
50/50 [==============================] - 3s 57ms/step - loss: 0.3902 - val_loss: 0.5405
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3873 - val_loss: 0.5547
Epoch 36/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3852 - val_loss: 0.5407
Epoch 37/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3868 - val_loss: 0.5392
Epoch 38/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3823 - val_loss: 0.5810
Epoch 39/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3843 - val_loss: 0.5805
Epoch 40/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3824 - val_loss: 0.5424
Epoch 41/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3811 - val_loss: 0.5709
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3811 - val_loss: 0.5713
Epoch 43/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3796 - val_loss: 0.5749
Epoch 44/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3764 - val_loss: 0.5983
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3790 - val_loss: 0.5605
Epoch 46/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3763 - val_loss: 0.5851
Epoch 47/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3726 - val_loss: 0.5741
Epoch 48/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3752 - val_loss: 0.6209
Epoch 49/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3749 - val_loss: 0.5881
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3692 - val_loss: 0.5903
Epoch 51/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3759 - val_loss: 0.5837
Epoch 52/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3700 - val_loss: 0.5733
Epoch 53/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3703 - val_loss: 0.5917
Epoch 54/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3682 - val_loss: 0.6054
Epoch 55/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3675 - val_loss: 0.5961
Epoch 56/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3685 - val_loss: 0.5903
```

```
Epoch 57/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3656 - val_loss: 0.6059
Epoch 58/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3627 - val_loss: 0.6384
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3648 - val_loss: 0.6331
Epoch 60/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3612 - val_loss: 0.6644
Epoch 61/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3605 - val_loss: 0.6154
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3630 - val_loss: 0.6169
Epoch 63/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3573 - val_loss: 0.6140
Epoch 64/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3571 - val_loss: 0.6148
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3574 - val_loss: 0.6580
Epoch 66/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3573 - val_loss: 0.6282
Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3537 - val_loss: 0.6343
Epoch 68/100
50/50 [==============================] - 5s 108ms/step - loss: 0.3511 - val_loss: 0.6506
Epoch 69/100
50/50 [==============================] - 5s 101ms/step - loss: 0.3571 - val_loss: 0.6269
Epoch 70/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3523 - val_loss: 0.6177
Epoch 71/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3511 - val_loss: 0.6449
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3478 - val_loss: 0.6375
Epoch 73/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3495 - val_loss: 0.6182
Epoch 74/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3471 - val_loss: 0.6317
Epoch 75/100
50/50 [==============================] - 3s 60ms/step - loss: 0.3440 - val_loss: 0.6173
Epoch 76/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3456 - val_loss: 0.5773
Epoch 77/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3415 - val_loss: 0.5991
Epoch 78/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3421 - val_loss: 0.6375
Epoch 79/100
```

```
50/50 [==============================] - 3s 59ms/step - loss: 0.3405 - val_loss: 0.6185
Epoch 80/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3373 - val_loss: 0.6225
Epoch 81/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3386 - val_loss: 0.6326
Epoch 82/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3366 - val_loss: 0.6172
Epoch 83/100
50/50 [==============================] - 3s 64ms/step - loss: 0.3361 - val_loss: 0.6330
Epoch 84/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3351 - val_loss: 0.5935
Epoch 85/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3352 - val_loss: 0.6221
Epoch 86/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3334 - val_loss: 0.6126
Epoch 87/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3301 - val_loss: 0.5698
Epoch 88/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3312 - val_loss: 0.6161
Epoch 89/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3291 - val_loss: 0.6097
Epoch 90/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3272 - val_loss: 0.6077
Epoch 91/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3257 - val_loss: 0.5658
Epoch 92/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3266 - val_loss: 0.5941
Epoch 93/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3232 - val_loss: 0.5858
Epoch 94/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3234 - val_loss: 0.5719
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3201 - val_loss: 0.5411
Epoch 96/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3206 - val_loss: 0.5685
Epoch 97/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3202 - val_loss: 0.5358
Epoch 98/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3186 - val_loss: 0.5653
Epoch 99/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3145 - val_loss: 0.5221
Epoch 100/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3158 - val_loss: 0.5304
```

Single Step Training and validation loss for WI_3

Single Step Prediction for WI_3
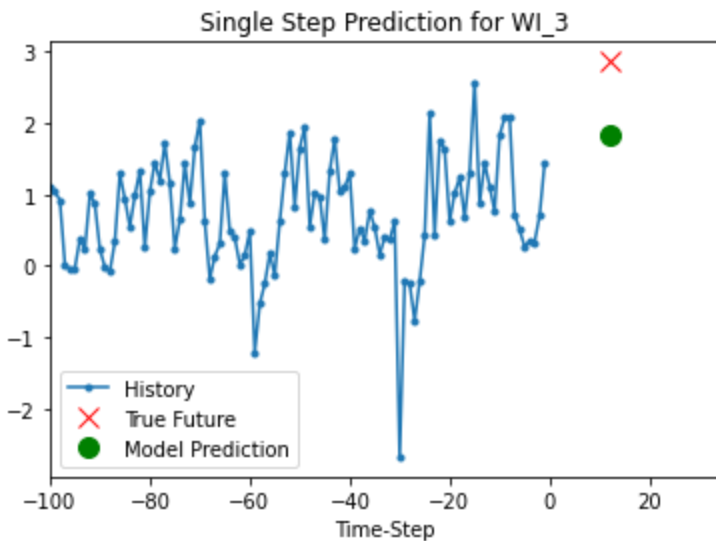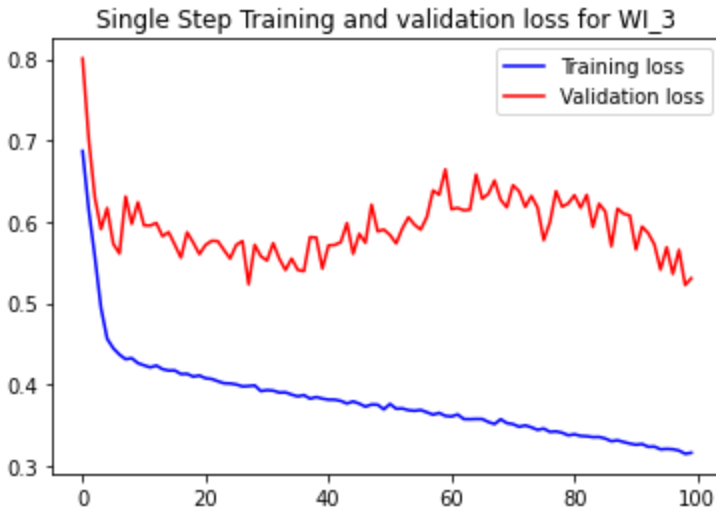
WI_3 - True Future: 5666
WI_3 - Model Prediction: 4832
WI_3 - Model Percentage Error: 14.72%
===================================
===================================
Training for WI_2
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 68ms/step - loss: 0.4557 - val_loss: 0.6598
Epoch 2/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4066 - val_loss: 0.6294
Epoch 3/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3835 - val_loss: 0.5680
Epoch 4/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3606 - val_loss: 0.6337

