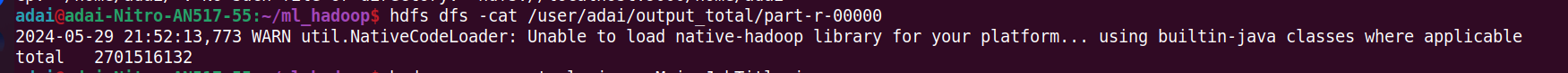
EMRE KAPLAN 2380533

CENG495 HW3 Report

### Task 1. Total amount of machine learning engineer’s salaries (Salary in USD) (total)

total 2701516132



### Task 2. List the average salary (Salary in USD) for each job title (jobtitle)

AI Architect 252001

AI Developer 134684

AI Engineer 163901

AI Product Manager 141766

AI Programmer 764400

AI Research Engineer 360871

AI Research Scientist 104833

AI Scientist 225145

AI Software Engineer 287640

AWS Data Architect 258000

Admin & Data Analyst 60750

Analytics Engineer 158968

Analytics Engineering Manager 325000

Applied Data Scientist 226884

Applied Machine Learning Engineer 140000

Applied Machine Learning Scientist 554842

Applied Research Scientist 60000

Applied Scientist 190034

Autonomous Vehicle Technician 82777

Azure Data Engineer 100000

BI Analyst 128451

BI Data Analyst 645526

BI Data Engineer 60000

BI Developer 103850

Bear Robotics 167500

Big Data Architect 124999

Big Data Developer 117000

Big Data Engineer 492300

Business Data Analyst 206857

Business Intelligence 144810

Business Intelligence Analyst 113095

Business Intelligence Data Analyst 95000

Business Intelligence Developer 99946

Business Intelligence Engineer 139485

Business Intelligence Lead 137379

Business Intelligence Manager 135215

Business Intelligence Specialist 132261

CRM Data Analyst 40000

Cloud Data Architect 250000

Cloud Data Engineer 131000

Cloud Database Engineer 143538

Compliance Data Analyst 45000

Computational Biologist 216750

Computer Vision Engineer 217293

Computer Vision Software Engineer 94200

Consultant Data Engineer 105000

Data Analyst 109317

Data Analyst Lead 109000

Data Analytics Associate 91000

Data Analytics Consultant 86690

Data Analytics Engineer 76400

Data Analytics Lead 255530

Data Analytics Manager 185593

Data Analytics Specialist 98811

Data Architect 160705

Data DevOps Engineer 60794

Data Developer 96914

Data Engineer 149719

Data Infrastructure Engineer 204192

Data Integration Developer 140580

Data Integration Engineer 121272

Data Integration Specialist 218284

Data Lead 157689

Data Management Analyst 92538

Data Management Consultant 92500

Data Management Specialist 104529

Data Manager 108395

Data Modeler 130295

Data Modeller 67500

Data Operations Analyst 96432

Data Operations Associate 75562

Data Operations Engineer 133431

Data Operations Manager 123000

Data Operations Specialist 91403

Data Pipeline Engineer 172500

Data Product Manager 155948

Data Product Owner 119791

Data Quality Analyst 81528

Data Quality Engineer 100000

Data Quality Manager 77500

Data Reporting Analyst 70250

Data Science 161862

Data Science Analyst 101000

Data Science Consultant 117239

Data Science Director 174750

Data Science Engineer 142922

Data Science Lead 166611

Data Science Manager 338386

Data Science Practitioner 133650

Data Science Tech Lead 375000

