**NaiveBayes**

**RACE:**

Attempting to enforce demographic parity...

--------------------DEMOGRAPHIC PARITY RESULTS--------------------

Probability of positive prediction for African-American: 0.591824644549763

Probability of positive prediction for Caucasian: 0.5733620424484774

Probability of positive prediction for Hispanic: 0.5772646536412078

Probability of positive prediction for Other: 0.5857988165680473

Accuracy for African-American: 0.6170023696682464

Accuracy for Caucasian: 0.6291910181482621

Accuracy for Hispanic: 0.6252220248667851

Accuracy for Other: 0.6420118343195266

FPR for African-American: 0.4711864406779661

FPR for Caucasian: 0.4441710243002153

FPR for Hispanic: 0.459214501510574

FPR for Other: 0.45365853658536587

FNR for African-American: 0.3145712782745923

FNR for Caucasian: 0.29744693940326056

FNR for Hispanic: 0.2543103448275862

FNR for Other: 0.21052631578947367

TPR for African-American: 0.6854287217254077

TPR for Caucasian: 0.7025530605967394

TPR for Hispanic: 0.7456896551724138

TPR for Other: 0.7894736842105263

TNR for African-American: 0.5288135593220339

TNR for Caucasian: 0.5558289756997847

TNR for Hispanic: 0.540785498489426

TNR for Other: 0.5463414634146342

Threshold for African-American: 0.35999999999999943

Threshold for Caucasian: 0.15999999999999925

Threshold for Hispanic: 0.03999999999999925

Threshold for Other: 0.02999999999999925

Total cost:

$-762,416,820

Total accuracy: 0.6255682345301048

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Attempting to enforce equal opportunity...

--------------------EQUAL OPPORTUNITY RESULTS--------------------

Accuracy for African-American: 0.6220379146919431

Accuracy for Caucasian: 0.6291910181482621

Accuracy for Hispanic: 0.6483126110124334

Accuracy for Other: 0.6390532544378699

FPR for African-American: 0.4935593220338983

FPR for Caucasian: 0.4441710243002153

FPR for Hispanic: 0.39274924471299094

FPR for Other: 0.40487804878048783

FNR for African-American: 0.28826933193056287

FNR for Caucasian: 0.29744693940326056

FNR for Hispanic: 0.29310344827586204

FNR for Other: 0.2932330827067669

TPR for African-American: 0.7117306680694371

TPR for Caucasian: 0.7025530605967394

TPR for Hispanic: 0.7068965517241379

TPR for Other: 0.7067669172932332

TNR for African-American: 0.5064406779661017

TNR for Caucasian: 0.5558289756997847

TNR for Hispanic: 0.607250755287009

TNR for Other: 0.5951219512195122

Threshold for African-American: 0.3099999999999994

Threshold for Caucasian: 0.15999999999999925

Threshold for Hispanic: 0.08999999999999925

Threshold for Other: 0.06999999999999926

Total cost:

$-758,282,364

Total accuracy: 0.6282586510808053

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Attempting to enforce maximum profit...

--------------------MAXIMUM PROFIT RESULTS--------------------

Accuracy for African-American: 0.6273696682464455

Accuracy for Caucasian: 0.6291910181482621

Accuracy for Hispanic: 0.6820603907637656

Accuracy for Other: 0.6923076923076923

FPR for African-American: 0.5410169491525424

FPR for Caucasian: 0.4441710243002153

FPR for Hispanic: 0.1933534743202417

FPR for Other: 0.18536585365853658

FNR for African-American: 0.24197790636507102

FNR for Caucasian: 0.29744693940326056

FNR for Hispanic: 0.4956896551724138

FNR for Other: 0.49624060150375937

TPR for African-American: 0.758022093634929

TPR for Caucasian: 0.7025530605967394

TPR for Hispanic: 0.5043103448275862

TPR for Other: 0.5037593984962406

TNR for African-American: 0.4589830508474576

TNR for Caucasian: 0.5558289756997847

TNR for Hispanic: 0.8066465256797584

TNR for Other: 0.8146341463414635

Threshold for African-American: 0.2100000000000008

Threshold for Caucasian: 0.16000000000000075

Threshold for Hispanic: 0.500000000000001

Threshold for Other: 0.48000000000000104

Total cost:

$-750,831,084

Total accuracy: 0.6333611652286854

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Attempting to enforce predictive parity...

