**Machine Learning**

**CSE-6363**

**PROJECT 2**

**Assignment 1**

**Linear Regression**

Deion Nwaefulu

06/28/2023

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\_\_\_\_\_\_\_\_\_\_ model1 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.14824505503152843 for step 1

Validation Mean Squared Error: 0.14024013604733296 for step 2

Validation Mean Squared Error: 0.13474653733767591 for step 3

Validation Mean Squared Error: 0.12967796470694382 for step 4

Validation Mean Squared Error: 0.12600115019945698 for step 5

Validation Mean Squared Error: 0.12365509671136742 for step 6

Validation Mean Squared Error: 0.12225174183871408 for step 7

Validation Mean Squared Error: 0.12142819517450856 for step 8

Validation Mean Squared Error: 0.1209247112731552 for step 9

Validation Mean Squared Error: 0.12057497660607273 for step 10

Validation Mean Squared Error: 0.12027970879353893 for step 11

Validation Mean Squared Error: 0.11998346210453817 for step 12

Validation Mean Squared Error: 0.11965801984072422 for step 13

Validation Mean Squared Error: 0.11929141543941937 for step 14

Validation Mean Squared Error: 0.11888096737609269 for step 15

Validation Mean Squared Error: 0.11842898196474141 for step 16

Validation Mean Squared Error: 0.11794016924354853 for step 17

Validation Mean Squared Error: 0.11742013575939174 for step 18

Validation Mean Squared Error: 0.11687454282592714 for step 19

Validation Mean Squared Error: 0.11630866868256817 for step 20

Validation Mean Squared Error: 0.1157272103022351 for step 21

Validation Mean Squared Error: 0.11513422290782573 for step 22

Validation Mean Squared Error: 0.11453313477822424 for step 23

Validation Mean Squared Error: 0.11392679978722965 for step 24

Validation Mean Squared Error: 0.11331756562451836 for step 25

Validation Mean Squared Error: 0.112707345216105 for step 26

Validation Mean Squared Error: 0.11209768468467021 for step 27

Validation Mean Squared Error: 0.11148982466638317 for step 28

Validation Mean Squared Error: 0.11088475381939668 for step 29

Validation Mean Squared Error: 0.11028325448237015 for step 30

Validation Mean Squared Error: 0.10968594102297406 for step 31

Validation Mean Squared Error: 0.10909329167730798 for step 32

Validation Mean Squared Error: 0.10850567475834696 for step 33

Validation Mean Squared Error: 0.10792337008847022 for step 34

Validation Mean Squared Error: 0.10734658643811519 for step 35

Validation Mean Squared Error: 0.10677547565904308 for step 36

Validation Mean Squared Error: 0.1062101441032839 for step 37

Validation Mean Squared Error: 0.10565066182636151 for step 38

Validation Mean Squared Error: 0.10509706999011488 for step 39

Validation Mean Squared Error: 0.10454938680782608 for step 40

Validation Mean Squared Error: 0.10400761231245051 for step 41

Validation Mean Squared Error: 0.1034717321767735 for step 42

Validation Mean Squared Error: 0.102941720771178 for step 43

Validation Mean Squared Error: 0.1024175436092063 for step 44

Validation Mean Squared Error: 0.10189915930207095 for step 45

Validation Mean Squared Error: 0.10138652111965211 for step 46

Validation Mean Squared Error: 0.10087957823637597 for step 47

Validation Mean Squared Error: 0.10037827672490447 for step 48

Validation Mean Squared Error: 0.09988256034809402 for step 49

Validation Mean Squared Error: 0.09939237118965483 for step 50

