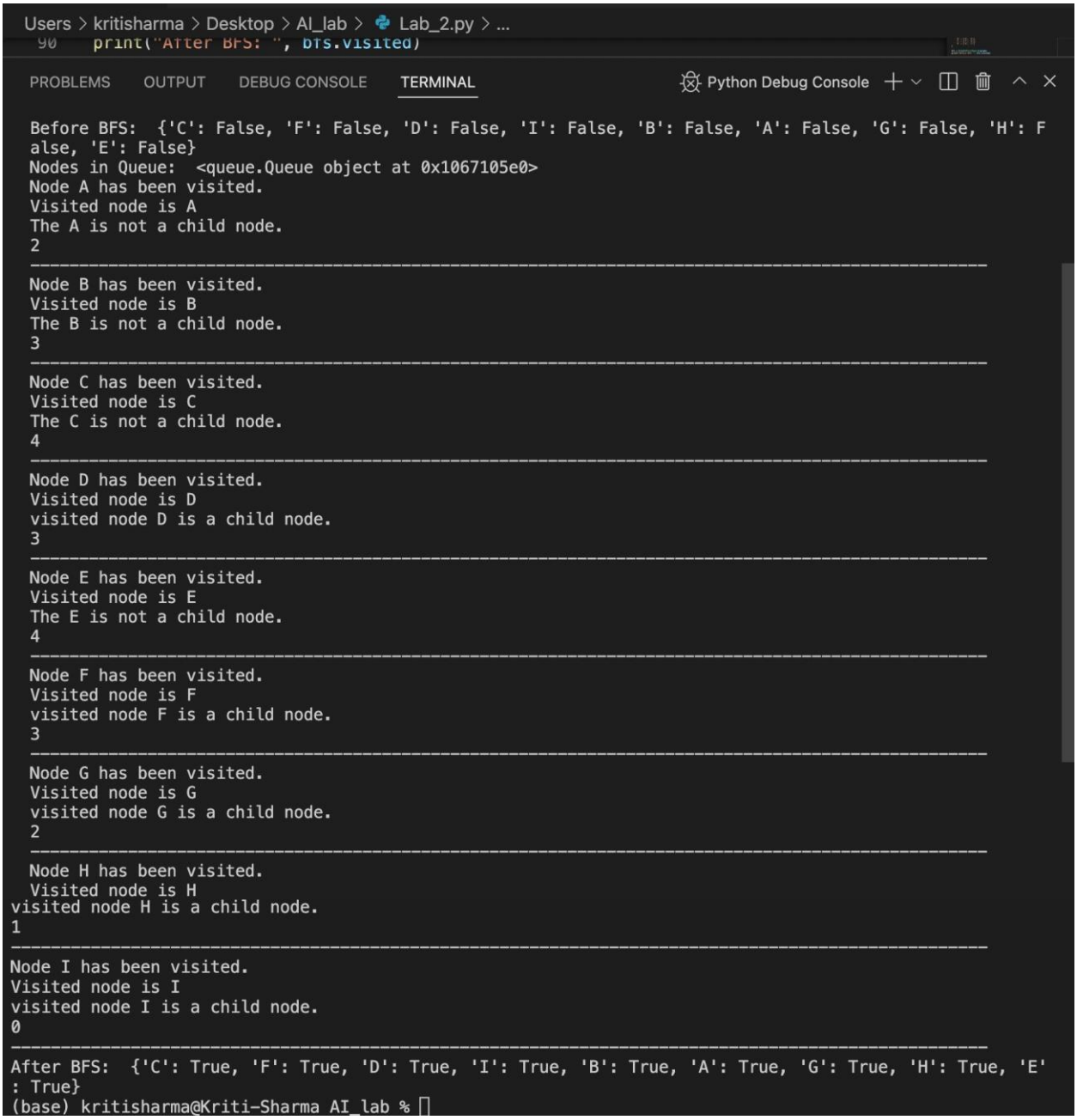
# OUTPUT


Users > kritisharma > Desktop > AI_lab > Lab_2.py > ...
90 print("After BFS: ", bfs.visited)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python Debug Console
Before BFS: {'C': False, 'F': False, 'D': False, 'I': False, 'B': False, 'A': False, 'G': False, 'H': False, 'E': False}
Nodes in Queue: <queue.Queue object at 0x1067105e0>
Node A has been visited.
Visited node is A
The A is not a child node.
2
Node B has been visited.
Visited node is B
The B is not a child node.
3
Node C has been visited.
Visited node is C
The C is not a child node.
4
Node D has been visited.
Visited node is D
visited node D is a child node.
3
Node E has been visited.
Visited node is E
The E is not a child node.
4
Node F has been visited.
Visited node is F
visited node F is a child node.
3
Node G has been visited.
Visited node is G
visited node G is a child node.
2
Node H has been visited.
Visited node is H
visited node H is a child node.
1
Node I has been visited.
Visited node is I
visited node I is a child node.
0
After BFS: {'C': True, 'F': True, 'D': True, 'I': True, 'B': True, 'A': True, 'G': True, 'H': True, 'E': True}
(base) kritisharma@Kriti-Sharma AI_lab %