--------------------PREDICTIVE PARITY RESULTS--------------------

Accuracy for African-American: 0.620260663507109

Accuracy for Caucasian: 0.6282682251614887

Accuracy for Hispanic: 0.6731793960923623

Accuracy for Other: 0.6834319526627219

PPV for African-American: 0.6279454319966928

PPV for Caucasian: 0.6186681844052362

PPV for Hispanic: 0.62

PPV for Other: 0.6203703703703703

FPR for African-American: 0.6101694915254238

FPR for Caucasian: 0.41218086742540755

FPR for Hispanic: 0.229607250755287

FPR for Other: 0.2

FNR for African-American: 0.20094687006838505

FNR for Caucasian: 0.3312826822516149

FNR for Hispanic: 0.46551724137931033

FNR for Other: 0.49624060150375937

TPR for African-American: 0.7990531299316149

TPR for Caucasian: 0.6687173177483852

TPR for Hispanic: 0.5344827586206897

TPR for Other: 0.5037593984962406

TNR for African-American: 0.38983050847457623

TNR for Caucasian: 0.5878191325745925

TNR for Hispanic: 0.770392749244713

TNR for Other: 0.8

Threshold for African-American: 0.12000000000000073

Threshold for Caucasian: 0.2200000000000008

Threshold for Hispanic: 0.3500000000000009

Threshold for Other: 0.460000000000001

Total cost:

$-756,118,566

Total accuracy: 0.6298357918174228

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Attempting to enforce single threshold...

--------------------SINGLE THRESHOLD RESULTS--------------------

Accuracy for African-American: 0.6226303317535545

Accuracy for Caucasian: 0.6291910181482621

Accuracy for Hispanic: 0.6607460035523979

Accuracy for Other: 0.6745562130177515

FPR for African-American: 0.5810169491525424

FPR for Caucasian: 0.4441710243002153

FPR for Hispanic: 0.32628398791540786

FPR for Other: 0.2975609756097561

FNR for African-American: 0.2193582325092057

FNR for Caucasian: 0.29744693940326056

FNR for Hispanic: 0.3577586206896552

FNR for Other: 0.3684210526315789

TPR for African-American: 0.7806417674907943

TPR for Caucasian: 0.7025530605967394

TPR for Hispanic: 0.6422413793103448

TPR for Other: 0.631578947368421

TNR for African-American: 0.41898305084745757

TNR for Caucasian: 0.5558289756997847

TNR for Hispanic: 0.6737160120845922

TNR for Other: 0.7024390243902439

Threshold for African-American: 0.16000000000000075

Threshold for Caucasian: 0.16000000000000075

Threshold for Hispanic: 0.16000000000000075

Threshold for Other: 0.16000000000000075

Total cost:

$-754,522,380

Total accuracy: 0.6302068837554504

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Postprocessing took approximately: 0:00:31.719324 seconds

**SVM:**

Attempting to enforce demographic parity...

--------------------DEMOGRAPHIC PARITY RESULTS--------------------

Probability of positive prediction for African-American: 0.6167061611374408

Probability of positive prediction for Caucasian: 0.6087357736081206

Probability of positive prediction for Hispanic: 0.6127886323268206

Probability of positive prediction for Other: 0.5976331360946746

Accuracy for African-American: 0.6252962085308057

Accuracy for Caucasian: 0.6334973854198708

Accuracy for Hispanic: 0.5968028419182948

Accuracy for Other: 0.6005917159763313

FPR for African-American: 0.4901694915254237

FPR for Caucasian: 0.47523838818824976

FPR for Hispanic: 0.513595166163142

FPR for Other: 0.4975609756097561

FNR for African-American: 0.28511309836927934

FNR for Caucasian: 0.25776684097200864

FNR for Hispanic: 0.24568965517241378

FNR for Other: 0.24812030075187969

TPR for African-American: 0.7148869016307207

TPR for Caucasian: 0.7422331590279914

TPR for Hispanic: 0.7543103448275862

TPR for Other: 0.7518796992481203

TNR for African-American: 0.5098305084745762

TNR for Caucasian: 0.5247616118117502

TNR for Hispanic: 0.48640483383685795

TNR for Other: 0.5024390243902439

Threshold for African-American: 0.11999999999999923

Threshold for Caucasian: 0.08999999999999925

Threshold for Hispanic: 0.04999999999999925

Threshold for Other: 0.02999999999999925

Total cost:

$-757,300,176

Total accuracy: 0.6279803321272845

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Attempting to enforce equal opportunity...

--------------------EQUAL OPPORTUNITY RESULTS--------------------

Accuracy for African-American: 0.6365521327014217

Accuracy for Caucasian: 0.6091971701015072

Accuracy for Hispanic: 0.5488454706927176

Accuracy for Other: 0.5443786982248521

FPR for African-American: 0.6250847457627119

FPR for Caucasian: 0.6124269455552138

FPR for Hispanic: 0.649546827794562

FPR for Other: 0.6439024390243903

FNR for African-American: 0.1604418726985797

FNR for Caucasian: 0.16917871424177175

FNR for Hispanic: 0.16810344827586207

FNR for Other: 0.16541353383458646

TPR for African-American: 0.8395581273014203

TPR for Caucasian: 0.8308212857582282

TPR for Hispanic: 0.8318965517241379

TPR for Other: 0.8345864661654135

TNR for African-American: 0.3749152542372881

TNR for Caucasian: 0.3875730544447862

TNR for Hispanic: 0.35045317220543803

TNR for Other: 0.35609756097560974

Threshold for African-American: 0.08999999999999925

Threshold for Caucasian: 0.04999999999999925

Threshold for Hispanic: 0.02999999999999925

Threshold for Other: 0.019999999999999248

Total cost:

$-774,369,540

Total accuracy: 0.6125800166991372

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Attempting to enforce maximum profit...