Validation Mean Squared Error: 0.09890765015587956 for step 51

Validation Mean Squared Error: 0.09842833737434865 for step 52

Validation Mean Squared Error: 0.09795437251032882 for step 53

Validation Mean Squared Error: 0.09748569501743679 for step 54

Validation Mean Squared Error: 0.09702224433581226 for step 55

Validation Mean Squared Error: 0.09656396004838405 for step 56

Validation Mean Squared Error: 0.0961107820036909 for step 57

Validation Mean Squared Error: 0.09566265041201168 for step 58

Validation Mean Squared Error: 0.09521950592020513 for step 59

Validation Mean Squared Error: 0.09478128966957085 for step 60

Validation Mean Squared Error: 0.09434794334017492 for step 61

Validation Mean Squared Error: 0.09391940918439119 for step 62

Validation Mean Squared Error: 0.09349563005185377 for step 63

Validation Mean Squared Error: 0.09307654940757602 for step 64

Validation Mean Squared Error: 0.09266211134463335 for step 65

Validation Mean Squared Error: 0.09225226059253158 for step 66

Validation Mean Squared Error: 0.09184694252215035 for step 67

Validation Mean Squared Error: 0.0914461031479752 for step 68

Validation Mean Squared Error: 0.09104968912818702 for step 69

Validation Mean Squared Error: 0.09065764776306252 for step 70

Validation Mean Squared Error: 0.09026992699204724 for step 71

Validation Mean Squared Error: 0.0898864753897911 for step 72

Validation Mean Squared Error: 0.08950724216137543 for step 73

Validation Mean Squared Error: 0.08913217713691748 for step 74

Validation Mean Squared Error: 0.08876123076569498 for step 75

Validation Mean Squared Error: 0.08839435410991214 for step 76

Validation Mean Squared Error: 0.0880314988381957 for step 77

Validation Mean Squared Error: 0.08767261721889871 for step 78

Validation Mean Squared Error: 0.08731766211326679 for step 79

Validation Mean Squared Error: 0.08696658696851722 for step 80

Validation Mean Squared Error: 0.08661934581086568 for step 81

Validation Mean Squared Error: 0.08627589323853116 for step 82

Validation Mean Squared Error: 0.08593618441474023 for step 83

Validation Mean Squared Error: 0.08560017506075183 for step 84

Validation Mean Squared Error: 0.08526782144891491 for step 85

Validation Mean Squared Error: 0.08493908039576963 for step 86

Validation Mean Squared Error: 0.08461390925520326 for step 87

Validation Mean Squared Error: 0.08429226591166486 for step 88

Validation Mean Squared Error: 0.08397410877344551 for step 89

Validation Mean Squared Error: 0.08365939676602775 for step 90

Validation Mean Squared Error: 0.08334808932550622 for step 91

Validation Mean Squared Error: 0.08304014639208245 for step 92

Validation Mean Squared Error: 0.08273552840363547 for step 93

Validation Mean Squared Error: 0.08243419628936789 for step 94

Validation Mean Squared Error: 0.08213611146352943 for step 95

Validation Mean Squared Error: 0.08184123581921716 for step 96

Validation Mean Squared Error: 0.08154953172225245 for step 97

Validation Mean Squared Error: 0.08126096200513575 for step 98

Validation Mean Squared Error: 0.08097548996107651 for step 99

Validation Mean Squared Error: 0.08069307933809948 for step 100

Final Weights: sepal\_length 0.003606

sepal\_width -0.070946

petal\_length 0.413284

dtype: float64

Score method MSE= 0.06146092293583562

\_\_\_\_\_\_\_\_\_\_ model2 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.2177265753675226 for step 1