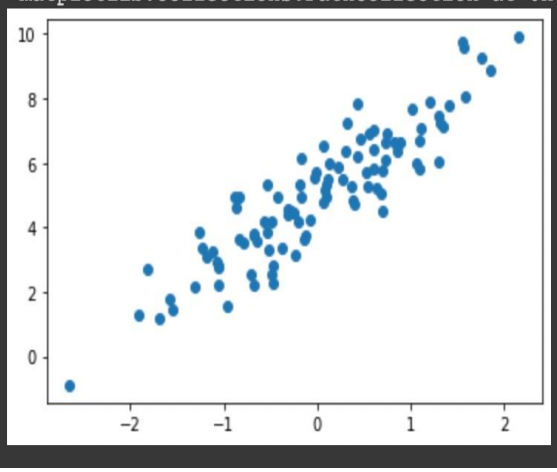
# OUTPUT

```
Before DFS:  {'B': False, 'F': False, 'C': False, 'I': False, 'H': False, 'G': False, 'E': False, 'A': False, 'D': False}
Nodes in Stack:  ['A']
Node A has been visited.
Visited node is A
The A is not a child node.
--------------------------------------------------------------------------------------------------------
Node C has been visited.
Visited node is C
The C is not a child node.
--------------------------------------------------------------------------------------------------------
Node G has been visited.
Visited node is G
visited node G is a child node.
--------------------------------------------------------------------------------------------------------
Node F has been visited.
Visited node is F
visited node F is a child node.
--------------------------------------------------------------------------------------------------------
Node B has been visited.
Visited node is B
The B is not a child node.
--------------------------------------------------------------------------------------------------------
Node E has been visited.
Visited node is E
The E is not a child node.
--------------------------------------------------------------------------------------------------------
Node I has been visited.
Visited node is I
visited node I is a child node.
--------------------------------------------------------------------------------------------------------
Node H has been visited.
Visited node is H
visited node H is a child node.
--------------------------------------------------------------------------------------------------------
Node D has been visited.
Visited node is D
visited node D is a child node.
--------------------------------------------------------------------------------------------------------
After DFS:  {'B': True, 'F': True, 'C': True, 'I': True, 'H': True, 'G': True, 'E': True, 'A': True, 'D': True}
```

# OUTPUT

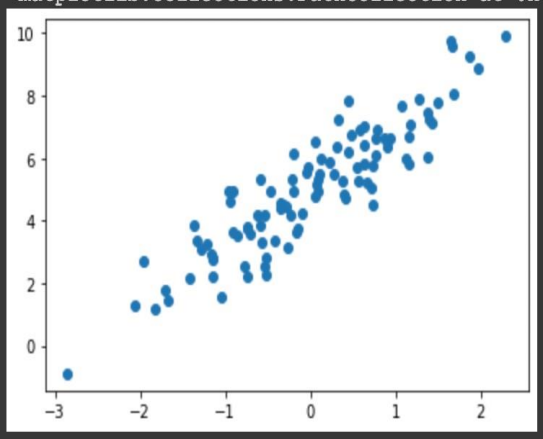
**1.**

```
<matplotlib.collections.PathCollection at 0x7f5146f19350>
```