--------------------MAXIMUM PROFIT RESULTS--------------------

Accuracy for African-American: 0.6445497630331753

Accuracy for Caucasian: 0.6334973854198708

Accuracy for Hispanic: 0.6536412078152753

Accuracy for Other: 0.6745562130177515

FPR for African-American: 0.6291525423728813

FPR for Caucasian: 0.47523838818824976

FPR for Hispanic: 0.3474320241691843

FPR for Other: 0.1024390243902439

FNR for African-American: 0.14308258811152025

FNR for Caucasian: 0.25776684097200864

FNR for Hispanic: 0.3448275862068966

FNR for Other: 0.6691729323308271

TPR for African-American: 0.8569174118884797

TPR for Caucasian: 0.7422331590279914

TPR for Hispanic: 0.6551724137931034

TPR for Other: 0.3308270676691729

TNR for African-American: 0.3708474576271187

TNR for Caucasian: 0.5247616118117502

TNR for Hispanic: 0.6525679758308157

TNR for Other: 0.8975609756097561

Threshold for African-American: 0.08000000000000075

Threshold for Caucasian: 0.09000000000000075

Threshold for Hispanic: 0.09000000000000075

Threshold for Other: 0.6800000000000012

Total cost:

$-739,317,978

Total accuracy: 0.6392986362371278

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Attempting to enforce predictive parity...

--------------------PREDICTIVE PARITY RESULTS--------------------

Accuracy for African-American: 0.6238151658767772

Accuracy for Caucasian: 0.6334973854198708

Accuracy for Hispanic: 0.6447602131438721

Accuracy for Other: 0.6627218934911243

PPV for African-American: 0.6109743228983469

PPV for Caucasian: 0.6096513390601314

PPV for Hispanic: 0.6095890410958904

PPV for Other: 0.6043956043956044

FPR for African-American: 0.7498305084745762

FPR for Caucasian: 0.47523838818824976

FPR for Hispanic: 0.17220543806646527

FPR for Other: 0.17560975609756097

FNR for African-American: 0.08627038400841662

FNR for Caucasian: 0.25776684097200864

FNR for Hispanic: 0.6163793103448276

FNR for Other: 0.5864661654135338

TPR for African-American: 0.9137296159915834

TPR for Caucasian: 0.7422331590279914

TPR for Hispanic: 0.3836206896551724

TPR for Other: 0.4135338345864662

TNR for African-American: 0.2501694915254238

TNR for Caucasian: 0.5247616118117502

TNR for Hispanic: 0.8277945619335347

TNR for Other: 0.8243902439024391

Threshold for African-American: 0.04000000000000076

Threshold for Caucasian: 0.09000000000000075

Threshold for Hispanic: 0.36000000000000093

Threshold for Other: 0.38000000000000095

Total cost:

$-749,328,894

Total accuracy: 0.6319695704610817

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Attempting to enforce single threshold...

--------------------SINGLE THRESHOLD RESULTS--------------------

Accuracy for African-American: 0.6383293838862559

Accuracy for Caucasian: 0.6310366041218086

Accuracy for Hispanic: 0.6341030195381883

Accuracy for Other: 0.6597633136094675

FPR for African-American: 0.6569491525423728

FPR for Caucasian: 0.5392187019378653

FPR for Hispanic: 0.4199395770392749

FPR for Other: 0.34146341463414637

FNR for African-American: 0.13256180957390848

FNR for Caucasian: 0.19870808981851737

FNR for Hispanic: 0.28879310344827586

FNR for Other: 0.3383458646616541

TPR for African-American: 0.8674381904260915

TPR for Caucasian: 0.8012919101814826

TPR for Hispanic: 0.7112068965517242

TPR for Other: 0.6616541353383458

TNR for African-American: 0.34305084745762715

TNR for Caucasian: 0.46078129806213475

TNR for Hispanic: 0.5800604229607251

TNR for Other: 0.6585365853658536

Threshold for African-American: 0.07000000000000076

Threshold for Caucasian: 0.07000000000000076

Threshold for Hispanic: 0.07000000000000076

Threshold for Other: 0.07000000000000076

Total cost:

$-743,930,460

Total accuracy: 0.6343816680582615

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