Data Scientist 178865

Data Scientist Lead 134000

Data Specialist 90247

Data Strategist 102400

Data Strategy Manager 138750

Data Visualization Analyst 120000

Data Visualization Engineer 122975

Data Visualization Specialist 112515

Decision Scientist 164639

Deep Learning Engineer 200445

Deep Learning Researcher 115000

Director of Business Intelligence 187500

Director of Data Science 214804

ETL Developer 122070

ETL Engineer 89166

Encounter Data Management Professional 72812

Finance Data Analyst 128333

Financial Data Analyst 90375

Head of Data 208783

Head of Data Science 584630

Head of Machine Learning 1146000

Insight Analyst 42571

Lead Data Analyst 1095833

Lead Data Engineer 140333

Lead Data Scientist 771578

Lead Machine Learning Engineer 1566200

ML Engineer 271105

ML Ops Engineer 156400

MLOps Engineer 151752

Machine Learning Developer 84300

Machine Learning Engineer 193225

Machine Learning Infrastructure Engineer 165592

Machine Learning Manager 156750

Machine Learning Modeler 173350

Machine Learning Operations Engineer 136527

Machine Learning Research Engineer 67600

Machine Learning Researcher 151157

Machine Learning Scientist 190344

Machine Learning Software Engineer 359653

Machine Learning Specialist 55000

Manager Data Management 1562500

Managing Director Data Science 280000

Marketing Data Analyst 137500

Marketing Data Engineer 90000

Marketing Data Scientist 90000

NLP Engineer 316713

Power BI Developer 60000

Principal Data Analyst 122500

Principal Data Architect 3000000

Principal Data Engineer 156666

Principal Data Scientist 188200

Principal Machine Learning Engineer 181666

Product Data Analyst 291700

Prompt Engineer 204831

Quantitative Research Analyst 51000

Research Analyst 112591

Research Engineer 207604

Research Scientist 191934

Robotics Engineer 140416

Robotics Software Engineer 196625

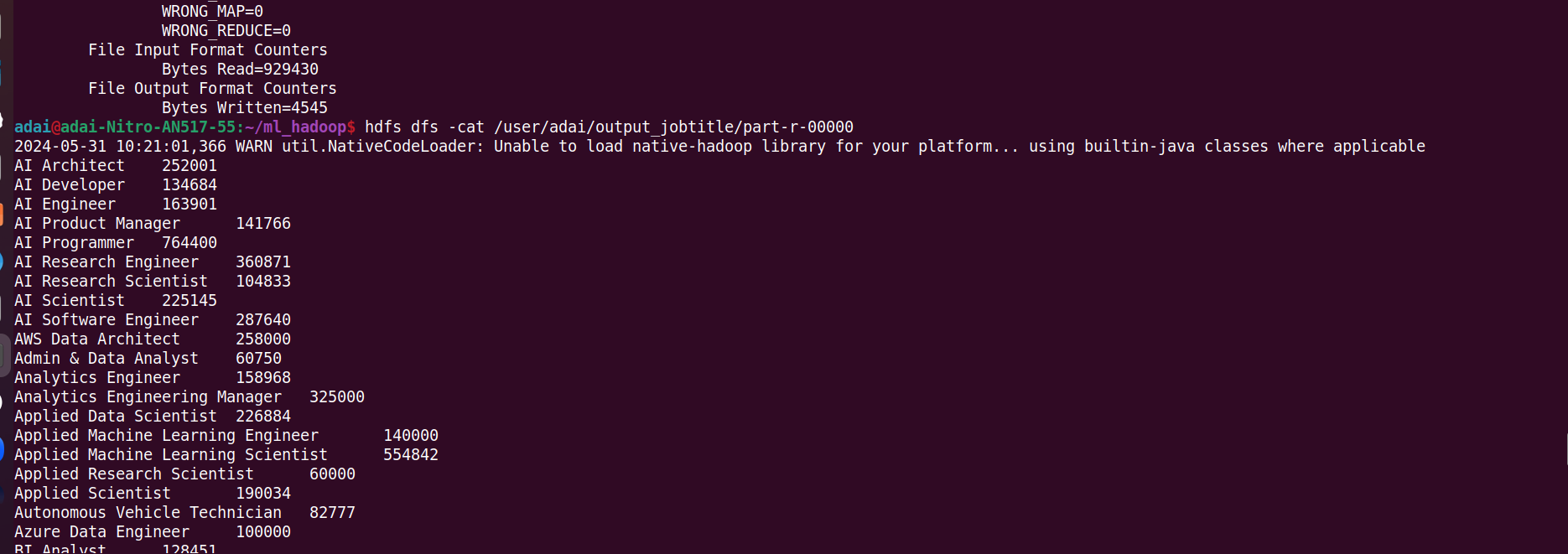
Sales Data Analyst 60000

Software Data Engineer 120000

Staff Data Analyst 84999

Staff Data Scientist 134500

Staff Machine Learning Engineer 185000



### Task 3. List the average salary (Salary in USD) for each job title for SE, MI, and EX experience

### levels (titleexperince)

AI Architect\_EX 200000

AI Architect\_MI 800000

AI Architect\_SE 233631

AI Developer\_EN 106666

AI Developer\_MI 117500

AI Developer\_SE 161000

AI Engineer\_EN 31666

AI Engineer\_EX 178800

AI Engineer\_MI 153075

AI Engineer\_SE 174323

AI Product Manager\_MI 152650

AI Product Manager\_SE 120000

AI Programmer\_EN 1040161

AI Programmer\_MI 30000

AI Programmer\_SE 120000

AI Research Engineer\_EN 684366

AI Research Engineer\_MI 118250

AI Research Scientist\_EN 80000

AI Research Scientist\_MI 84500

AI Research Scientist\_SE 150000

AI Scientist\_EN 322500

AI Scientist\_EX 200000

AI Scientist\_MI 110125

AI Scientist\_SE 257980

AI Software Engineer\_EN 800000

AI Software Engineer\_SE 159550

