Training for CA_2
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 62ms/step - loss: 0.6758 - val_loss: 1.0696
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5101 - val_loss: 0.8819
Epoch 3/100
50/50 [==============================] - 3s 52ms/step - loss: 0.4120 - val_loss: 0.7390
Epoch 4/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3492 - val_loss: 0.6717
Epoch 5/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3355 - val_loss: 0.6373
Epoch 6/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3303 - val_loss: 0.6117
Epoch 7/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3257 - val_loss: 0.5980
Epoch 8/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3219 - val_loss: 0.5920
Epoch 9/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3200 - val_loss: 0.5895
Epoch 10/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3174 - val_loss: 0.5874
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3157 - val_loss: 0.5872
Epoch 12/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3124 - val_loss: 0.5900
Epoch 13/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3127 - val_loss: 0.5868
Epoch 14/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3086 - val_loss: 0.5910
Epoch 15/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3070 - val_loss: 0.5821
Epoch 16/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3071 - val_loss: 0.5868
Epoch 17/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3037 - val_loss: 0.5824
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2998 - val_loss: 0.5836
Epoch 19/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3009 - val_loss: 0.5846
Epoch 20/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2961 - val_loss: 0.5909
Epoch 21/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2936 - val_loss: 0.5868

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Epoch 22/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2986 - val_loss: 0.5944
Epoch 23/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2918 - val_loss: 0.5881
Epoch 24/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2908 - val_loss: 0.5954
Epoch 25/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2866 - val_loss: 0.5899
Epoch 26/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2878 - val_loss: 0.5907
Epoch 27/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2846 - val_loss: 0.5813
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2827 - val_loss: 0.5864
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2811 - val_loss: 0.5858
Epoch 30/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2829 - val_loss: 0.5964
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2818 - val_loss: 0.6037
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2779 - val_loss: 0.5873
Epoch 33/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2763 - val_loss: 0.5893
Epoch 34/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2745 - val_loss: 0.5965
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2758 - val_loss: 0.5832
Epoch 36/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2749 - val_loss: 0.5989
Epoch 37/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2727 - val_loss: 0.5994
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2703 - val_loss: 0.5887
Epoch 39/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2728 - val_loss: 0.5989
Epoch 40/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2707 - val_loss: 0.5959
Epoch 41/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2673 - val_loss: 0.6107
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2684 - val_loss: 0.5892
Epoch 43/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2684 - val_loss: 0.6118
Epoch 44/100
```

```
50/50 [==============================] - 3s 58ms/step - loss: 0.2659 - val_loss: 0.6187
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2638 - val_loss: 0.6097
Epoch 46/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2641 - val_loss: 0.6027
Epoch 47/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2619 - val_loss: 0.6017
Epoch 48/100
50/50 [==============================] - 4s 80ms/step - loss: 0.2622 - val_loss: 0.6011
Epoch 49/100
50/50 [==============================] - 4s 77ms/step - loss: 0.2620 - val_loss: 0.6201
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2613 - val_loss: 0.5977
Epoch 51/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2589 - val_loss: 0.5965
Epoch 52/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2601 - val_loss: 0.6031
Epoch 53/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2570 - val_loss: 0.6090
Epoch 54/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2584 - val_loss: 0.6206
Epoch 55/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2553 - val_loss: 0.6034
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2553 - val_loss: 0.6289
Epoch 57/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2567 - val_loss: 0.6329
Epoch 58/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2542 - val_loss: 0.6093
Epoch 59/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2515 - val_loss: 0.6091
Epoch 60/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2508 - val_loss: 0.6265
Epoch 61/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2531 - val_loss: 0.6213
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2499 - val_loss: 0.6451
Epoch 63/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2513 - val_loss: 0.6368
Epoch 64/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2474 - val_loss: 0.6296
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2489 - val_loss: 0.6335
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2481 - val_loss: 0.6193
```

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Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2468 - val_loss: 0.6187
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2480 - val_loss: 0.6294
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2442 - val_loss: 0.6267
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2457 - val_loss: 0.6169
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2434 - val_loss: 0.6320
Epoch 72/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2436 - val_loss: 0.6134
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2432 - val_loss: 0.6326
Epoch 74/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2425 - val_loss: 0.6223
Epoch 75/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2399 - val_loss: 0.6138
Epoch 76/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2424 - val_loss: 0.6176
Epoch 77/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2396 - val_loss: 0.6336
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2396 - val_loss: 0.6186
Epoch 79/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2388 - val_loss: 0.6212
Epoch 80/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2360 - val_loss: 0.6042
Epoch 81/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2364 - val_loss: 0.6041
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2364 - val_loss: 0.6064
Epoch 83/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2366 - val_loss: 0.6108
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2347 - val_loss: 0.6074
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2345 - val_loss: 0.6099
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2319 - val_loss: 0.6317
Epoch 87/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2342 - val_loss: 0.6110
Epoch 88/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2321 - val_loss: 0.6163
Epoch 89/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2300 - val_loss: 0.6267
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2308 - val_loss: 0.6174
Epoch 91/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2266 - val_loss: 0.6328
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2274 - val_loss: 0.6375
Epoch 93/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2273 - val_loss: 0.6454
Epoch 94/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2306 - val_loss: 0.6206
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2248 - val_loss: 0.6287
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2260 - val_loss: 0.6499
Epoch 97/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2239 - val_loss: 0.6285
Epoch 98/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2248 - val_loss: 0.6403
Epoch 99/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2225 - val_loss: 0.6591
Epoch 100/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2213 - val_loss: 0.6436
```


Single Step Training and validation loss for CA_2

Single Step Prediction for CA_2
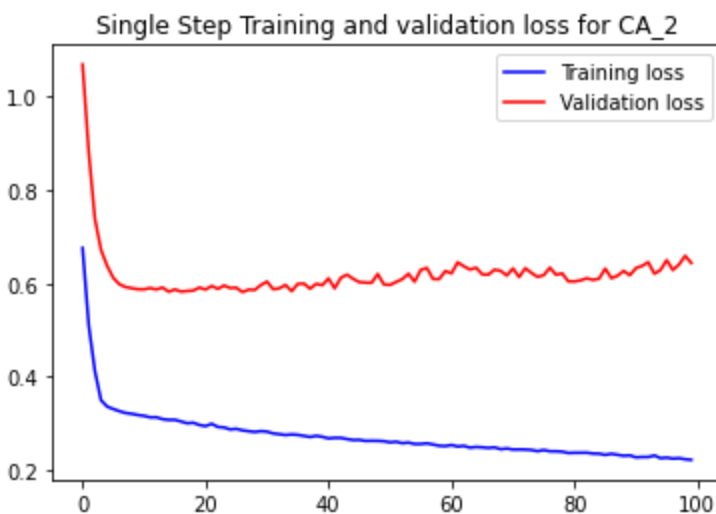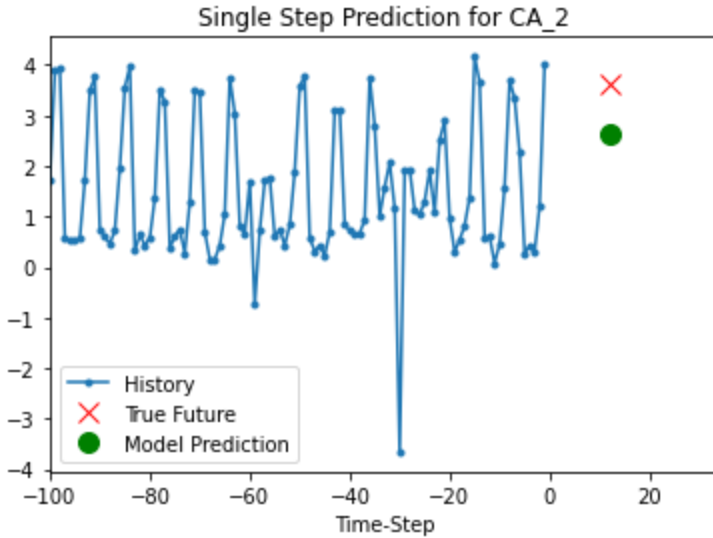
CA_2 - True Future: 5645
CA_2 - Model Prediction: 4874
CA_2 - Model Percentage Error: 13.66%
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Training for CA_4
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 63ms/step - loss: 0.5207 - val_loss: 0.4930
Epoch 2/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4285 - val_loss: 0.4177
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4009 - val_loss: 0.4140
Epoch 4/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3848 - val_loss: 0.4031
Epoch 5/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3777 - val_loss: 0.4078
Epoch 6/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3701 - val_loss: 0.3988
Epoch 7/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3685 - val_loss: 0.4154
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3640 - val_loss: 0.3896
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3649 - val_loss: 0.4128
Epoch 10/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3565 - val_loss: 0.3874
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3579 - val_loss: 0.3763

```
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3588 - val_loss: 0.3913
Epoch 13/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3554 - val_loss: 0.3873
Epoch 14/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3538 - val_loss: 0.3802
Epoch 15/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3523 - val_loss: 0.3859
Epoch 16/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3535 - val_loss: 0.3930
Epoch 17/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3493 - val_loss: 0.4030
Epoch 18/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3498 - val_loss: 0.3991
Epoch 19/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3510 - val_loss: 0.3785
Epoch 20/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3490 - val_loss: 0.3800
Epoch 21/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3478 - val_loss: 0.3830
Epoch 22/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3494 - val_loss: 0.3823
Epoch 23/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3447 - val_loss: 0.3825
Epoch 24/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3444 - val_loss: 0.3760
Epoch 25/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3451 - val_loss: 0.3994
Epoch 26/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3451 - val_loss: 0.3706
Epoch 27/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3440 - val_loss: 0.3728
Epoch 28/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3410 - val_loss: 0.3874
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3425 - val_loss: 0.3846
Epoch 30/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3437 - val_loss: 0.3748
Epoch 31/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3383 - val_loss: 0.3947
Epoch 32/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3385 - val_loss: 0.3795
Epoch 33/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3393 - val_loss: 0.3872
Epoch 34/100
```