```
Epoch 5/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3497 - val_loss: 0.6312
Epoch 6/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3439 - val_loss: 0.6176
Epoch 7/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3389 - val_loss: 0.6372
Epoch 8/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3344 - val_loss: 0.6269
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3310 - val_loss: 0.6922
Epoch 10/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3282 - val_loss: 0.7156
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3257 - val_loss: 0.6692
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3260 - val_loss: 0.6312
Epoch 13/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3249 - val_loss: 0.6765
Epoch 14/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3229 - val_loss: 0.7059
Epoch 15/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3231 - val_loss: 0.7260
Epoch 16/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3180 - val_loss: 0.7304
Epoch 17/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3200 - val_loss: 0.6879
Epoch 18/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3182 - val_loss: 0.7696
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3170 - val_loss: 0.7283
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3169 - val_loss: 0.7595
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3146 - val_loss: 0.7028
Epoch 22/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3124 - val_loss: 0.6710
Epoch 23/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3113 - val_loss: 0.7871
Epoch 24/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3123 - val_loss: 0.7552
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3067 - val_loss: 0.6905
Epoch 26/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3088 - val_loss: 0.7719
Epoch 27/100
```

```
50/50 [==============================] - 3s 53ms/step - loss: 0.3065 - val_loss: 0.8279
Epoch 28/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3027 - val_loss: 0.8390
Epoch 29/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2991 - val_loss: 0.7273
Epoch 30/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2963 - val_loss: 0.8116
Epoch 31/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2949 - val_loss: 0.7915
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2933 - val_loss: 0.8949
Epoch 33/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2894 - val_loss: 0.8228
Epoch 34/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2870 - val_loss: 0.8822
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2891 - val_loss: 0.8470
Epoch 36/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2855 - val_loss: 0.9070
Epoch 37/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2833 - val_loss: 0.8403
Epoch 38/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2840 - val_loss: 0.8695
Epoch 39/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2835 - val_loss: 0.8495
Epoch 40/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2821 - val_loss: 0.8581
Epoch 41/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2814 - val_loss: 0.8899
Epoch 42/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2801 - val_loss: 0.9123
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2769 - val_loss: 0.9677
Epoch 44/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2766 - val_loss: 0.9246
Epoch 45/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2782 - val_loss: 0.9162
Epoch 46/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2748 - val_loss: 0.9722
Epoch 47/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2749 - val_loss: 0.9658
Epoch 48/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2746 - val_loss: 0.9148
Epoch 49/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2742 - val_loss: 0.9498
```