AWS Data Architect\_MI 258000

Admin & Data Analyst\_EN 50000

Admin & Data Analyst\_MI 66500

Admin & Data Analyst\_SE 60000

Analytics Engineer\_EN 100704

Analytics Engineer\_EX 185916

Analytics Engineer\_MI 140973

Analytics Engineer\_SE 166218

Analytics Engineering Manager\_SE 325000

Applied Data Scientist\_EN 45500

Applied Data Scientist\_MI 501250

Applied Data Scientist\_SE 179250

Applied Machine Learning Engineer\_EX 225000

Applied Machine Learning Engineer\_MI 97500

Applied Machine Learning Scientist\_EN 1356333

Applied Machine Learning Scientist\_MI 468200

Applied Machine Learning Scientist\_SE 105350

Applied Research Scientist\_SE 60000

Applied Scientist\_EN 153442

Applied Scientist\_MI 178616

Applied Scientist\_SE 195430

Autonomous Vehicle Technician\_MI 82777

Azure Data Engineer\_EN 100000

Azure Data Engineer\_SE 100000

BI Analyst\_EN 96080

BI Analyst\_MI 108940

BI Analyst\_SE 140761

BI Data Analyst\_EN 55714

BI Data Analyst\_EX 150000

BI Data Analyst\_MI 1288666

BI Data Analyst\_SE 63500

BI Data Engineer\_EN 60000

BI Developer\_EN 100650

BI Developer\_EX 167250

BI Developer\_MI 92261

BI Developer\_SE 111794

Bear Robotics\_MI 167500

Big Data Architect\_SE 124999

Big Data Developer\_MI 117000

Big Data Engineer\_EN 354400

Big Data Engineer\_MI 819000

Big Data Engineer\_SE 131666

Business Data Analyst\_EN 53600

Business Data Analyst\_MI 323545

Business Data Analyst\_SE 103400

Business Intelligence Analyst\_EN 97028

Business Intelligence Analyst\_EX 155000

Business Intelligence Analyst\_MI 114776

Business Intelligence Analyst\_SE 121827

Business Intelligence Data Analyst\_EN 99000

Business Intelligence Data Analyst\_MI 91000

Business Intelligence Developer\_EN 98700

Business Intelligence Developer\_EX 142250

Business Intelligence Developer\_MI 81166

Business Intelligence Developer\_SE 111591

Business Intelligence Engineer\_EN 90630

Business Intelligence Engineer\_EX 175900

Business Intelligence Engineer\_MI 115082

Business Intelligence Engineer\_SE 144051

Business Intelligence Lead\_EN 150747

Business Intelligence Lead\_SE 134037

Business Intelligence Manager\_MI 141850

Business Intelligence Manager\_SE 75500

Business Intelligence Specialist\_MI 88756

Business Intelligence Specialist\_SE 154014

Business Intelligence\_EN 117363

Business Intelligence\_EX 197057

Business Intelligence\_MI 131382

Business Intelligence\_SE 141979

CRM Data Analyst\_SE 40000

Cloud Data Architect\_SE 250000

Cloud Data Engineer\_EN 122000

Cloud Data Engineer\_MI 120000

Cloud Data Engineer\_SE 160000

Cloud Database Engineer\_MI 136354

Cloud Database Engineer\_SE 149696

Compliance Data Analyst\_EN 45000

Computational Biologist\_SE 216750

Computer Vision Engineer\_EN 153750

Computer Vision Engineer\_MI 367750

Computer Vision Engineer\_SE 202808

Computer Vision Software Engineer\_EN 113333

Computer Vision Software Engineer\_MI 81000