Validation Mean Squared Error: 0.21569459825470763 for step 2

Validation Mean Squared Error: 0.21247736210238372 for step 3

Validation Mean Squared Error: 0.20954868304213178 for step 4

Validation Mean Squared Error: 0.2068934229066226 for step 5

Validation Mean Squared Error: 0.2044901866285213 for step 6

Validation Mean Squared Error: 0.20231912041356176 for step 7

Validation Mean Squared Error: 0.20036182983000403 for step 8

Validation Mean Squared Error: 0.1986012758733 for step 9

Validation Mean Squared Error: 0.19702167822922165 for step 10

Validation Mean Squared Error: 0.1956084253367513 for step 11

Validation Mean Squared Error: 0.19434799077668208 for step 12

Validation Mean Squared Error: 0.1932278555444453 for step 13

Validation Mean Squared Error: 0.19223643579637625 for step 14

Validation Mean Squared Error: 0.19136301568718928 for step 15

Validation Mean Squared Error: 0.19059768494301835 for step 16

Validation Mean Squared Error: 0.18993128083911046 for step 17

Validation Mean Squared Error: 0.18935533427428478 for step 18

Validation Mean Squared Error: 0.18886201965568603 for step 19

Validation Mean Squared Error: 0.18844410832730354 for step 20

Validation Mean Squared Error: 0.18809492529426813 for step 21

Validation Mean Squared Error: 0.1878083090122131 for step 22

Validation Mean Squared Error: 0.1875785740270403 for step 23

Validation Mean Squared Error: 0.18740047626539097 for step 24

Validation Mean Squared Error: 0.1872691807900207 for step 25

Validation Mean Squared Error: 0.18718023184723345 for step 26

Validation Mean Squared Error: 0.18712952504556776 for step 27

Validation Mean Squared Error: 0.18711328151614084 for step 28

Validation Mean Squared Error: 0.1871280239154812 for step 29

Validation Mean Squared Error: 0.18717055414139624 for step 30

Validation Mean Squared Error: 0.1872379326414367 for step 31

Final Weights: sepal\_length 0.544144

sepal\_width -0.629582

dtype: float64

Score method MSE= 0.17820321804834624

\_\_\_\_\_\_\_\_\_\_ model3 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.06919621734985927 for step 1

Validation Mean Squared Error: 0.06509971779697875 for step 2

Validation Mean Squared Error: 0.06546298577276081 for step 3

Validation Mean Squared Error: 0.06548347254382837 for step 4

Validation Mean Squared Error: 0.06548454391965337 for step 5

Final Weights: petal\_length 0.340776

dtype: float64

Score method MSE= 0.05257072362842176

\_\_\_\_\_\_\_\_\_\_ model4 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.5770937053972153 for step 1

Validation Mean Squared Error: 0.5766778157119505 for step 2

Validation Mean Squared Error: 0.5766779097862003 for step 3

Validation Mean Squared Error: 0.5766779097649072 for step 4

Validation Mean Squared Error: 0.5766779097649122 for step 5

Validation Mean Squared Error: 0.5766779097649122 for step 6

Validation Mean Squared Error: 0.5766779097649122 for step 7

Final Weights: sepal\_length 0.533391

dtype: float64

Score method MSE= 0.565817460740343

\_\_\_\_\_\_\_\_\_\_ model5 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.28259544918492135 for step 1