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50/50 [==============================] - 3s 53ms/step - loss: 0.3400 - val_loss: 0.3812
Epoch 35/100
50/50 [==============================] - 3s 51ms/step - loss: 0.3353 - val_loss: 0.3809
Epoch 36/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3374 - val_loss: 0.3769
Epoch 37/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3321 - val_loss: 0.3799
Epoch 38/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3362 - val_loss: 0.3886
Epoch 39/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3330 - val_loss: 0.3941
Epoch 40/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3329 - val_loss: 0.3882
Epoch 41/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3317 - val_loss: 0.3956
Epoch 42/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3339 - val_loss: 0.3886
Epoch 43/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3286 - val_loss: 0.4177
Epoch 44/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3274 - val_loss: 0.4022
Epoch 45/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3277 - val_loss: 0.3834
Epoch 46/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3272 - val_loss: 0.3894
Epoch 47/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3266 - val_loss: 0.3761
Epoch 48/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3260 - val_loss: 0.3748
Epoch 49/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3230 - val_loss: 0.3834
Epoch 50/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3266 - val_loss: 0.3818
Epoch 51/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3215 - val_loss: 0.3912
Epoch 52/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3199 - val_loss: 0.3819
Epoch 53/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3199 - val_loss: 0.3729
Epoch 54/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3180 - val_loss: 0.3860
Epoch 55/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3202 - val_loss: 0.3931
Epoch 56/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3178 - val_loss: 0.3750
```

```
Epoch 57/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3144 - val_loss: 0.3832
Epoch 58/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3175 - val_loss: 0.4069
Epoch 59/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3139 - val_loss: 0.4109
Epoch 60/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3142 - val_loss: 0.3955
Epoch 61/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3133 - val_loss: 0.3950
Epoch 62/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3111 - val_loss: 0.3832
Epoch 63/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3132 - val_loss: 0.4113
Epoch 64/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3066 - val_loss: 0.3988
Epoch 65/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3083 - val_loss: 0.3940
Epoch 66/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3064 - val_loss: 0.4033
Epoch 67/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3044 - val_loss: 0.4209
Epoch 68/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3051 - val_loss: 0.3821
Epoch 69/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3025 - val_loss: 0.4250
Epoch 70/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3021 - val_loss: 0.3973
Epoch 71/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2995 - val_loss: 0.3927
Epoch 72/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2990 - val_loss: 0.4014
Epoch 73/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2977 - val_loss: 0.4012
Epoch 74/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2979 - val_loss: 0.3982
Epoch 75/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2940 - val_loss: 0.4118
Epoch 76/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2936 - val_loss: 0.4065
Epoch 77/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2958 - val_loss: 0.4252
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2913 - val_loss: 0.4032
Epoch 79/100
```

```
50/50 [==============================] - 3s 53ms/step - loss: 0.2915 - val_loss: 0.4229
Epoch 80/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2895 - val_loss: 0.4087
Epoch 81/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2905 - val_loss: 0.4157
Epoch 82/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2872 - val_loss: 0.4144
Epoch 83/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2876 - val_loss: 0.4087
Epoch 84/100
50/50 [==============================] - 3s 51ms/step - loss: 0.2864 - val_loss: 0.4156
Epoch 85/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2850 - val_loss: 0.4138
Epoch 86/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2836 - val_loss: 0.4105
Epoch 87/100
50/50 [==============================] - 3s 61ms/step - loss: 0.2847 - val_loss: 0.4068
Epoch 88/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2850 - val_loss: 0.4164
Epoch 89/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2817 - val_loss: 0.4030
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2813 - val_loss: 0.3976
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2824 - val_loss: 0.4193
Epoch 92/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2804 - val_loss: 0.4016
Epoch 93/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2802 - val_loss: 0.4028
Epoch 94/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2797 - val_loss: 0.4084
Epoch 95/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2774 - val_loss: 0.4043
Epoch 96/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2764 - val_loss: 0.4002
Epoch 97/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2755 - val_loss: 0.4144
Epoch 98/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2756 - val_loss: 0.4213
Epoch 99/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2779 - val_loss: 0.4243
Epoch 100/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2733 - val_loss: 0.4131
```

Single Step Training and validation loss for CA_4

Single Step Prediction for CA_4
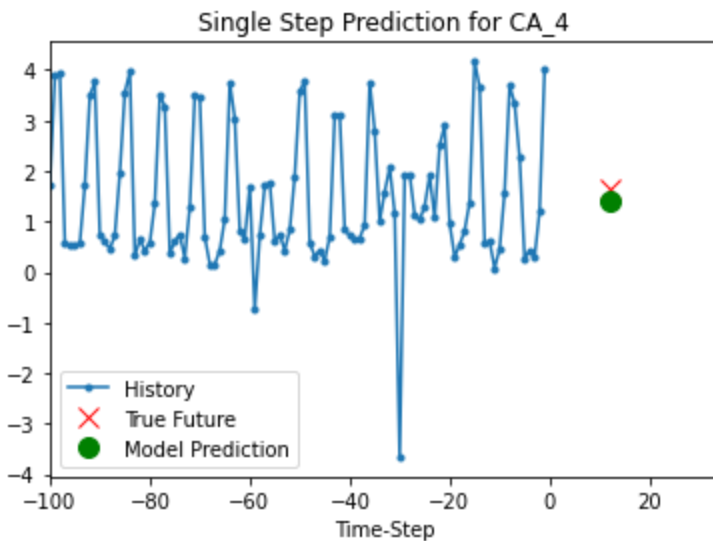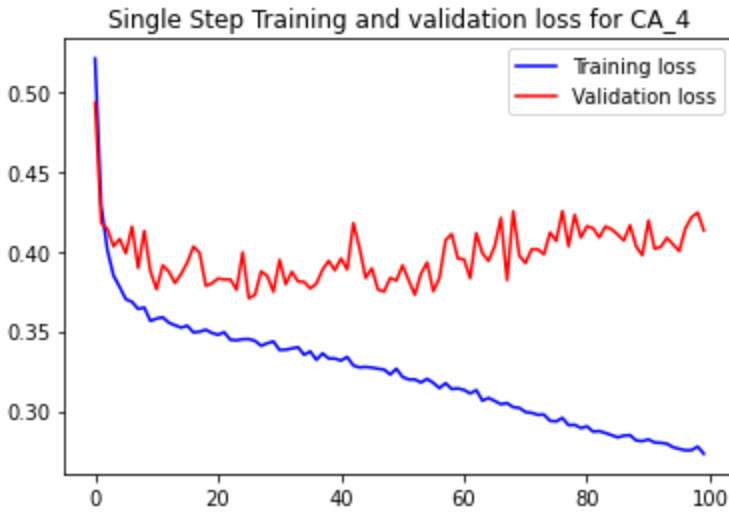
CA_4 - True Future: 2799
CA_4 - Model Prediction: 2702
CA_4 - Model Percentage Error: 3.47%
====================================
====================================
Training for CA_1
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 62ms/step - loss: 0.6208 - val_loss: 0.6490
Epoch 2/100
50/50 [==============================] - 3s 53ms/step - loss: 0.5063 - val_loss: 0.4947
Epoch 3/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4119 - val_loss: 0.4562
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3640 - val_loss: 0.4519

```
Epoch 5/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3533 - val_loss: 0.4522
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3492 - val_loss: 0.4590
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3417 - val_loss: 0.4630
Epoch 8/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3392 - val_loss: 0.4670
Epoch 9/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3392 - val_loss: 0.4624
Epoch 10/100
50/50 [==============================] - 3s 52ms/step - loss: 0.3339 - val_loss: 0.4706
Epoch 11/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3340 - val_loss: 0.4691
Epoch 12/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3299 - val_loss: 0.4581
Epoch 13/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3306 - val_loss: 0.4656
Epoch 14/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3277 - val_loss: 0.4602
Epoch 15/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3288 - val_loss: 0.4541
Epoch 16/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3292 - val_loss: 0.4560
Epoch 17/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3235 - val_loss: 0.4533
Epoch 18/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3264 - val_loss: 0.4597
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3214 - val_loss: 0.4559
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3234 - val_loss: 0.4493
Epoch 21/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3219 - val_loss: 0.4498
Epoch 22/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3195 - val_loss: 0.4439
Epoch 23/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3196 - val_loss: 0.4478
Epoch 24/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3189 - val_loss: 0.4555
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3170 - val_loss: 0.4539
Epoch 26/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3158 - val_loss: 0.4489
Epoch 27/100
```

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50/50 [==============================] - 3s 54ms/step - loss: 0.3160 - val_loss: 0.4500
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3139 - val_loss: 0.4450
Epoch 29/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3154 - val_loss: 0.4429
Epoch 30/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3105 - val_loss: 0.4427
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3130 - val_loss: 0.4518
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3110 - val_loss: 0.4436
Epoch 33/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3101 - val_loss: 0.4471
Epoch 34/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3116 - val_loss: 0.4455
Epoch 35/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3074 - val_loss: 0.4433
Epoch 36/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3071 - val_loss: 0.4411
Epoch 37/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3099 - val_loss: 0.4466
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3069 - val_loss: 0.4415
Epoch 39/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3053 - val_loss: 0.4403
Epoch 40/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3049 - val_loss: 0.4587
Epoch 41/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3033 - val_loss: 0.4406
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3037 - val_loss: 0.4433
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3008 - val_loss: 0.4444
Epoch 44/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3014 - val_loss: 0.4543
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2974 - val_loss: 0.4546
Epoch 46/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2998 - val_loss: 0.4380
Epoch 47/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2980 - val_loss: 0.4455
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2967 - val_loss: 0.4421
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2972 - val_loss: 0.4629
```

```
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2969 - val_loss: 0.4474
Epoch 51/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2917 - val_loss: 0.4482
Epoch 52/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2946 - val_loss: 0.4544
Epoch 53/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2921 - val_loss: 0.4598
Epoch 54/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2914 - val_loss: 0.4609
Epoch 55/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2929 - val_loss: 0.4582
Epoch 56/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2892 - val_loss: 0.4664
Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2870 - val_loss: 0.4570
Epoch 58/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2878 - val_loss: 0.4586
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2868 - val_loss: 0.4606
Epoch 60/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2864 - val_loss: 0.4597
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2800 - val_loss: 0.4530
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2846 - val_loss: 0.4724
Epoch 63/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2800 - val_loss: 0.4607
Epoch 64/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2799 - val_loss: 0.4604
Epoch 65/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2796 - val_loss: 0.4623
Epoch 66/100
50/50 [==============================] - 4s 85ms/step - loss: 0.2772 - val_loss: 0.4655
Epoch 67/100
50/50 [==============================] - 3s 69ms/step - loss: 0.2756 - val_loss: 0.4686
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2764 - val_loss: 0.4777
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2707 - val_loss: 0.4687
Epoch 70/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2729 - val_loss: 0.4715
Epoch 71/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2706 - val_loss: 0.4800
Epoch 72/100
```

```
50/50 [==============================] - 3s 56ms/step - loss: 0.2698 - val_loss: 0.4694
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2689 - val_loss: 0.4806
Epoch 74/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2674 - val_loss: 0.4724
Epoch 75/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2672 - val_loss: 0.4768
Epoch 76/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2638 - val_loss: 0.4760
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2647 - val_loss: 0.4779
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2629 - val_loss: 0.4962
Epoch 79/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2609 - val_loss: 0.5028
Epoch 80/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2557 - val_loss: 0.4894
Epoch 81/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2580 - val_loss: 0.4757
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2595 - val_loss: 0.4791
Epoch 83/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2552 - val_loss: 0.4841
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2543 - val_loss: 0.4898
Epoch 85/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2528 - val_loss: 0.4828
Epoch 86/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2511 - val_loss: 0.4967
Epoch 87/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2498 - val_loss: 0.4907
Epoch 88/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2505 - val_loss: 0.5090
Epoch 89/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2490 - val_loss: 0.4958
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2485 - val_loss: 0.4826
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2453 - val_loss: 0.4954
Epoch 92/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2446 - val_loss: 0.5050
Epoch 93/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2420 - val_loss: 0.5095
Epoch 94/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2446 - val_loss: 0.4824
```

```
Epoch 95/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2409 - val_loss: 0.4872
Epoch 96/100
50/50 [==============================] - 3s 52ms/step - loss: 0.2392 - val_loss: 0.4973
Epoch 97/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2383 - val_loss: 0.4918
Epoch 98/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2392 - val_loss: 0.5170
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2371 - val_loss: 0.5056
Epoch 100/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2348 - val_loss: 0.4989
```