Computer Vision Software Engineer\_SE 50000

Consultant Data Engineer\_SE 105000

Data Analyst Lead\_EN 18000

Data Analyst Lead\_MI 200000

Data Analyst\_EN 87211

Data Analyst\_EX 111479

Data Analyst\_MI 100489

Data Analyst\_SE 122471

Data Analytics Associate\_SE 91000

Data Analytics Consultant\_EN 50000

Data Analytics Consultant\_MI 91932

Data Analytics Engineer\_EN 20000

Data Analytics Engineer\_MI 122500

Data Analytics Engineer\_SE 58500

Data Analytics Lead\_MI 541666

Data Analytics Lead\_SE 212610

Data Analytics Manager\_EN 27000

Data Analytics Manager\_EX 147500

Data Analytics Manager\_MI 205071

Data Analytics Manager\_SE 147921

Data Analytics Specialist\_EN 61450

Data Analytics Specialist\_MI 110500

Data Analytics Specialist\_SE 111647

Data Architect\_EX 181250

Data Architect\_MI 127333

Data Architect\_SE 162393

Data DevOps Engineer\_EN 44382

Data DevOps Engineer\_MI 88000

Data DevOps Engineer\_SE 50000

Data Developer\_EN 60000

Data Developer\_MI 96734

Data Developer\_SE 104620

Data Engineer\_EN 166669

Data Engineer\_EX 194195

Data Engineer\_MI 122105

Data Engineer\_SE 156616

Data Infrastructure Engineer\_MI 217288

Data Infrastructure Engineer\_SE 196708

Data Integration Developer\_SE 140580

Data Integration Engineer\_EN 125000

Data Integration Engineer\_MI 116844

Data Integration Engineer\_SE 125875

Data Integration Specialist\_EN 96605

Data Integration Specialist\_MI 87875

Data Integration Specialist\_SE 3000000

Data Lead\_EX 215333

Data Lead\_MI 122500

Data Lead\_SE 142385

Data Management Analyst\_EN 80300

Data Management Analyst\_MI 100492

Data Management Analyst\_SE 174534

Data Management Consultant\_SE 92500

Data Management Specialist\_MI 75457

Data Management Specialist\_SE 121141

Data Manager\_EN 89575

Data Manager\_EX 93100

Data Manager\_MI 97002

Data Manager\_SE 122117

Data Modeler\_MI 113108

Data Modeler\_SE 134983

Data Modeller\_MI 67500

Data Operations Analyst\_EN 85687

Data Operations Analyst\_MI 72685

Data Operations Analyst\_SE 111512

Data Operations Associate\_EN 61687

Data Operations Associate\_MI 82500

Data Operations Engineer\_MI 80000

Data Operations Engineer\_SE 165490

Data Operations Manager\_MI 110000

Data Operations Manager\_SE 136000

Data Operations Specialist\_MI 92666

Data Operations Specialist\_SE 90140

Data Pipeline Engineer\_SE 172500

Data Product Manager\_MI 148364

Data Product Manager\_SE 162015

Data Product Owner\_MI 117829

Data Product Owner\_SE 125680

Data Quality Analyst\_EN 53375

Data Quality Analyst\_MI 75833

Data Quality Analyst\_SE 92012

Data Quality Engineer\_EN 22000

Data Quality Engineer\_SE 119500

Data Quality Manager\_MI 46500

Data Quality Manager\_SE 139500

Data Reporting Analyst\_EN 70250

Data Science Analyst\_EN 101000

Data Science Consultant\_EN 53833

Data Science Consultant\_EX 59000

Data Science Consultant\_MI 84800

Data Science Consultant\_SE 132408