Validation Mean Squared Error: 0.26045676544704993 for step 2

Validation Mean Squared Error: 0.22852394631451936 for step 3

Validation Mean Squared Error: 0.20149456867090074 for step 4

Validation Mean Squared Error: 0.18026391630294022 for step 5

Validation Mean Squared Error: 0.16366821390900949 for step 6

Validation Mean Squared Error: 0.1506304623755552 for step 7

Validation Mean Squared Error: 0.14032113749093697 for step 8

Validation Mean Squared Error: 0.13211392933541205 for step 9

Validation Mean Squared Error: 0.1255355670964416 for step 10

Validation Mean Squared Error: 0.12022696014628746 for step 11

Validation Mean Squared Error: 0.11591432443402343 for step 12

Validation Mean Squared Error: 0.11238781766757219 for step 13

Validation Mean Squared Error: 0.10948570935744187 for step 14

Validation Mean Squared Error: 0.10708262360528208 for step 15

Validation Mean Squared Error: 0.10508078200547641 for step 16

Validation Mean Squared Error: 0.10340346027047118 for step 17

Validation Mean Squared Error: 0.10199008158525975 for step 18

Validation Mean Squared Error: 0.10079252284652608 for step 19

Validation Mean Squared Error: 0.09977232201795809 for step 20

Validation Mean Squared Error: 0.09889855691397387 for step 21

Validation Mean Squared Error: 0.09814622589174803 for step 22

Validation Mean Squared Error: 0.09749500508237485 for step 23

Validation Mean Squared Error: 0.09692828922910032 for step 24

Validation Mean Squared Error: 0.0964324470647793 for step 25

Validation Mean Squared Error: 0.09599623974580039 for step 26

Validation Mean Squared Error: 0.09561036384145197 for step 27

Validation Mean Squared Error: 0.09526708998100727 for step 28

Validation Mean Squared Error: 0.0949599753816288 for step 29

Validation Mean Squared Error: 0.09468363377428914 for step 30

Validation Mean Squared Error: 0.094433550192627 for step 31

Validation Mean Squared Error: 0.0942059310432228 for step 32

Validation Mean Squared Error: 0.09399758209369329 for step 33

Validation Mean Squared Error: 0.09380580868727217 for step 34

Validation Mean Squared Error: 0.09362833375899902 for step 35

Validation Mean Squared Error: 0.09346323019236112 for step 36

Validation Mean Squared Error: 0.09330886479236045 for step 37

Validation Mean Squared Error: 0.09316385171787474 for step 38

Validation Mean Squared Error: 0.09302701365464704 for step 39

Validation Mean Squared Error: 0.09289734935139203 for step 40

Validation Mean Squared Error: 0.09277400640856041 for step 41

Validation Mean Squared Error: 0.0926562584196448 for step 42

Validation Mean Squared Error: 0.09254348573159901 for step 43

Validation Mean Squared Error: 0.09243515922385519 for step 44

Validation Mean Squared Error: 0.09233082661202674 for step 45

Validation Mean Squared Error: 0.09223010086838002 for step 46

Validation Mean Squared Error: 0.09213265042091336 for step 47

Validation Mean Squared Error: 0.09203819084975184 for step 48

Validation Mean Squared Error: 0.09194647784615817 for step 49

Validation Mean Squared Error: 0.09185730123780116 for step 50

Validation Mean Squared Error: 0.09177047991560325 for step 51

Validation Mean Squared Error: 0.09168585752376392 for step 52

Validation Mean Squared Error: 0.09160329879641942 for step 53

Validation Mean Squared Error: 0.09152268644264934 for step 54

Validation Mean Squared Error: 0.09144391849681095 for step 55

Validation Mean Squared Error: 0.09136690606399911 for step 56

Validation Mean Squared Error: 0.09129157140119325 for step 57

Validation Mean Squared Error: 0.09121784628373064 for step 58

Validation Mean Squared Error: 0.09114567061439136 for step 59

Validation Mean Squared Error: 0.09107499123884896 for step 60

Validation Mean Squared Error: 0.09100576093670332 for step 61

Validation Mean Squared Error: 0.09093793756194533 for step 62

Validation Mean Squared Error: 0.0908714833106226 for step 63

Validation Mean Squared Error: 0.09080636409680463 for step 64

Validation Mean Squared Error: 0.09074254902076752 for step 65

Validation Mean Squared Error: 0.09068000991571942 for step 66

Validation Mean Squared Error: 0.09061872096142125 for step 67

Validation Mean Squared Error: 0.09055865835479414 for step 68

Validation Mean Squared Error: 0.09049980002907308 for step 69

Validation Mean Squared Error: 0.09044212541432285 for step 70

Validation Mean Squared Error: 0.09038561523319506 for step 71

Validation Mean Squared Error: 0.09033025132671664 for step 72

Validation Mean Squared Error: 0.09027601650566626 for step 73

Validation Mean Squared Error: 0.09022289442376026 for step 74

Validation Mean Squared Error: 0.09017086946942199 for step 75

Validation Mean Squared Error: 0.09011992667339179 for step 76

Validation Mean Squared Error: 0.09007005162983606 for step 77

Validation Mean Squared Error: 0.09002123042896364 for step 78

Validation Mean Squared Error: 0.0899734495994493 for step 79

Validation Mean Squared Error: 0.08992669605921833 for step 80

Validation Mean Squared Error: 0.08988095707335676 for step 81

Validation Mean Squared Error: 0.08983622021809774 for step 82

Validation Mean Squared Error: 0.08979247334998641 for step 83

Validation Mean Squared Error: 0.0897497045794611 for step 84

Validation Mean Squared Error: 0.08970790224819834 for step 85

Validation Mean Squared Error: 0.08966705490966906 for step 86

Validation Mean Squared Error: 0.08962715131243118 for step 87

Validation Mean Squared Error: 0.08958818038575692 for step 88

Validation Mean Squared Error: 0.08955013122725065 for step 89

Validation Mean Squared Error: 0.08951299309216516 for step 90

Validation Mean Squared Error: 0.08947675538416634 for step 91

Validation Mean Squared Error: 0.08944140764733317 for step 92

Validation Mean Squared Error: 0.0894069395592134 for step 93

Validation Mean Squared Error: 0.08937334092477763 for step 94

Validation Mean Squared Error: 0.0893406016711429 for step 95

Validation Mean Squared Error: 0.08930871184295204 for step 96

Validation Mean Squared Error: 0.08927766159831232 for step 97

Validation Mean Squared Error: 0.08924744120521379 for step 98

Validation Mean Squared Error: 0.08921804103835572 for step 99

Validation Mean Squared Error: 0.08918945157632366 for step 100

Final Weights: petal\_length -0.349494

petal\_width -0.100053

sepal\_length 0.759971

dtype: float64

Score method MSE= 0.16874855700790958

\_\_\_\_\_\_\_\_\_\_ model6 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 5.036253539881534 for step 1