Single Step Training and validation loss for CA_1

Single Step Prediction for CA_1
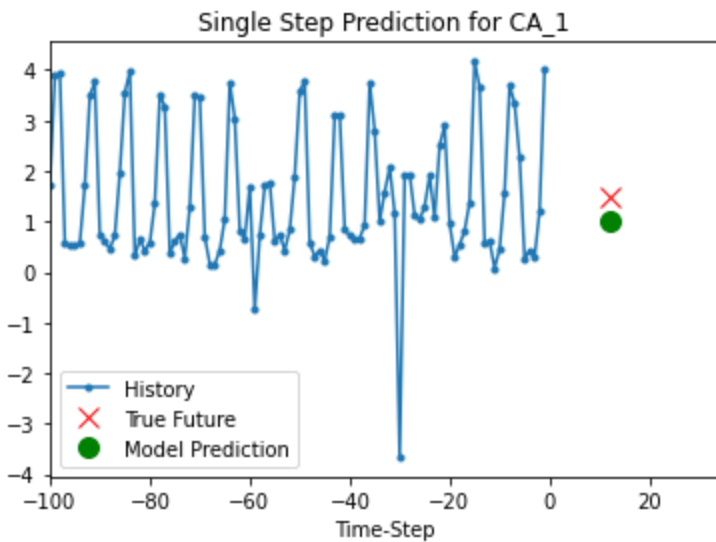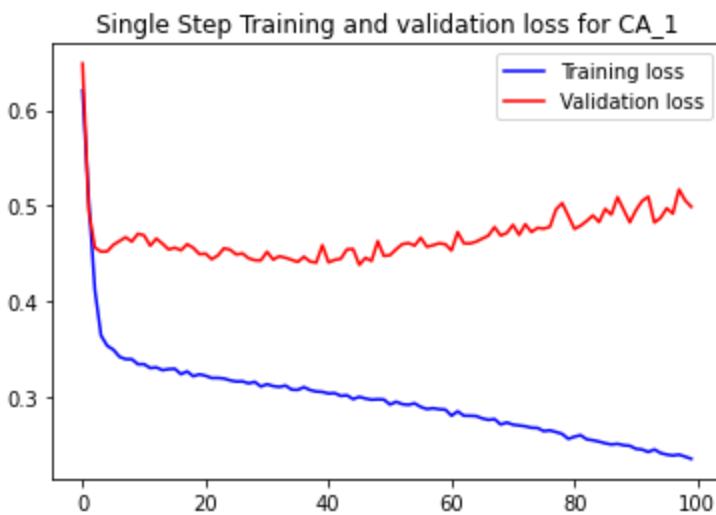
CA_1 - True Future: 5483
CA_1 - Model Prediction: 4984
CA_1 - Model Percentage Error: 9.10%

```
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Training for CA_3
Single window of past history : (100, 4)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 61ms/step - loss: 0.5722 - val_loss: 0.7039
Epoch 2/100
50/50 [==============================] - 3s 53ms/step - loss: 0.5004 - val_loss: 0.6072
Epoch 3/100
50/50 [==============================] - 3s 52ms/step - loss: 0.4632 - val_loss: 0.5089
Epoch 4/100
50/50 [==============================] - 3s 61ms/step - loss: 0.4357 - val_loss: 0.4053
Epoch 5/100
50/50 [==============================] - 5s 95ms/step - loss: 0.4134 - val_loss: 0.3945
Epoch 6/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3959 - val_loss: 0.3976
Epoch 7/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3874 - val_loss: 0.4117
Epoch 8/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3801 - val_loss: 0.4101
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3714 - val_loss: 0.4213
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3668 - val_loss: 0.4258
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3670 - val_loss: 0.4313
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3593 - val_loss: 0.4551
Epoch 13/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3608 - val_loss: 0.4503
Epoch 14/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3593 - val_loss: 0.4365
Epoch 15/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3542 - val_loss: 0.4404
Epoch 16/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3524 - val_loss: 0.4343
Epoch 17/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3538 - val_loss: 0.4358
Epoch 18/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3502 - val_loss: 0.4359
Epoch 19/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3510 - val_loss: 0.4468
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3485 - val_loss: 0.4449
```

```
Epoch 21/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3472 - val_loss: 0.4490
Epoch 22/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3458 - val_loss: 0.4623
Epoch 23/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3445 - val_loss: 0.4503
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3432 - val_loss: 0.4586
Epoch 25/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3432 - val_loss: 0.4608
Epoch 26/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3383 - val_loss: 0.4640
Epoch 27/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3377 - val_loss: 0.4712
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3377 - val_loss: 0.4778
Epoch 29/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3376 - val_loss: 0.4712
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3333 - val_loss: 0.4708
Epoch 31/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3322 - val_loss: 0.4810
Epoch 32/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3284 - val_loss: 0.4815
Epoch 33/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3290 - val_loss: 0.4847
Epoch 34/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3245 - val_loss: 0.4859
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3247 - val_loss: 0.4815
Epoch 36/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3261 - val_loss: 0.4893
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3151 - val_loss: 0.4981
Epoch 38/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3208 - val_loss: 0.4977
Epoch 39/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3186 - val_loss: 0.4951
Epoch 40/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3149 - val_loss: 0.5003
Epoch 41/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3168 - val_loss: 0.5011
Epoch 42/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3126 - val_loss: 0.5030
Epoch 43/100
```

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50/50 [==============================] - 3s 56ms/step - loss: 0.3122 - val_loss: 0.4958
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3095 - val_loss: 0.5011
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3109 - val_loss: 0.5107
Epoch 46/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3079 - val_loss: 0.5029
Epoch 47/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3077 - val_loss: 0.4978
Epoch 48/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3067 - val_loss: 0.5052
Epoch 49/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3042 - val_loss: 0.5029
Epoch 50/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3042 - val_loss: 0.5039
Epoch 51/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3021 - val_loss: 0.4963
Epoch 52/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3015 - val_loss: 0.4919
Epoch 53/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3017 - val_loss: 0.4997
Epoch 54/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2978 - val_loss: 0.5000
Epoch 55/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2992 - val_loss: 0.5001
Epoch 56/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2954 - val_loss: 0.5144
Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2939 - val_loss: 0.5005
Epoch 58/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2944 - val_loss: 0.5076
Epoch 59/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2927 - val_loss: 0.5046
Epoch 60/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2880 - val_loss: 0.5010
Epoch 61/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2940 - val_loss: 0.4974
Epoch 62/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2874 - val_loss: 0.5061
Epoch 63/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2847 - val_loss: 0.5103
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2868 - val_loss: 0.4894
Epoch 65/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2831 - val_loss: 0.4820
```