Data Science Director\_EX 174750

Data Science Engineer\_EN 95000

Data Science Engineer\_EX 140000

Data Science Engineer\_MI 132233

Data Science Engineer\_SE 151744

Data Science Lead\_MI 156783

Data Science Lead\_SE 176438

Data Science Manager\_EX 194128

Data Science Manager\_MI 280946

Data Science Manager\_SE 373816

Data Science Practitioner\_MI 115600

Data Science Practitioner\_SE 144480

Data Science Tech Lead\_SE 375000

Data Science\_EN 71287

Data Science\_EX 214556

Data Science\_MI 139762

Data Science\_SE 171526

Data Scientist Lead\_MI 85000

Data Scientist Lead\_SE 183000

Data Scientist\_EN 182005

Data Scientist\_EX 208105

Data Scientist\_MI 197606

Data Scientist\_SE 171597

Data Specialist\_EN 66680

Data Specialist\_MI 85936

Data Specialist\_SE 106240

Data Strategist\_MI 90425

Data Strategist\_SE 108388

Data Strategy Manager\_SE 138750

Data Visualization Analyst\_SE 120000

Data Visualization Engineer\_SE 122975

Data Visualization Specialist\_EN 91050

Data Visualization Specialist\_MI 113001

Data Visualization Specialist\_SE 122275

Decision Scientist\_MI 173350

Decision Scientist\_SE 163006

Deep Learning Engineer\_EN 135000

Deep Learning Engineer\_MI 90000

Deep Learning Engineer\_SE 295890

Deep Learning Researcher\_SE 115000

Director of Business Intelligence\_EX 187500

Director of Data Science\_EX 224519

Director of Data Science\_MI 204500

Director of Data Science\_SE 131000

ETL Developer\_MI 103887

ETL Developer\_SE 129343

ETL Engineer\_EX 150000

ETL Engineer\_MI 58750

Encounter Data Management Professional\_MI 62625

Encounter Data Management Professional\_SE 83000

Finance Data Analyst\_EN 40000

Finance Data Analyst\_SE 172500

Financial Data Analyst\_EN 78250

Financial Data Analyst\_MI 102500

Head of Data Science\_EX 190556

Head of Data Science\_MI 2555000

Head of Data\_EX 215705

Head of Data\_MI 30000

Head of Data\_SE 168400

Head of Machine Learning\_EX 1146000

Insight Analyst\_EN 45000

Insight Analyst\_MI 39100

Insight Analyst\_SE 57500

Lead Data Analyst\_MI 1281000

Lead Data Analyst\_SE 170000

Lead Data Engineer\_EX 150000

Lead Data Engineer\_MI 56000

Lead Data Engineer\_SE 159000

Lead Data Scientist\_MI 82500

Lead Data Scientist\_SE 924707

Lead Machine Learning Engineer\_SE 1566200

ML Engineer\_EN 99375

ML Engineer\_EX 210950

ML Engineer\_MI 490439

ML Engineer\_SE 208521

ML Ops Engineer\_MI 156400

MLOps Engineer\_EN 95650

MLOps Engineer\_MI 145290

MLOps Engineer\_SE 170080

Machine Learning Developer\_EN 73600

Machine Learning Developer\_MI 105000

Machine Learning Developer\_SE 80000

Machine Learning Engineer\_EN 111315

Machine Learning Engineer\_EX 235030

Machine Learning Engineer\_MI 162748

Machine Learning Engineer\_SE 201485

Machine Learning Infrastructure Engineer\_MI 118630

Machine Learning Infrastructure Engineer\_SE 172069

Machine Learning Manager\_SE 156750

Machine Learning Modeler\_SE 173350

