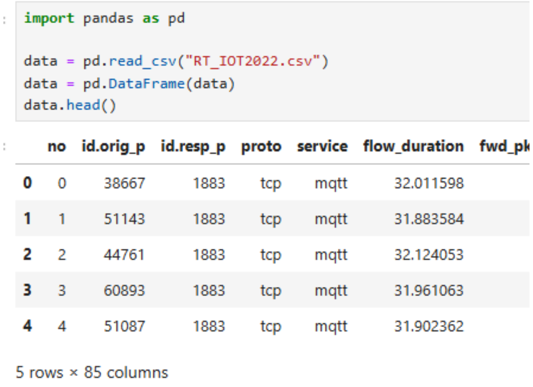
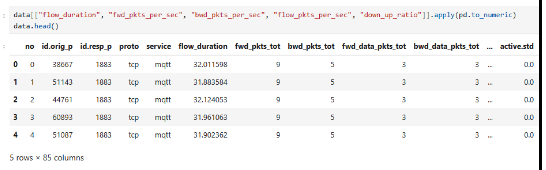
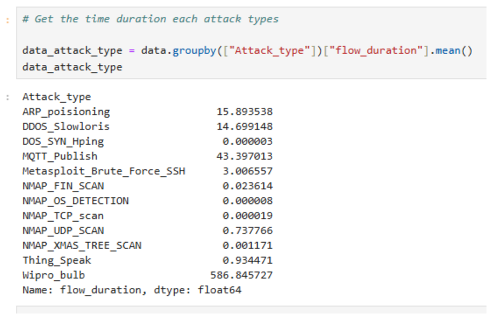
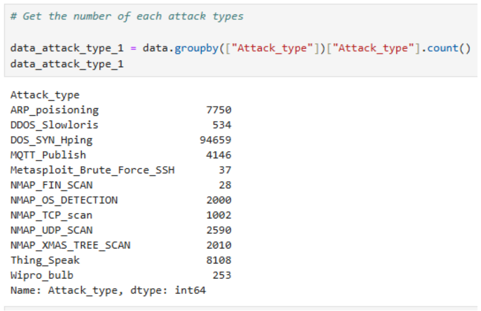
Don Eleazar T. Fernandez
CPE22S3, CPE 311
Midterm Quiz 2

Phase	Activity	Code and Output
Extract	The dataset was extracted from the “RT_IOT2022.csv”.	 import pandas as pd data = pd.read_csv("RT_IOT2022.csv") data = pd.DataFrame(data) data.head() no id.orig_p id.resp_p proto service flow_duration fwd_pk 0 0 38667 1883 tcp mqtt 32.011598 1 1 51143 1883 tcp mqtt 31.883584 2 2 44761 1883 tcp mqtt 32.124053 3 3 60893 1883 tcp mqtt 31.961063 4 4 51087 1883 tcp mqtt 31.902362 5 rows × 85 columns
Transform	The columns were transformed into a different data type for easy data manipulation.	 data[["flow_duration", "fwd_pkts_per_sec", "bwd_pkts_per_sec", "flow_pkts_per_sec", "down_up_ratio"]].apply(pd.to_numeric) data.head() no id.orig_p id.resp_p proto service flow_duration fwd_pkts_tot bwd_pkts_tot fwd_data_pkts_tot bwd_data_pkts_tot ... active.std 0 0 38667 1883 tcp mqtt 32.011598 9 5 3 3 ... 0.0 1 1 51143 1883 tcp mqtt 31.883584 9 5 3 3 ... 0.0 2 2 44761 1883 tcp mqtt 32.124053 9 5 3 3 ... 0.0 3 3 60893 1883 tcp mqtt 31.961063 9 5 3 3 ... 0.0 4 4 51087 1883 tcp mqtt 31.902362 9 5 3 3 ... 0.0 5 rows × 85 columns
Load	The output came to be to result the number per each attack types, as well as the average time for it.	 # Get the time duration each attack types data_attack_type = data.groupby(["Attack_type"])["flow_duration"].mean() data_attack_type Attack_type ARP_poisioning 15.893538 DDOS_Slowloris 14.699148 DOS_SYN_Hping 0.000003 MQTT_Publish 43.397013 Metasploit_Brute_Force_SSH 3.006557 NMAP_FIN_SCAN 0.023614 NMAP_OS_DETECTION 0.000008 NMAP_TCP_scan 0.000019 NMAP_UDP_SCAN 0.737766 NMAP_XMAS_TREE_SCAN 0.001171 Thing_Speak 0.934471 Wipro_bulb 586.845727 Name: flow_duration, dtype: float64  # Get the number of each attack types data_attack_type_1 = data.groupby(["Attack_type"])["Attack_type"].count() data_attack_type_1 Attack_type ARP_poisioning 7750 DDOS_Slowloris 534 DOS_SYN_Hping 94659 MQTT_Publish 4146 Metasploit_Brute_Force_SSH 37 NMAP_FIN_SCAN 28 NMAP_OS_DETECTION 2000 NMAP_TCP_scan 1002 NMAP_UDP_SCAN 2590 NMAP_XMAS_TREE_SCAN 2010 Thing_Speak 8108 Wipro_bulb 253 Name: Attack_type, dtype: int64

To conclude, the midterm quiz done was to