```
Epoch 66/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2810 - val_loss: 0.4838
Epoch 67/100
50/50 [==============================] - 3s 61ms/step - loss: 0.2815 - val_loss: 0.4813
Epoch 68/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2773 - val_loss: 0.4917
Epoch 69/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2758 - val_loss: 0.4904
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2774 - val_loss: 0.4600
Epoch 71/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2747 - val_loss: 0.4728
Epoch 72/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2731 - val_loss: 0.4804
Epoch 73/100
50/50 [==============================] - 3s 60ms/step - loss: 0.2719 - val_loss: 0.4544
Epoch 74/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2715 - val_loss: 0.4681
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2684 - val_loss: 0.4643
Epoch 76/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2686 - val_loss: 0.4514
Epoch 77/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2663 - val_loss: 0.4541
Epoch 78/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2657 - val_loss: 0.4303
Epoch 79/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2633 - val_loss: 0.4348
Epoch 80/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2626 - val_loss: 0.4424
Epoch 81/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2605 - val_loss: 0.4398
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2598 - val_loss: 0.4184
Epoch 83/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2591 - val_loss: 0.4331
Epoch 84/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2566 - val_loss: 0.4151
Epoch 85/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2548 - val_loss: 0.4364
Epoch 86/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2568 - val_loss: 0.4221
Epoch 87/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2527 - val_loss: 0.4399
Epoch 88/100
```

50/50 [==============================] - 3s 58ms/step - loss: 0.2507 - val_loss: 0.4427
Epoch 89/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2497 - val_loss: 0.4300
Epoch 90/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2475 - val_loss: 0.4165
Epoch 91/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2480 - val_loss: 0.4233
Epoch 92/100
50/50 [==============================] - 3s 59ms/step - loss: 0.2478 - val_loss: 0.4354
Epoch 93/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2468 - val_loss: 0.4245
Epoch 94/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2422 - val_loss: 0.4427
Epoch 95/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2432 - val_loss: 0.4665
Epoch 96/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2439 - val_loss: 0.4363
Epoch 97/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2409 - val_loss: 0.4402
Epoch 98/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2411 - val_loss: 0.4407
Epoch 99/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2394 - val_loss: 0.4582
Epoch 100/100
50/50 [==============================] - 3s 60ms/step - loss: 0.2386 - val_loss: 0.4625

Single Step Training and validation loss for CA_3

Single Step Prediction for CA_3
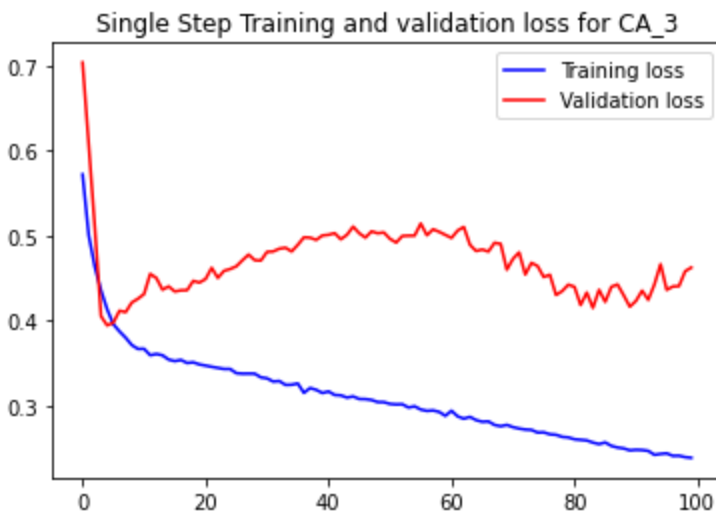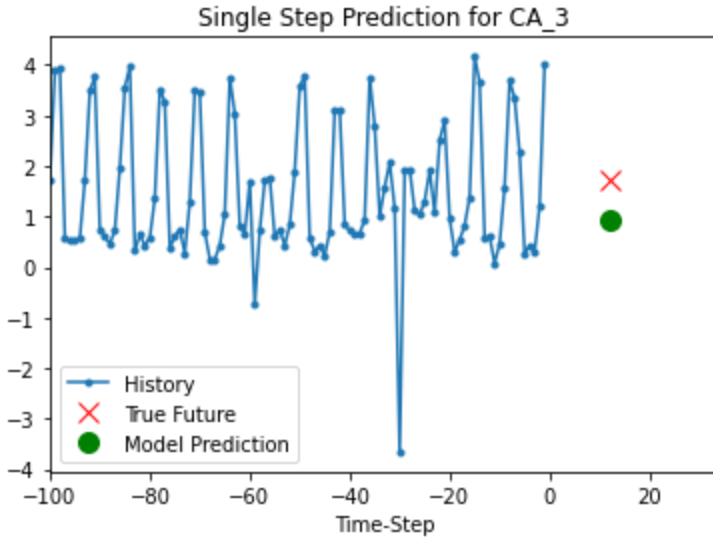
CA_3 - True Future: 7921
CA_3 - Model Prediction: 6971
CA_3 - Model Percentage Error: 11.99%
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Training for TX_2
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 66ms/step - loss: 0.6639 - val_loss: 0.5829
Epoch 2/100
50/50 [==============================] - 3s 64ms/step - loss: 0.5852 - val_loss: 0.5289
Epoch 3/100
50/50 [==============================] - 3s 66ms/step - loss: 0.5386 - val_loss: 0.4741
Epoch 4/100
50/50 [==============================] - 3s 62ms/step - loss: 0.4859 - val_loss: 0.4414
Epoch 5/100
50/50 [==============================] - 3s 60ms/step - loss: 0.4512 - val_loss: 0.4363
Epoch 6/100
50/50 [==============================] - 3s 61ms/step - loss: 0.4370 - val_loss: 0.4185
Epoch 7/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4322 - val_loss: 0.4311
Epoch 8/100
50/50 [==============================] - 3s 61ms/step - loss: 0.4265 - val_loss: 0.4104
Epoch 9/100
50/50 [==============================] - 3s 59ms/step - loss: 0.4223 - val_loss: 0.4187
Epoch 10/100
50/50 [==============================] - 3s 59ms/step - loss: 0.4181 - val_loss: 0.4128
Epoch 11/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4173 - val_loss: 0.4034

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Epoch 12/100
50/50 [==============================] - 3s 59ms/step - loss: 0.4139 - val_loss: 0.4172
Epoch 13/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4118 - val_loss: 0.4255
Epoch 14/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4065 - val_loss: 0.4028
Epoch 15/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4071 - val_loss: 0.4065
Epoch 16/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4081 - val_loss: 0.4073
Epoch 17/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4006 - val_loss: 0.4215
Epoch 18/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4038 - val_loss: 0.4303
Epoch 19/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3969 - val_loss: 0.4337
Epoch 20/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3966 - val_loss: 0.4306
Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3940 - val_loss: 0.4501
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3978 - val_loss: 0.4538
Epoch 23/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3917 - val_loss: 0.4724
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3886 - val_loss: 0.4692
Epoch 25/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3904 - val_loss: 0.4749
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3871 - val_loss: 0.4496
Epoch 27/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3861 - val_loss: 0.4796
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3824 - val_loss: 0.4700
Epoch 29/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3841 - val_loss: 0.5061
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3806 - val_loss: 0.4569
Epoch 31/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3816 - val_loss: 0.4601
Epoch 32/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3784 - val_loss: 0.4644
Epoch 33/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3760 - val_loss: 0.4697
Epoch 34/100
```

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50/50 [==============================] - 3s 56ms/step - loss: 0.3719 - val_loss: 0.4423
Epoch 35/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3751 - val_loss: 0.4747
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3658 - val_loss: 0.4307
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3693 - val_loss: 0.4758
Epoch 38/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3668 - val_loss: 0.4297
Epoch 39/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3606 - val_loss: 0.4347
Epoch 40/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3595 - val_loss: 0.4781
Epoch 41/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3582 - val_loss: 0.4216
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3556 - val_loss: 0.4343
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3533 - val_loss: 0.4521
Epoch 44/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3574 - val_loss: 0.4414
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3520 - val_loss: 0.4292
Epoch 46/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3502 - val_loss: 0.4513
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3479 - val_loss: 0.4244
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3455 - val_loss: 0.4482
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3485 - val_loss: 0.4309
Epoch 50/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3367 - val_loss: 0.4323
Epoch 51/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3409 - val_loss: 0.4372
Epoch 52/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3393 - val_loss: 0.4366
Epoch 53/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3366 - val_loss: 0.4347
Epoch 54/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3361 - val_loss: 0.4308
Epoch 55/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3366 - val_loss: 0.4465
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3315 - val_loss: 0.4413
```

```
Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3316 - val_loss: 0.4265
Epoch 58/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3322 - val_loss: 0.4438
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3309 - val_loss: 0.4611
Epoch 60/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3302 - val_loss: 0.4326
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3279 - val_loss: 0.4365
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3267 - val_loss: 0.4197
Epoch 63/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3250 - val_loss: 0.4292
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3269 - val_loss: 0.4341
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3224 - val_loss: 0.4100
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3211 - val_loss: 0.4328
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3235 - val_loss: 0.4225
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3198 - val_loss: 0.4386
Epoch 69/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3182 - val_loss: 0.4105
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3198 - val_loss: 0.4426
Epoch 71/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3185 - val_loss: 0.4352
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3169 - val_loss: 0.4169
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3147 - val_loss: 0.4097
Epoch 74/100
50/50 [==============================] - 4s 76ms/step - loss: 0.3186 - val_loss: 0.4171
Epoch 75/100
50/50 [==============================] - 5s 91ms/step - loss: 0.3150 - val_loss: 0.4359
Epoch 76/100
50/50 [==============================] - 3s 61ms/step - loss: 0.3143 - val_loss: 0.4009
Epoch 77/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3149 - val_loss: 0.4703
Epoch 78/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3111 - val_loss: 0.4081
Epoch 79/100
```

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50/50 [==============================] - 3s 56ms/step - loss: 0.3112 - val_loss: 0.4148
Epoch 80/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3105 - val_loss: 0.4155
Epoch 81/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3095 - val_loss: 0.4375
Epoch 82/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3097 - val_loss: 0.4142
Epoch 83/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3097 - val_loss: 0.4124
Epoch 84/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3053 - val_loss: 0.4463
Epoch 85/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3074 - val_loss: 0.4279
Epoch 86/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3042 - val_loss: 0.4471
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3018 - val_loss: 0.4221
Epoch 88/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3041 - val_loss: 0.4309
Epoch 89/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3035 - val_loss: 0.4520
Epoch 90/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3015 - val_loss: 0.4400
Epoch 91/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2998 - val_loss: 0.4139
Epoch 92/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2976 - val_loss: 0.4233
Epoch 93/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3001 - val_loss: 0.4395
Epoch 94/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2984 - val_loss: 0.4245
Epoch 95/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2970 - val_loss: 0.4287
Epoch 96/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2964 - val_loss: 0.4844
Epoch 97/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2940 - val_loss: 0.4489
Epoch 98/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2956 - val_loss: 0.4401
Epoch 99/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2928 - val_loss: 0.4361
Epoch 100/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2931 - val_loss: 0.3949
```

Single Step Training and validation loss for TX_2

Single Step Prediction for TX_2
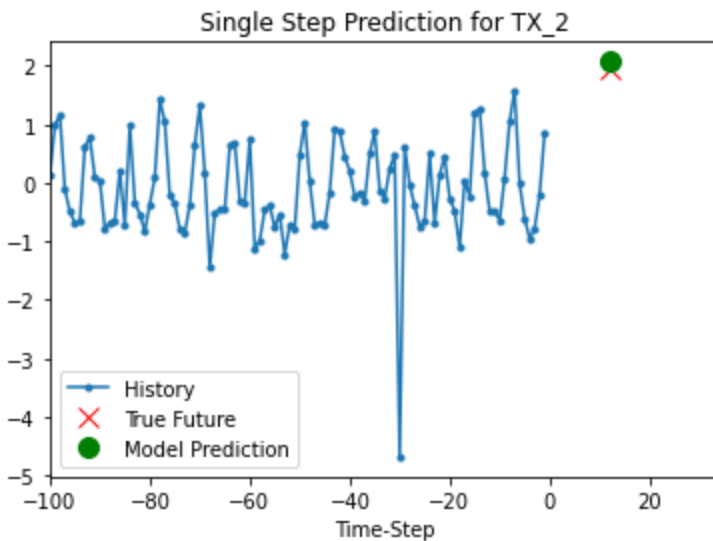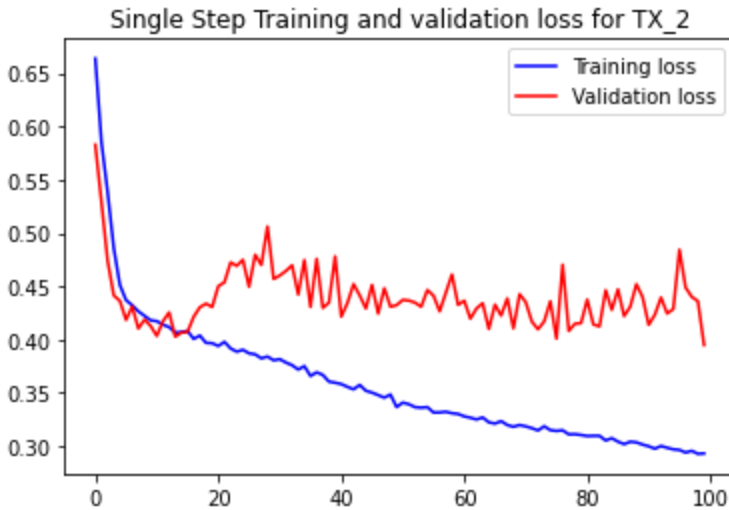
TX_2 - True Future: 5327
TX_2 - Model Prediction: 5428
TX_2 - Model Percentage Error: 1.90%
====================================
====================================
Training for TX_3
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 65ms/step - loss: 0.6155 - val_loss: 0.5436
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5380 - val_loss: 0.5159
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5036 - val_loss: 0.4760
Epoch 4/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4729 - val_loss: 0.4888

```
Epoch 5/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4510 - val_loss: 0.4539
Epoch 6/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4370 - val_loss: 0.4611
Epoch 7/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4270 - val_loss: 0.4449
Epoch 8/100
50/50 [==============================] - 3s 59ms/step - loss: 0.4198 - val_loss: 0.4556
Epoch 9/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4185 - val_loss: 0.4346
Epoch 10/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4111 - val_loss: 0.4425
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4129 - val_loss: 0.4560
Epoch 12/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4114 - val_loss: 0.4251
Epoch 13/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4064 - val_loss: 0.4202
Epoch 14/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4066 - val_loss: 0.4336
Epoch 15/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4040 - val_loss: 0.4403
Epoch 16/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4029 - val_loss: 0.4709
Epoch 17/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4044 - val_loss: 0.4421
Epoch 18/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4013 - val_loss: 0.4382
Epoch 19/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3979 - val_loss: 0.4200
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3984 - val_loss: 0.4337
Epoch 21/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3978 - val_loss: 0.4546
Epoch 22/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3957 - val_loss: 0.4521
Epoch 23/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3944 - val_loss: 0.4069
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3939 - val_loss: 0.3964
Epoch 25/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3924 - val_loss: 0.4003
Epoch 26/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3915 - val_loss: 0.4006
Epoch 27/100
```