Machine Learning Operations Engineer\_EN 150000

Machine Learning Operations Engineer\_MI 142187

Machine Learning Operations Engineer\_SE 120000

Machine Learning Research Engineer\_EN 62666

Machine Learning Research Engineer\_MI 75000

Machine Learning Researcher\_MI 150158

Machine Learning Researcher\_SE 152488

Machine Learning Scientist\_EN 112666

Machine Learning Scientist\_EX 190000

Machine Learning Scientist\_MI 233893

Machine Learning Scientist\_SE 179929

Machine Learning Software Engineer\_MI 747400

Machine Learning Software Engineer\_SE 218654

Machine Learning Specialist\_MI 55000

Manager Data Management\_SE 1562500

Managing Director Data Science\_EX 280000

Marketing Data Analyst\_SE 137500

Marketing Data Engineer\_EN 90000

Marketing Data Scientist\_SE 90000

NLP Engineer\_EX 175000

NLP Engineer\_MI 986000

NLP Engineer\_SE 144270

Power BI Developer\_MI 60000

Principal Data Analyst\_MI 75000

Principal Data Analyst\_SE 170000

Principal Data Architect\_SE 3000000

Principal Data Engineer\_SE 156666

Principal Data Scientist\_EX 416000

Principal Data Scientist\_MI 151000

Principal Data Scientist\_SE 164375

Principal Machine Learning Engineer\_SE 181666

Product Data Analyst\_EN 91600

Product Data Analyst\_MI 503333

Product Data Analyst\_SE 57000

Prompt Engineer\_MI 182552

Prompt Engineer\_SE 214114

Quantitative Research Analyst\_EN 51000

Research Analyst\_EN 104789

Research Analyst\_EX 178500

Research Analyst\_MI 108144

Research Analyst\_SE 124339

Research Engineer\_EN 294243

Research Engineer\_MI 197691

Research Engineer\_SE 196920

Research Scientist\_EN 164461

Research Scientist\_EX 161666

Research Scientist\_MI 169757

Research Scientist\_SE 203050

Robotics Engineer\_MI 80000

Robotics Engineer\_SE 152500

Robotics Software Engineer\_MI 175750

Robotics Software Engineer\_SE 217500

Sales Data Analyst\_MI 60000

Software Data Engineer\_MI 100000

Software Data Engineer\_SE 130000

Staff Data Analyst\_EN 60000

Staff Data Analyst\_EX 15000

Staff Data Analyst\_MI 179998

Staff Data Scientist\_SE 134500

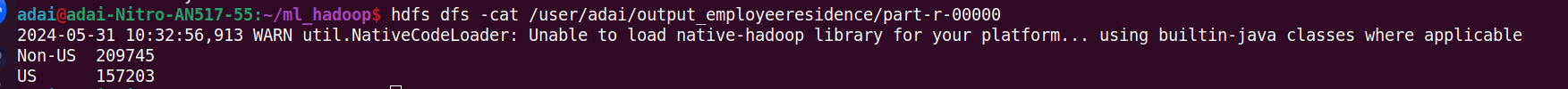
Staff Machine Learning Engineer\_SE 185000

### Task 4. Separate the employee residences according to whether they are US or non-US, thenlist the average salary (Salary in USD) for the salaries in those two separate categories.

### Output US employee residence salaries in part-r-00000 and non US employee residence salaries in part-r-00001 (employeeresidence)

Non-US 209745

US 157203



### Task 5. Partition the salaries by work year; first partition is the salaries in the 2024 (work year =2024), the second partition is for salaries in the 2023 (work year = 2023), and final partition is for salaries before 2023 (work year < 2023). Report the average salary (Salary inUSD) for these 3 partitions (part-r-00000 to part-r-00002) (averageyear).

2023 159319

2024 152319

Before 2023 218808