```
Epoch 50/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2731 - val_loss: 0.9739
Epoch 51/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2718 - val_loss: 0.9542
Epoch 52/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2730 - val_loss: 0.9593
Epoch 53/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2702 - val_loss: 0.9718
Epoch 54/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2707 - val_loss: 1.0579
Epoch 55/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2695 - val_loss: 0.9154
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2658 - val_loss: 0.9654
Epoch 57/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2691 - val_loss: 0.9787
Epoch 58/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2669 - val_loss: 0.9648
Epoch 59/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2659 - val_loss: 0.9939
Epoch 60/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2641 - val_loss: 0.9185
Epoch 61/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2651 - val_loss: 1.0150
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2639 - val_loss: 0.9970
Epoch 63/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2636 - val_loss: 0.9557
Epoch 64/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2608 - val_loss: 0.9065
Epoch 65/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2620 - val_loss: 0.9208
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2611 - val_loss: 0.9367
Epoch 67/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2589 - val_loss: 0.9797
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2593 - val_loss: 0.9459
Epoch 69/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2599 - val_loss: 0.9510
Epoch 70/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2557 - val_loss: 1.0051
Epoch 71/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2564 - val_loss: 1.0069
Epoch 72/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2562 - val_loss: 1.0031
Epoch 73/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2550 - val_loss: 0.9513
Epoch 74/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2538 - val_loss: 0.9567
Epoch 75/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2529 - val_loss: 0.9820
Epoch 76/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2517 - val_loss: 0.9214
Epoch 77/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2518 - val_loss: 0.9624
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2510 - val_loss: 1.0223
Epoch 79/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2492 - val_loss: 0.9556
Epoch 80/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2480 - val_loss: 0.9293
Epoch 81/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2492 - val_loss: 0.9390
Epoch 82/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2482 - val_loss: 0.9293
Epoch 83/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2467 - val_loss: 0.8683
Epoch 84/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2458 - val_loss: 0.8553
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2459 - val_loss: 0.8832
Epoch 86/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2434 - val_loss: 0.8004
Epoch 87/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2436 - val_loss: 0.9769
Epoch 88/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2430 - val_loss: 0.8663
Epoch 89/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2437 - val_loss: 0.9220
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2410 - val_loss: 0.8216
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2403 - val_loss: 0.8157
Epoch 92/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2392 - val_loss: 0.8278
Epoch 93/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2402 - val_loss: 0.7916
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2388 - val_loss: 0.8131
```

```
Epoch 95/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2390 - val_loss: 0.7992
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2347 - val_loss: 0.8354
Epoch 97/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2372 - val_loss: 0.7857
Epoch 98/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2362 - val_loss: 0.7671
Epoch 99/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2365 - val_loss: 0.7614
Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2333 - val_loss: 0.7139
```


Single Step Training and validation loss for WI_2

Single Step Prediction for WI_2
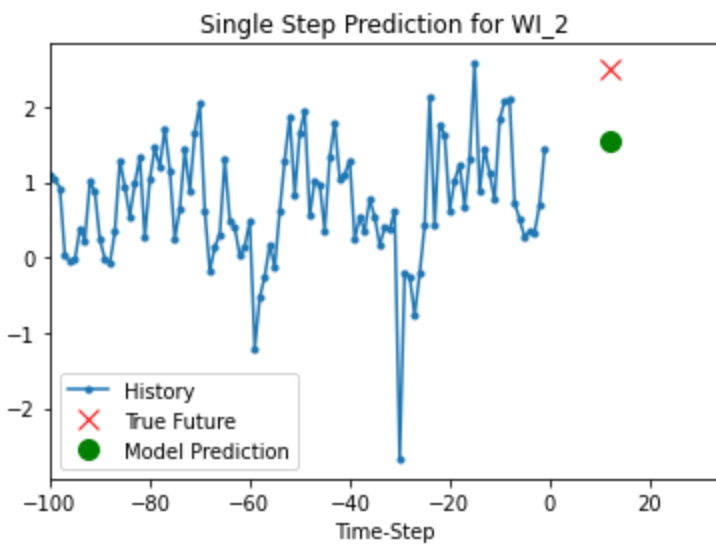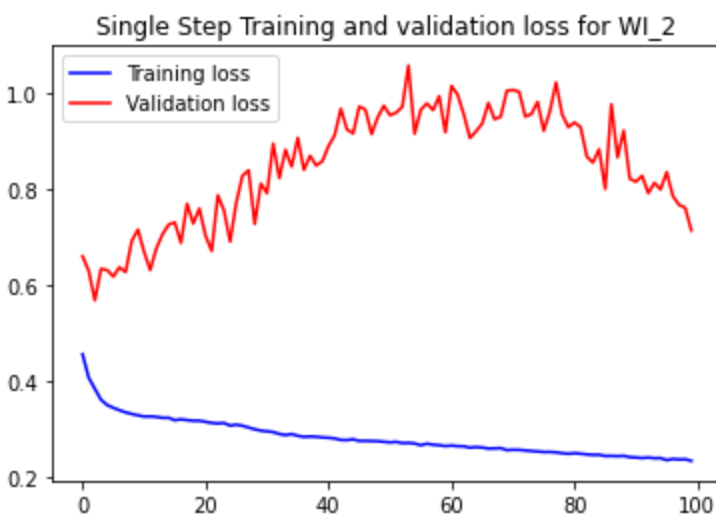
WI_2 - True Future: 6348
WI_2 - Model Prediction: 5158
WI_2 - Model Percentage Error: 18.75%

==
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