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50/50 [==============================] - 3s 57ms/step - loss: 0.3906 - val_loss: 0.4066
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3861 - val_loss: 0.4388
Epoch 29/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3869 - val_loss: 0.4055
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3863 - val_loss: 0.4162
Epoch 31/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3850 - val_loss: 0.3957
Epoch 32/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3825 - val_loss: 0.4005
Epoch 33/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3822 - val_loss: 0.4007
Epoch 34/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3813 - val_loss: 0.3999
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3769 - val_loss: 0.3937
Epoch 36/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3798 - val_loss: 0.3942
Epoch 37/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3803 - val_loss: 0.3888
Epoch 38/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3755 - val_loss: 0.3934
Epoch 39/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3761 - val_loss: 0.4079
Epoch 40/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3727 - val_loss: 0.3887
Epoch 41/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3734 - val_loss: 0.3921
Epoch 42/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3719 - val_loss: 0.3894
Epoch 43/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3712 - val_loss: 0.3977
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3709 - val_loss: 0.3839
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3701 - val_loss: 0.3909
Epoch 46/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3666 - val_loss: 0.3959
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3689 - val_loss: 0.3834
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3673 - val_loss: 0.3923
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3639 - val_loss: 0.3909
```

```
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3643 - val_loss: 0.3822
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3620 - val_loss: 0.3909
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3600 - val_loss: 0.3881
Epoch 53/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3574 - val_loss: 0.3818
Epoch 54/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3586 - val_loss: 0.3917
Epoch 55/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3578 - val_loss: 0.3899
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3536 - val_loss: 0.3803
Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3532 - val_loss: 0.3832
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3508 - val_loss: 0.3869
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3486 - val_loss: 0.3755
Epoch 60/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3445 - val_loss: 0.3902
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3431 - val_loss: 0.3780
Epoch 62/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3432 - val_loss: 0.3775
Epoch 63/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3376 - val_loss: 0.3650
Epoch 64/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3413 - val_loss: 0.3653
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3361 - val_loss: 0.3794
Epoch 66/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3330 - val_loss: 0.3714
Epoch 67/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3341 - val_loss: 0.3792
Epoch 68/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3300 - val_loss: 0.3699
Epoch 69/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3282 - val_loss: 0.3639
Epoch 70/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3289 - val_loss: 0.3996
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3273 - val_loss: 0.3665
Epoch 72/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.3274 - val_loss: 0.3796
Epoch 73/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3265 - val_loss: 0.3833
Epoch 74/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3247 - val_loss: 0.3921
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3222 - val_loss: 0.3705
Epoch 76/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3222 - val_loss: 0.3687
Epoch 77/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3187 - val_loss: 0.3792
Epoch 78/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3201 - val_loss: 0.3845
Epoch 79/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3166 - val_loss: 0.3568
Epoch 80/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3165 - val_loss: 0.3841
Epoch 81/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3186 - val_loss: 0.3725
Epoch 82/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3113 - val_loss: 0.3857
Epoch 83/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3168 - val_loss: 0.3685
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3125 - val_loss: 0.3697
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3126 - val_loss: 0.3849
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3116 - val_loss: 0.4096
Epoch 87/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3085 - val_loss: 0.3781
Epoch 88/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3128 - val_loss: 0.4045
Epoch 89/100
50/50 [==============================] - 3s 53ms/step - loss: 0.3047 - val_loss: 0.4195
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3072 - val_loss: 0.3895
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3052 - val_loss: 0.4256
Epoch 92/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3038 - val_loss: 0.4261
Epoch 93/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3028 - val_loss: 0.3747
Epoch 94/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3050 - val_loss: 0.3999
```

```
Epoch 95/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2985 - val_loss: 0.4183
Epoch 96/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2999 - val_loss: 0.4293
Epoch 97/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3009 - val_loss: 0.4037
Epoch 98/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2968 - val_loss: 0.4264
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2992 - val_loss: 0.4262
Epoch 100/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2972 - val_loss: 0.4203
```


Single Step Training and validation loss for TX_3

Single Step Prediction for TX_3
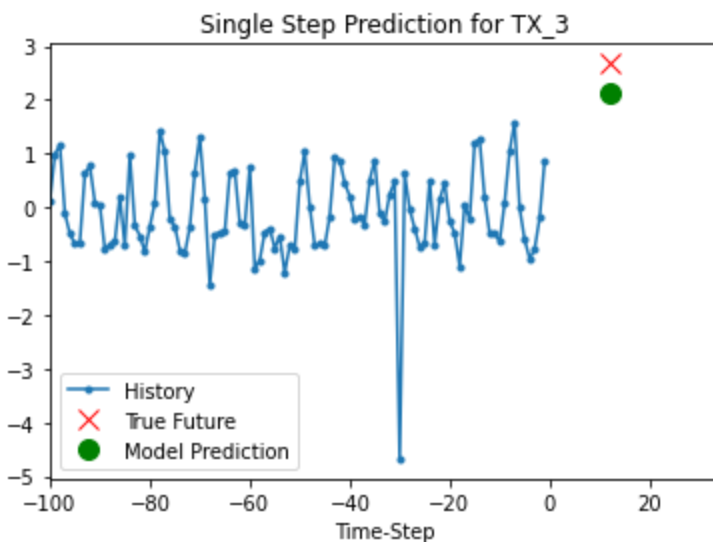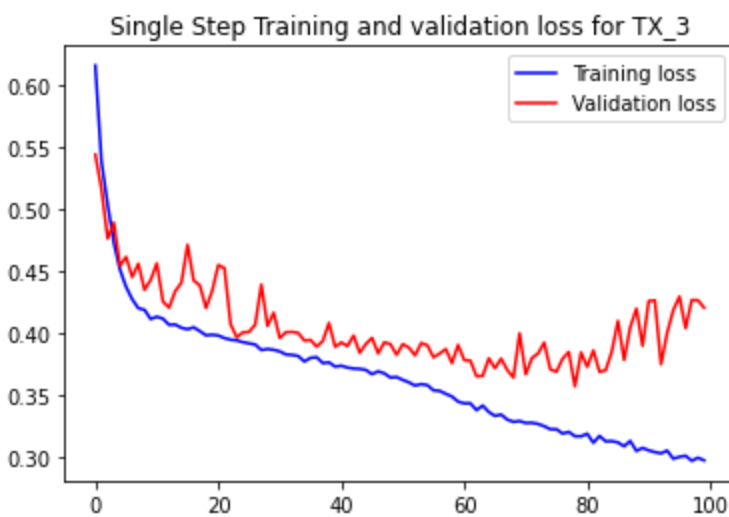
TX_3 - True Future: 4929
TX_3 - Model Prediction: 4550
TX_3 - Model Percentage Error: 7.69%

```
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Training for TX_1
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 61ms/step - loss: 0.6706 - val_loss: 0.6161
Epoch 2/100
50/50 [==============================] - 3s 54ms/step - loss: 0.6099 - val_loss: 0.5693
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5695 - val_loss: 0.5210
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5212 - val_loss: 0.4707
Epoch 5/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4787 - val_loss: 0.4480
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4560 - val_loss: 0.4525
Epoch 7/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4470 - val_loss: 0.4558
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4372 - val_loss: 0.4247
Epoch 9/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4262 - val_loss: 0.4177
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4293 - val_loss: 0.4104
Epoch 11/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4247 - val_loss: 0.4241
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4221 - val_loss: 0.4058
Epoch 13/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4189 - val_loss: 0.4264
Epoch 14/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4195 - val_loss: 0.4010
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4166 - val_loss: 0.4062
Epoch 16/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4144 - val_loss: 0.4131
Epoch 17/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4116 - val_loss: 0.4224
Epoch 18/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4147 - val_loss: 0.4190
Epoch 19/100
50/50 [==============================] - 3s 57ms/step - loss: 0.4092 - val_loss: 0.4303
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4086 - val_loss: 0.4150
```

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Epoch 21/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4089 - val_loss: 0.4125
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4062 - val_loss: 0.4285
Epoch 23/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4013 - val_loss: 0.4312
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4047 - val_loss: 0.4173
Epoch 25/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3980 - val_loss: 0.4273
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3998 - val_loss: 0.4411
Epoch 27/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3978 - val_loss: 0.4455
Epoch 28/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3966 - val_loss: 0.4515
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3964 - val_loss: 0.4113
Epoch 30/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3939 - val_loss: 0.4456
Epoch 31/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3917 - val_loss: 0.4288
Epoch 32/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3921 - val_loss: 0.4246
Epoch 33/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3899 - val_loss: 0.4394
Epoch 34/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3879 - val_loss: 0.3996
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3890 - val_loss: 0.4263
Epoch 36/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3842 - val_loss: 0.4560
Epoch 37/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3871 - val_loss: 0.4888
Epoch 38/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3786 - val_loss: 0.4135
Epoch 39/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3821 - val_loss: 0.4464
Epoch 40/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3792 - val_loss: 0.3803
Epoch 41/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3791 - val_loss: 0.4064
Epoch 42/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3765 - val_loss: 0.4074
Epoch 43/100
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50/50 [==============================] - 3s 56ms/step - loss: 0.3750 - val_loss: 0.3750
Epoch 44/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3706 - val_loss: 0.3821
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3715 - val_loss: 0.4161
Epoch 46/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3714 - val_loss: 0.3954
Epoch 47/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3682 - val_loss: 0.4018
Epoch 48/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3664 - val_loss: 0.3877
Epoch 49/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3677 - val_loss: 0.3931
Epoch 50/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3627 - val_loss: 0.3862
Epoch 51/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3632 - val_loss: 0.3922
Epoch 52/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3619 - val_loss: 0.3965
Epoch 53/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3602 - val_loss: 0.4379
Epoch 54/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3592 - val_loss: 0.3853
Epoch 55/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3592 - val_loss: 0.3979
Epoch 56/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3549 - val_loss: 0.3572
Epoch 57/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3536 - val_loss: 0.3764
Epoch 58/100
50/50 [==============================] - 3s 61ms/step - loss: 0.3525 - val_loss: 0.3732
Epoch 59/100
50/50 [==============================] - 3s 60ms/step - loss: 0.3536 - val_loss: 0.3839
Epoch 60/100
50/50 [==============================] - 3s 60ms/step - loss: 0.3504 - val_loss: 0.3979
Epoch 61/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3499 - val_loss: 0.3588
Epoch 62/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3482 - val_loss: 0.3936
Epoch 63/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3474 - val_loss: 0.4143
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3458 - val_loss: 0.3749
Epoch 65/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3419 - val_loss: 0.3782
```