Validation Mean Squared Error: 5.0279058259076574 for step 2

Validation Mean Squared Error: 5.003216393669589 for step 3

Validation Mean Squared Error: 4.978372734839354 for step 4

Validation Mean Squared Error: 4.953794316548614 for step 5

Validation Mean Squared Error: 4.9294884591873105 for step 6

Validation Mean Squared Error: 4.9054521088520415 for step 7

Validation Mean Squared Error: 4.881681991680302 for step 8

Validation Mean Squared Error: 4.858174869718887 for step 9

Validation Mean Squared Error: 4.8349275468267665 for step 10

Validation Mean Squared Error: 4.811936868273178 for step 11

Validation Mean Squared Error: 4.7891997201841 for step 12

Validation Mean Squared Error: 4.766713028992336 for step 13

Validation Mean Squared Error: 4.744473760895103 for step 14

Validation Mean Squared Error: 4.722478921319035 for step 15

Validation Mean Squared Error: 4.700725554392576 for step 16

Validation Mean Squared Error: 4.679210742425602 for step 17

Validation Mean Squared Error: 4.65793160539621 for step 18

Validation Mean Squared Error: 4.636885300444548 for step 19

Validation Mean Squared Error: 4.616069021373606 for step 20

Validation Mean Squared Error: 4.595479998156869 for step 21

Validation Mean Squared Error: 4.5751154964527165 for step 22

Validation Mean Squared Error: 4.55497281712551 for step 23

Validation Mean Squared Error: 4.535049295773244 for step 24

Validation Mean Squared Error: 4.5153423022616845 for step 25

Validation Mean Squared Error: 4.495849240264898 for step 26

Validation Mean Squared Error: 4.476567546812099 for step 27

Validation Mean Squared Error: 4.457494691840694 for step 28

Validation Mean Squared Error: 4.438628177755478 for step 29

Validation Mean Squared Error: 4.419965538993867 for step 30

Validation Mean Squared Error: 4.401504341597085 for step 31

Validation Mean Squared Error: 4.383242182787254 for step 32

Validation Mean Squared Error: 4.365176690550254 for step 33

Validation Mean Squared Error: 4.34730552322432 for step 34

Validation Mean Squared Error: 4.329626369094268 for step 35

Validation Mean Squared Error: 4.312136945991288 for step 36

Validation Mean Squared Error: 4.294835000898206 for step 37

Validation Mean Squared Error: 4.277718309560169 for step 38

Validation Mean Squared Error: 4.260784676100646 for step 39

Validation Mean Squared Error: 4.2440319326427005 for step 40

Validation Mean Squared Error: 4.2274579389354345 for step 41

Validation Mean Squared Error: 4.211060581985557 for step 42

Validation Mean Squared Error: 4.194837775693981 for step 43

Validation Mean Squared Error: 4.178787460497404 for step 44

Validation Mean Squared Error: 4.1629076030147845 for step 45

Validation Mean Squared Error: 4.147196195698656 for step 46

Validation Mean Squared Error: 4.1316512564912005 for step 47

Validation Mean Squared Error: 4.116270828485049 for step 48

Validation Mean Squared Error: 4.101052979588671 for step 49

Validation Mean Squared Error: 4.085995802196392 for step 50

Validation Mean Squared Error: 4.071097412862875 for step 51

Validation Mean Squared Error: 4.056355951982076 for step 52

Validation Mean Squared Error: 4.041769583470562 for step 53

Validation Mean Squared Error: 4.0273364944551755 for step 54

Validation Mean Squared Error: 4.013054894964943 for step 55

Validation Mean Squared Error: 3.9989230176272055 for step 56

Validation Mean Squared Error: 3.9849391173678748 for step 57

Validation Mean Squared Error: 3.971101471115804 for step 58

Validation Mean Squared Error: 3.9574083775111677 for step 59

Validation Mean Squared Error: 3.9438581566178312 for step 60

Validation Mean Squared Error: 3.9304491496396396 for step 61

Validation Mean Squared Error: 3.9171797186405732 for step 62

Validation Mean Squared Error: 3.9040482462687143 for step 63

Validation Mean Squared Error: 3.891053135483973 for step 64

Validation Mean Squared Error: 3.87819280928954 for step 65

Validation Mean Squared Error: 3.8654657104669665 for step 66

Validation Mean Squared Error: 3.852870301314875 for step 67