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Epoch 66/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3434 - val_loss: 0.3613
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3436 - val_loss: 0.3724
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3422 - val_loss: 0.3728
Epoch 69/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3405 - val_loss: 0.3720
Epoch 70/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3382 - val_loss: 0.3741
Epoch 71/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3362 - val_loss: 0.3710
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3340 - val_loss: 0.3821
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3350 - val_loss: 0.3811
Epoch 74/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3316 - val_loss: 0.3751
Epoch 75/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3337 - val_loss: 0.3812
Epoch 76/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3311 - val_loss: 0.3968
Epoch 77/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3308 - val_loss: 0.3903
Epoch 78/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3295 - val_loss: 0.3868
Epoch 79/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3281 - val_loss: 0.3820
Epoch 80/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3314 - val_loss: 0.3832
Epoch 81/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3257 - val_loss: 0.3814
Epoch 82/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3238 - val_loss: 0.3772
Epoch 83/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3232 - val_loss: 0.3858
Epoch 84/100
50/50 [==============================] - 4s 75ms/step - loss: 0.3252 - val_loss: 0.3743
Epoch 85/100
50/50 [==============================] - 4s 83ms/step - loss: 0.3248 - val_loss: 0.3679
Epoch 86/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3223 - val_loss: 0.3863
Epoch 87/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3207 - val_loss: 0.3686
Epoch 88/100
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50/50 [==============================] - 3s 58ms/step - loss: 0.3205 - val_loss: 0.3677
Epoch 89/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3182 - val_loss: 0.3769
Epoch 90/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3176 - val_loss: 0.3876
Epoch 91/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3181 - val_loss: 0.3721
Epoch 92/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3171 - val_loss: 0.3753
Epoch 93/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3151 - val_loss: 0.3824
Epoch 94/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3164 - val_loss: 0.3955
Epoch 95/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3141 - val_loss: 0.4047
Epoch 96/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3123 - val_loss: 0.3868
Epoch 97/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3146 - val_loss: 0.3946
Epoch 98/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3120 - val_loss: 0.3895
Epoch 99/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3107 - val_loss: 0.3908
Epoch 100/100
50/50 [==============================] - 3s 59ms/step - loss: 0.3097 - val_loss: 0.3916
```


Single Step Training and validation loss for TX_1

Single Step Prediction for TX_1
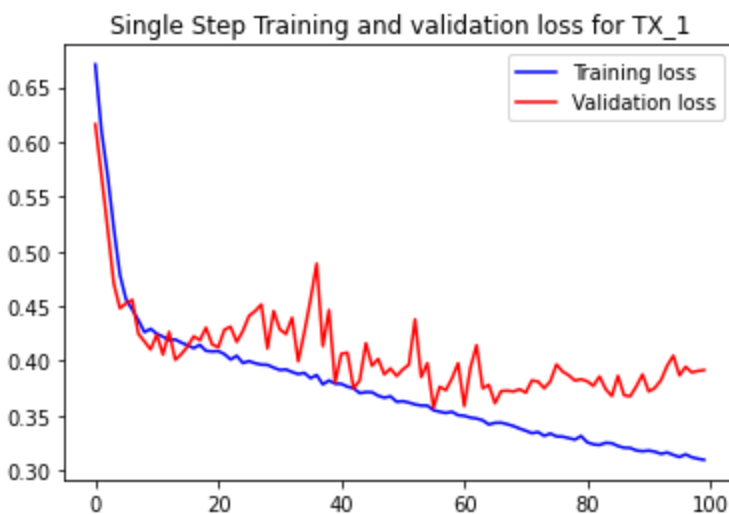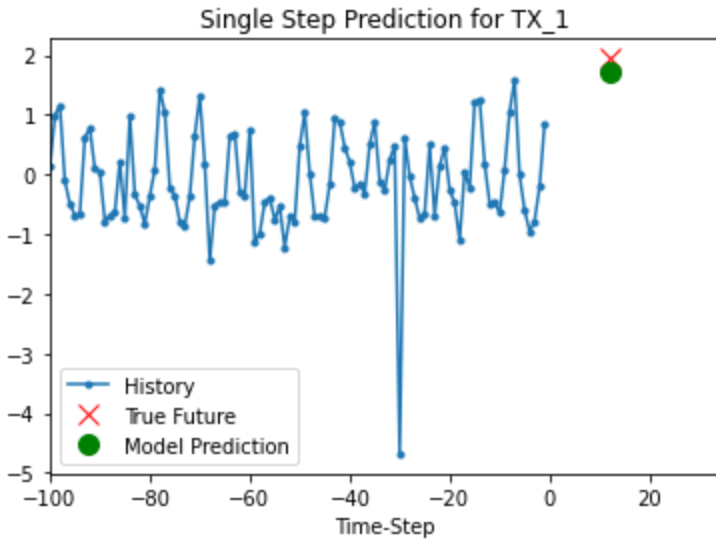
TX_1 - True Future: 4107
TX_1 - Model Prediction: 3964
TX_1 - Model Percentage Error: 3.48%
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Training for WI_1
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 67ms/step - loss: 0.5221 - val_loss: 0.7073
Epoch 2/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4399 - val_loss: 0.6295
Epoch 3/100
50/50 [==============================] - 3s 58ms/step - loss: 0.4047 - val_loss: 0.5627
Epoch 4/100
50/50 [==============================] - 3s 63ms/step - loss: 0.3738 - val_loss: 0.5432
Epoch 5/100
50/50 [==============================] - 3s 62ms/step - loss: 0.3460 - val_loss: 0.4706
Epoch 6/100
50/50 [==============================] - 3s 63ms/step - loss: 0.3260 - val_loss: 0.4750
Epoch 7/100
50/50 [==============================] - 3s 64ms/step - loss: 0.3177 - val_loss: 0.4742
Epoch 8/100
50/50 [==============================] - 3s 65ms/step - loss: 0.3103 - val_loss: 0.4140
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3053 - val_loss: 0.4244
Epoch 10/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3051 - val_loss: 0.3932
Epoch 11/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3017 - val_loss: 0.3915

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Epoch 12/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2984 - val_loss: 0.3826
Epoch 13/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2976 - val_loss: 0.3788
Epoch 14/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2959 - val_loss: 0.3749
Epoch 15/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2914 - val_loss: 0.3866
Epoch 16/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2909 - val_loss: 0.3754
Epoch 17/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2924 - val_loss: 0.3768
Epoch 18/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2891 - val_loss: 0.3807
Epoch 19/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2865 - val_loss: 0.3700
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2862 - val_loss: 0.3717
Epoch 21/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2847 - val_loss: 0.3719
Epoch 22/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2835 - val_loss: 0.3627
Epoch 23/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2817 - val_loss: 0.3721
Epoch 24/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2836 - val_loss: 0.3764
Epoch 25/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2776 - val_loss: 0.3697
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2821 - val_loss: 0.3769
Epoch 27/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2796 - val_loss: 0.3789
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2770 - val_loss: 0.3728
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2769 - val_loss: 0.3705
Epoch 30/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2775 - val_loss: 0.3701
Epoch 31/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2737 - val_loss: 0.3848
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2738 - val_loss: 0.3751
Epoch 33/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2739 - val_loss: 0.3906
Epoch 34/100
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50/50 [==============================] - 3s 54ms/step - loss: 0.2724 - val_loss: 0.3738
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2708 - val_loss: 0.3733
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2717 - val_loss: 0.3789
Epoch 37/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2702 - val_loss: 0.3921
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2691 - val_loss: 0.3802
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2677 - val_loss: 0.3772
Epoch 40/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2668 - val_loss: 0.3853
Epoch 41/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2666 - val_loss: 0.3757
Epoch 42/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2672 - val_loss: 0.3644
Epoch 43/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2662 - val_loss: 0.3713
Epoch 44/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2640 - val_loss: 0.3844
Epoch 45/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2635 - val_loss: 0.3904
Epoch 46/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2635 - val_loss: 0.3823
Epoch 47/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2641 - val_loss: 0.3742
Epoch 48/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2615 - val_loss: 0.3815
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2613 - val_loss: 0.3882
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2595 - val_loss: 0.3836
Epoch 51/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2601 - val_loss: 0.3735
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2585 - val_loss: 0.3970
Epoch 53/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2589 - val_loss: 0.3880
Epoch 54/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2560 - val_loss: 0.3855
Epoch 55/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2582 - val_loss: 0.3713
Epoch 56/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2572 - val_loss: 0.3993
```

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Epoch 57/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2545 - val_loss: 0.3836
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2535 - val_loss: 0.3790
Epoch 59/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2558 - val_loss: 0.3982
Epoch 60/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2544 - val_loss: 0.3962
Epoch 61/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2530 - val_loss: 0.3833
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2506 - val_loss: 0.3895
Epoch 63/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2522 - val_loss: 0.3728
Epoch 64/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2518 - val_loss: 0.3921
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2511 - val_loss: 0.3871
Epoch 66/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2501 - val_loss: 0.3794
Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2488 - val_loss: 0.3681
Epoch 68/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2472 - val_loss: 0.3712
Epoch 69/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2482 - val_loss: 0.3732
Epoch 70/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2480 - val_loss: 0.3852
Epoch 71/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2467 - val_loss: 0.3971
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2452 - val_loss: 0.3880
Epoch 73/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2463 - val_loss: 0.3685
Epoch 74/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2445 - val_loss: 0.4084
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2437 - val_loss: 0.3949
Epoch 76/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2422 - val_loss: 0.3971
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2431 - val_loss: 0.3742
Epoch 78/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2406 - val_loss: 0.4093
Epoch 79/100
```

```
50/50 [==============================] - 3s 56ms/step - loss: 0.2400 - val_loss: 0.3920
Epoch 80/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2408 - val_loss: 0.3889
Epoch 81/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2402 - val_loss: 0.3788
Epoch 82/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2373 - val_loss: 0.3778
Epoch 83/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2391 - val_loss: 0.3977
Epoch 84/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2373 - val_loss: 0.3987
Epoch 85/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2363 - val_loss: 0.4010
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2352 - val_loss: 0.3975
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2351 - val_loss: 0.4041
Epoch 88/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2367 - val_loss: 0.4089
Epoch 89/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2337 - val_loss: 0.3740
Epoch 90/100
50/50 [==============================] - 3s 57ms/step - loss: 0.2341 - val_loss: 0.3927
Epoch 91/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2323 - val_loss: 0.4001
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2315 - val_loss: 0.4062
Epoch 93/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2310 - val_loss: 0.4030
Epoch 94/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2290 - val_loss: 0.4017
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2305 - val_loss: 0.4094
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2310 - val_loss: 0.3970
Epoch 97/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2284 - val_loss: 0.3942
Epoch 98/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2287 - val_loss: 0.4111
Epoch 99/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2279 - val_loss: 0.4017
Epoch 100/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2251 - val_loss: 0.3957
```

Single Step Training and validation loss for WI_1

Single Step Prediction for WI_1
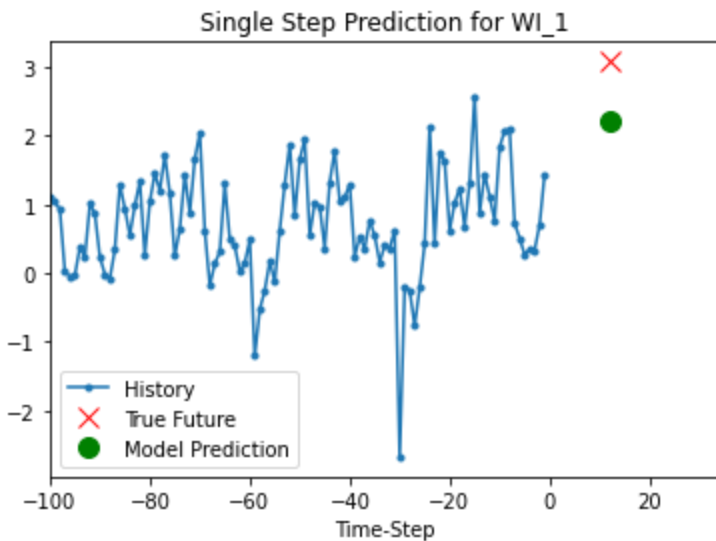
WI_1 - True Future: 5490
WI_1 - Model Prediction: 4671
WI_1 - Model Percentage Error: 14.92%
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Training for WI_2
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 64ms/step - loss: 0.5490 - val_loss: 0.7399
Epoch 2/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4276 - val_loss: 0.7344
Epoch 3/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4050 - val_loss: 0.6979
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3812 - val_loss: 0.6107

```
Epoch 5/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3575 - val_loss: 0.5993
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3458 - val_loss: 0.6782
Epoch 7/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3372 - val_loss: 0.6505
Epoch 8/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3314 - val_loss: 0.6553
Epoch 9/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3278 - val_loss: 0.6928
Epoch 10/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3286 - val_loss: 0.6509
Epoch 11/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3257 - val_loss: 0.6831
Epoch 12/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3226 - val_loss: 0.6558
Epoch 13/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3223 - val_loss: 0.7273
Epoch 14/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3211 - val_loss: 0.7241
Epoch 15/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3191 - val_loss: 0.6997
Epoch 16/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3191 - val_loss: 0.7053
Epoch 17/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3180 - val_loss: 0.7577
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3173 - val_loss: 0.7130
Epoch 19/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3148 - val_loss: 0.7124
Epoch 20/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3159 - val_loss: 0.7176
Epoch 21/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3139 - val_loss: 0.7425
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3128 - val_loss: 0.7097
Epoch 23/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3142 - val_loss: 0.7467
Epoch 24/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3101 - val_loss: 0.7419
Epoch 25/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3090 - val_loss: 0.7838
Epoch 26/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3107 - val_loss: 0.7659
Epoch 27/100
```

```
50/50 [==============================] - 3s 56ms/step - loss: 0.3088 - val_loss: 0.7942
Epoch 28/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3070 - val_loss: 0.8056
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3065 - val_loss: 0.8274
Epoch 30/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3062 - val_loss: 0.8513
Epoch 31/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3042 - val_loss: 0.8392
Epoch 32/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3041 - val_loss: 0.9275
Epoch 33/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3032 - val_loss: 0.8682
Epoch 34/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3009 - val_loss: 0.8763
Epoch 35/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2991 - val_loss: 0.9058
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2972 - val_loss: 0.9205
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2934 - val_loss: 0.9190
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2933 - val_loss: 0.9344
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2911 - val_loss: 0.9342
Epoch 40/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2902 - val_loss: 0.9585
Epoch 41/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2894 - val_loss: 0.9549
Epoch 42/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2876 - val_loss: 0.9230
Epoch 43/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2859 - val_loss: 0.9730
Epoch 44/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2830 - val_loss: 1.0171
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2844 - val_loss: 0.9508
Epoch 46/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2822 - val_loss: 0.9827
Epoch 47/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2820 - val_loss: 0.9587
Epoch 48/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2827 - val_loss: 0.9374
Epoch 49/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2784 - val_loss: 0.9940
```

```
Epoch 50/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2788 - val_loss: 0.9850
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2778 - val_loss: 1.0303
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2759 - val_loss: 1.0464
Epoch 53/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2752 - val_loss: 1.0217
Epoch 54/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2764 - val_loss: 1.0822
Epoch 55/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2725 - val_loss: 1.0261
Epoch 56/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2720 - val_loss: 1.0296
Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2704 - val_loss: 1.0408
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2687 - val_loss: 1.0199
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2688 - val_loss: 1.1417
Epoch 60/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2667 - val_loss: 1.1247
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2646 - val_loss: 1.0295
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2653 - val_loss: 1.1235
Epoch 63/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2617 - val_loss: 1.1076
Epoch 64/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2613 - val_loss: 1.2548
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2596 - val_loss: 1.2179
Epoch 66/100
50/50 [==============================] - 3s 58ms/step - loss: 0.2590 - val_loss: 1.1543
Epoch 67/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2586 - val_loss: 1.0931
Epoch 68/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2559 - val_loss: 1.1511
Epoch 69/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2554 - val_loss: 1.1788
Epoch 70/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2547 - val_loss: 1.2061
Epoch 71/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2537 - val_loss: 1.2242
Epoch 72/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.2528 - val_loss: 1.2469
Epoch 73/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2495 - val_loss: 1.2044
Epoch 74/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2493 - val_loss: 1.2744
Epoch 75/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2481 - val_loss: 1.2939
Epoch 76/100
50/50 [==============================] - 3s 56ms/step - loss: 0.2480 - val_loss: 1.2923
Epoch 77/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2461 - val_loss: 1.2974
Epoch 78/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2452 - val_loss: 1.2975
Epoch 79/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2457 - val_loss: 1.3430
Epoch 80/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2441 - val_loss: 1.3382
Epoch 81/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2423 - val_loss: 1.4579
Epoch 82/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2420 - val_loss: 1.5476
Epoch 83/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2422 - val_loss: 1.4152
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2471 - val_loss: 1.3764
Epoch 85/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2493 - val_loss: 1.5172
Epoch 86/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2577 - val_loss: 1.5140
Epoch 87/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2509 - val_loss: 1.6209
Epoch 88/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2398 - val_loss: 1.6244
Epoch 89/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2375 - val_loss: 1.6039
Epoch 90/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2340 - val_loss: 1.5744
Epoch 91/100
50/50 [==============================] - 3s 54ms/step - loss: 0.2354 - val_loss: 1.5931
Epoch 92/100
50/50 [==============================] - 3s 53ms/step - loss: 0.2348 - val_loss: 1.5824
Epoch 93/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2352 - val_loss: 1.6244
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2309 - val_loss: 1.5536
```

Epoch 95/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2304 - val_loss: 1.5828
Epoch 96/100
50/50 [==============================] - 4s 87ms/step - loss: 0.2328 - val_loss: 1.5972
Epoch 97/100
50/50 [==============================] - 3s 68ms/step - loss: 0.2324 - val_loss: 1.5787
Epoch 98/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2313 - val_loss: 1.5650
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2281 - val_loss: 1.6137
Epoch 100/100
50/50 [==============================] - 3s 55ms/step - loss: 0.2302 - val_loss: 1.6076

Single Step Training and validation loss for WI_2

Single Step Prediction for WI_2
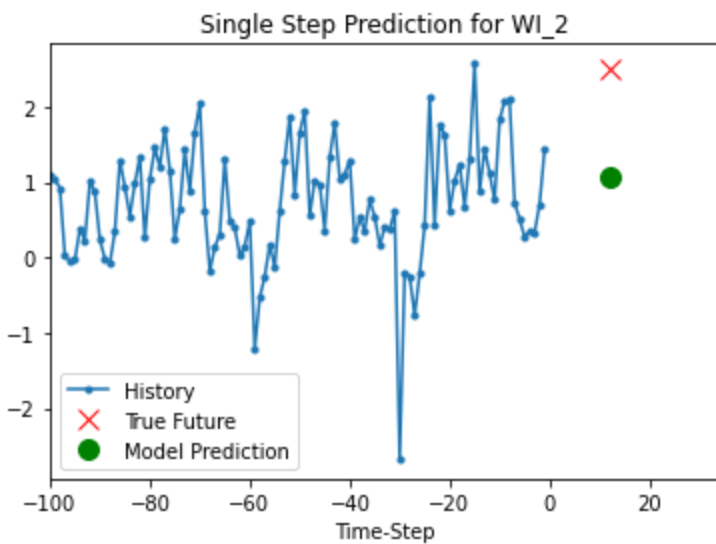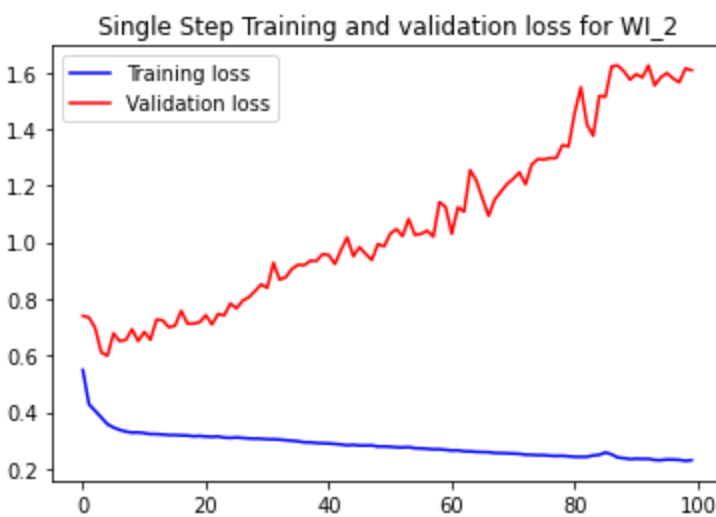
WI_2 - True Future: 6348
WI_2 - Model Prediction: 4583
WI_2 - Model Percentage Error: 27.80%