Validation Mean Squared Error: 3.8404050633912186 for step 68

Validation Mean Squared Error: 3.8280684972590464 for step 69

Validation Mean Squared Error: 3.8158591222357336 for step 70

Validation Mean Squared Error: 3.8037754761456206 for step 71

Validation Mean Squared Error: 3.7918161150760095 for step 72

Validation Mean Squared Error: 3.779979613136489 for step 73

Validation Mean Squared Error: 3.768264562221529 for step 74

Validation Mean Squared Error: 3.756669571776295 for step 75

Validation Mean Squared Error: 3.745193268565646 for step 76

Validation Mean Squared Error: 3.7338342964462847 for step 77

Validation Mean Squared Error: 3.7225913161419784 for step 78

Validation Mean Squared Error: 3.711463005021852 for step 79

Validation Mean Squared Error: 3.7004480568816804 for step 80

Validation Mean Squared Error: 3.689545181728152 for step 81

Validation Mean Squared Error: 3.6787531055660594 for step 82

Validation Mean Squared Error: 3.6680705701883776 for step 83

Validation Mean Squared Error: 3.6574963329691843 for step 84

Validation Mean Squared Error: 3.647029166659395 for step 85

Validation Mean Squared Error: 3.6366678591852657 for step 86

Validation Mean Squared Error: 3.626411213449615 for step 87

Validation Mean Squared Error: 3.6162580471357577 for step 88

Validation Mean Squared Error: 3.6062071925140797 for step 89

Validation Mean Squared Error: 3.596257496251235 for step 90

Validation Mean Squared Error: 3.5864078192219315 for step 91

Validation Mean Squared Error: 3.576657036323256 for step 92

Validation Mean Squared Error: 3.567004036291522 for step 93

Validation Mean Squared Error: 3.5574477215215787 for step 94

Validation Mean Squared Error: 3.547987007888582 for step 95

Validation Mean Squared Error: 3.538620824572159 for step 96

Validation Mean Squared Error: 3.5293481138829614 for step 97

Validation Mean Squared Error: 3.5201678310915594 for step 98

Validation Mean Squared Error: 3.5110789442596366 for step 99

Validation Mean Squared Error: 3.5020804340734815 for step 100

Final Weights: petal\_length 0.990608

petal\_width -1.051056

dtype: float64

Score method MSE= 2.0708011460142766

\_\_\_\_\_\_\_\_\_\_ model7 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.6768754740446087 for step 1

Validation Mean Squared Error: 0.6776135440469738 for step 2

Validation Mean Squared Error: 0.677613411094797 for step 3

Validation Mean Squared Error: 0.677613411118694 for step 4

Validation Mean Squared Error: 0.67761341111869 for step 5

Validation Mean Squared Error: 0.67761341111869 for step 6

Validation Mean Squared Error: 0.67761341111869 for step 7

Validation Mean Squared Error: 0.67761341111869 for step 8

Final Weights: sepal\_length 0.505306

dtype: float64

Score method MSE= 0.5263862154541983

\_\_\_\_\_\_\_\_\_\_ model8 \_\_\_\_\_\_\_\_\_\_\_\_\_

Validation Mean Squared Error: 0.08824236998960658 for step 1

Validation Mean Squared Error: 0.080275129180406 for step 2

Validation Mean Squared Error: 0.08014421768377929 for step 3

Validation Mean Squared Error: 0.08013876714366867 for step 4

Validation Mean Squared Error: 0.08013852164390563 for step 5

Validation Mean Squared Error: 0.08013851054503805 for step 6

Validation Mean Squared Error: 0.08013851004318161 for step 7

Validation Mean Squared Error: 0.08013851002048906 for step 8

Validation Mean Squared Error: 0.08013851001946296 for step 9

Validation Mean Squared Error: 0.08013851001941652 for step 10

Validation Mean Squared Error: 0.08013851001941444 for step 11

Validation Mean Squared Error: 0.08013851001941433 for step 12

Validation Mean Squared Error: 0.08013851001941434 for step 13

Validation Mean Squared Error: 0.08013851001941434 for step 14

Validation Mean Squared Error: 0.08013851001941434 for step 15

Final Weights: petal\_length 0.336416

dtype: float64

Score method MSE= 0.0670997361430527

Based on the information displayed in the models and the results, it seems that petal length and petal width is more predictive.