```
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Training for WI_3
Single window of past history : (100, 3)
(72, 1)
Epoch 1/100
50/50 [==============================] - 3s 62ms/step - loss: 0.6771 - val_loss: 0.7092
Epoch 2/100
50/50 [==============================] - 3s 55ms/step - loss: 0.6189 - val_loss: 0.6386
Epoch 3/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5716 - val_loss: 0.5550
Epoch 4/100
50/50 [==============================] - 3s 55ms/step - loss: 0.5150 - val_loss: 0.4814
Epoch 5/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4752 - val_loss: 0.5709
Epoch 6/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4519 - val_loss: 0.5916
Epoch 7/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4439 - val_loss: 0.6110
Epoch 8/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4368 - val_loss: 0.6255
Epoch 9/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4351 - val_loss: 0.6165
Epoch 10/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4324 - val_loss: 0.5740
Epoch 11/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4281 - val_loss: 0.5780
Epoch 12/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4291 - val_loss: 0.5876
Epoch 13/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4272 - val_loss: 0.5689
Epoch 14/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4255 - val_loss: 0.5997
Epoch 15/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4228 - val_loss: 0.6383
Epoch 16/100
50/50 [==============================] - 3s 56ms/step - loss: 0.4236 - val_loss: 0.5789
Epoch 17/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4176 - val_loss: 0.6091
Epoch 18/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4190 - val_loss: 0.6509
Epoch 19/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4172 - val_loss: 0.5607
Epoch 20/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4150 - val_loss: 0.5412
```

```
Epoch 21/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4132 - val_loss: 0.6383
Epoch 22/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4123 - val_loss: 0.6269
Epoch 23/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4089 - val_loss: 0.5435
Epoch 24/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4123 - val_loss: 0.5470
Epoch 25/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4062 - val_loss: 0.5589
Epoch 26/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4043 - val_loss: 0.6144
Epoch 27/100
50/50 [==============================] - 3s 53ms/step - loss: 0.4025 - val_loss: 0.5246
Epoch 28/100
50/50 [==============================] - 3s 54ms/step - loss: 0.4014 - val_loss: 0.4875
Epoch 29/100
50/50 [==============================] - 3s 55ms/step - loss: 0.4000 - val_loss: 0.4928
Epoch 30/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3969 - val_loss: 0.4612
Epoch 31/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3987 - val_loss: 0.5362
Epoch 32/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3922 - val_loss: 0.4619
Epoch 33/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3938 - val_loss: 0.4702
Epoch 34/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3913 - val_loss: 0.4554
Epoch 35/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3897 - val_loss: 0.4510
Epoch 36/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3861 - val_loss: 0.4516
Epoch 37/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3859 - val_loss: 0.4646
Epoch 38/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3838 - val_loss: 0.4873
Epoch 39/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3837 - val_loss: 0.4768
Epoch 40/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3808 - val_loss: 0.4744
Epoch 41/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3792 - val_loss: 0.4345
Epoch 42/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3762 - val_loss: 0.5094
Epoch 43/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.3766 - val_loss: 0.5268
Epoch 44/100
50/50 [==============================] - 3s 54ms/step - loss: 0.3771 - val_loss: 0.4643
Epoch 45/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3770 - val_loss: 0.5119
Epoch 46/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3746 - val_loss: 0.4855
Epoch 47/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3725 - val_loss: 0.4973
Epoch 48/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3708 - val_loss: 0.5408
Epoch 49/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3718 - val_loss: 0.5645
Epoch 50/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3681 - val_loss: 0.6098
Epoch 51/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3694 - val_loss: 0.5968
Epoch 52/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3689 - val_loss: 0.5789
Epoch 53/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3674 - val_loss: 0.5946
Epoch 54/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3671 - val_loss: 0.5595
Epoch 55/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3641 - val_loss: 0.6008
Epoch 56/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3642 - val_loss: 0.5686
Epoch 57/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3651 - val_loss: 0.5765
Epoch 58/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3643 - val_loss: 0.6245
Epoch 59/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3590 - val_loss: 0.6471
Epoch 60/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3594 - val_loss: 0.7028
Epoch 61/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3598 - val_loss: 0.6674
Epoch 62/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3563 - val_loss: 0.6225
Epoch 63/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3580 - val_loss: 0.6321
Epoch 64/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3557 - val_loss: 0.5760
Epoch 65/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3546 - val_loss: 0.6225
```

```
Epoch 66/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3540 - val_loss: 0.6625
Epoch 67/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3526 - val_loss: 0.6617
Epoch 68/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3510 - val_loss: 0.6388
Epoch 69/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3499 - val_loss: 0.5939
Epoch 70/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3478 - val_loss: 0.6243
Epoch 71/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3481 - val_loss: 0.6494
Epoch 72/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3466 - val_loss: 0.6364
Epoch 73/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3474 - val_loss: 0.6571
Epoch 74/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3439 - val_loss: 0.7062
Epoch 75/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3433 - val_loss: 0.6207
Epoch 76/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3408 - val_loss: 0.6286
Epoch 77/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3466 - val_loss: 0.6123
Epoch 78/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3385 - val_loss: 0.6157
Epoch 79/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3400 - val_loss: 0.6698
Epoch 80/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3406 - val_loss: 0.6912
Epoch 81/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3384 - val_loss: 0.6272
Epoch 82/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3372 - val_loss: 0.6423
Epoch 83/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3348 - val_loss: 0.6049
Epoch 84/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3360 - val_loss: 0.7150
Epoch 85/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3344 - val_loss: 0.6589
Epoch 86/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3338 - val_loss: 0.6581
Epoch 87/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3317 - val_loss: 0.6916
Epoch 88/100
```

```
50/50 [==============================] - 3s 55ms/step - loss: 0.3327 - val_loss: 0.6662
Epoch 89/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3313 - val_loss: 0.6986
Epoch 90/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3310 - val_loss: 0.6961
Epoch 91/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3302 - val_loss: 0.6680
Epoch 92/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3287 - val_loss: 0.6636
Epoch 93/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3253 - val_loss: 0.6389
Epoch 94/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3253 - val_loss: 0.6800
Epoch 95/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3254 - val_loss: 0.6833
Epoch 96/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3257 - val_loss: 0.6683
Epoch 97/100
50/50 [==============================] - 3s 57ms/step - loss: 0.3220 - val_loss: 0.6326
Epoch 98/100
50/50 [==============================] - 3s 56ms/step - loss: 0.3226 - val_loss: 0.6684
Epoch 99/100
50/50 [==============================] - 3s 55ms/step - loss: 0.3203 - val_loss: 0.6632
Epoch 100/100
50/50 [==============================] - 3s 58ms/step - loss: 0.3189 - val_loss: 0.6668
```


Single Step Training and validation loss for WI_3

Single Step Prediction for WI_3
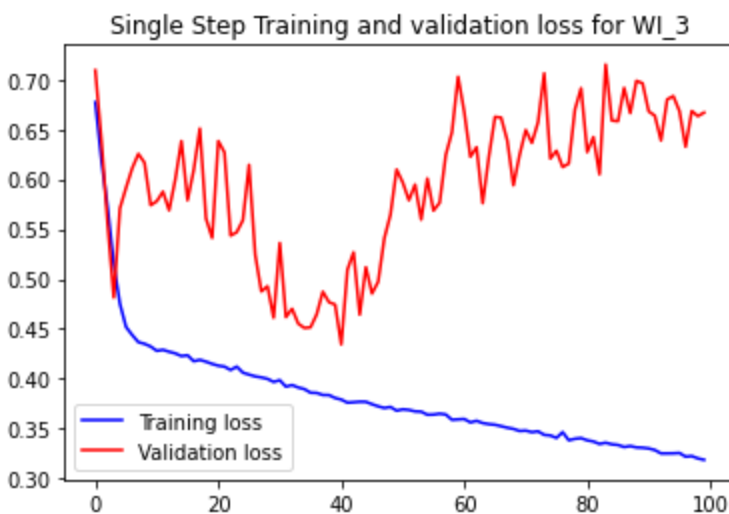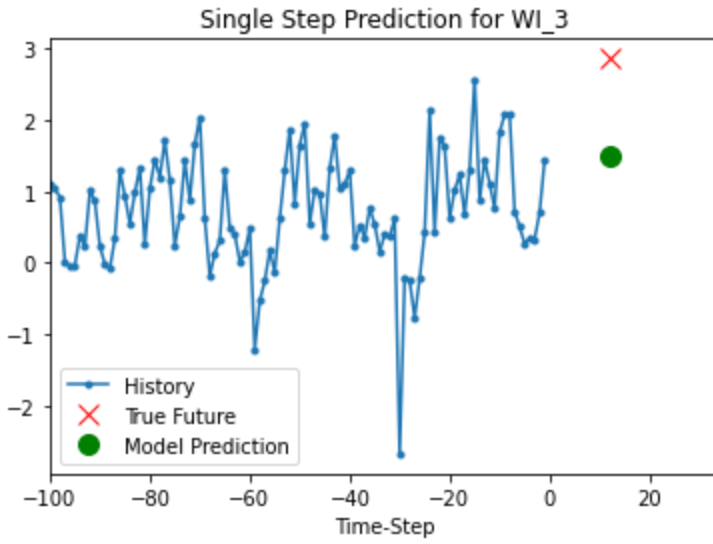
WI_3 - True Future: 5666
WI_3 - Model Prediction: 4556
WI_3 - Model Percentage Error: 19.59%
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