**2.**

```
<matplotlib.collections.PathCollection at 0x7f5146e994d0>
```



## 3.

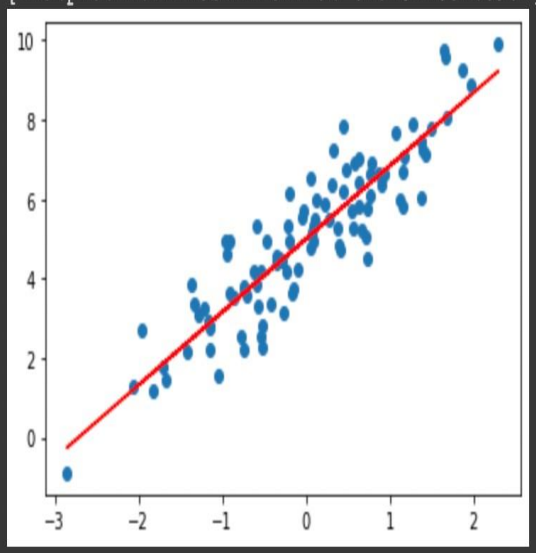
```
Loss in epoch 0: 49.174721621313395
Loss in epoch 1: 46.792476030294964
Loss in epoch 2: 44.53323005714794
Loss in epoch 3: 42.39101615776602
Loss in epoch 4: 40.36017132614151
Loss in epoch 5: 38.43532168657795
Loss in epoch 6: 36.611367780617364
Loss in epoch 7: 34.88347050347596
Loss in epoch 8: 33.247037646461095
Loss in epoch 9: 31.697711003610944
Loss in epoch 10: 30.23135400272141
Loss in epoch 11: 28.844039823077186
Loss in epoch 12: 27.53203996466877
Loss in epoch 13: 26.291813236540783
Loss in epoch 14: 25.119995135267928
Loss in epoch 15: 24.01338758847614
Loss in epoch 16: 22.968949042886614
Loss in epoch 17: 21.98378488160491
Loss in epoch 18: 21.0551381613137
Loss in epoch 19: 20.180380666612358
Loss in epoch 20: 19.357004285869273
Loss in epoch 21: 18.582612720423555
Loss in epoch 22: 17.854913546511785
Loss in epoch 23: 17.171710656528855
Loss in epoch 24: 16.53089711269976
Loss in epoch 25: 15.930448451411198
Loss in epoch 26: 15.368416479765065
Loss in epoch 27: 14.842923606816681
Loss in epoch 28: 14.352157749972825
Loss in epoch 29: 13.894367851809202
Loss in epoch 30: 13.467860033997525
Loss in epoch 31: 13.070994403244367
Loss in epoch 32: 12.702182509572884
Loss in epoch 33: 12.359885440658818
Loss in epoch 34: 12.042612518259837
Loss in epoch 35: 11.74892054523352
Loss in epoch 36: 11.477413535480412
Loss in epoch 37: 11.226742845578203
Loss in epoch 38: 10.995607616910643
Loss in epoch 39: 10.782755431466203
Loss in epoch 40: 10.586983083540078
Loss in epoch 41: 10.407137373272704
Loss in epoch 42: 10.242115835871619
Loss in epoch 43: 10.090867331748724
Loss in epoch 44: 9.952392436701833
Loss in epoch 45: 9.82574358661152
Loss in epoch 46: 9.710024946853766
Loss in epoch 47: 9.604391991788745
Loss in epoch 48: 9.50805079349423
Loss in epoch 49: 9.420257030799267
Loss in epoch 50: 9.340314739295497
Loss in epoch 51: 9.267574830227032
Loss in epoch 52: 9.201433411031712
Loss in epoch 53: 9.141329943012884
Loss in epoch 54: 9.086745272441245
Loss in epoch 55: 9.037199570653497
Loss in epoch 56: 8.992250216777308
Loss in epoch 57: 8.951489653907634
Loss in epoch 58: 8.914543246194285
Loss in epoch 59: 8.881067160637635
Loss in epoch 60: 8.850746293644066
Loss in epoch 61: 8.823292258731382
Loss in epoch 62: 8.798441448318666
Loss in epoch 63: 8.77595317936665
Loss in epoch 64: 8.755607929801469
Loss in epoch 65: 8.737205670178959
Loss in epoch 66: 8.720564292929003
Loss in epoch 67: 8.705518139746736
Loss in epoch 68: 8.691916626245987
Loss in epoch 69: 8.679622961830686
Loss in epoch 70: 8.6685129618394
Loss in epoch 71: 8.658473948343211
Loss in epoch 72: 8.649403735495518
Loss in epoch 73: 8.641209695013
Loss in epoch 74: 8.633807897182168
Loss in epoch 75: 8.627122322710422
Loss in epoch 76: 8.621084140752213
Loss in epoch 77: 8.61563104852079
Loss in epoch 78: 8.6107066680277
Loss in epoch 79: 8.606259995662244
Loss in epoch 80: 8.602244900519818
Loss in epoch 81: 8.598619667602632
Loss in epoch 82: 8.595346582240818
Loss in epoch 83: 8.592391552310762
Loss in epoch 84: 8.589723765055775
Loss in epoch 85: 8.587315375538601
Loss in epoch 86: 8.585141223972798
Loss in epoch 87: 8.583178579389136
Loss in epoch 88: 8.581406907292328
Loss in epoch 89: 8.579807659151664
Loss in epoch 90: 8.578364081746479
Loss in epoch 91: 8.57706104455308
Loss in epoch 92: 8.575884883514364
Loss in epoch 93: 8.574823259676762
Loss in epoch 94: 8.573865031312025
Loss in epoch 95: 8.573000138263836
Loss in epoch 96: 8.572219497372044
Loss in epoch 97: 8.57151490793109
Loss in epoch 98: 8.570878966234027
Loss in epoch 99: 8.570304988340752
```

**4.**

```
1.840396452352755 4.996808966868356
```

**5.**

```
[<matplotlib.lines.Line2D at 0x7f5146e1bc90>]
```



# OUTPUT

## 1.

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=
```

## 2.

```
Epoch:  0, loss =  0.6516958197478738
Epoch:  1, loss =  0.6388491400016892
Epoch:  2, loss =  0.6295321315991222
Epoch:  3, loss =  0.6212282594483878
Epoch:  4, loss =  0.6135901790311465
Epoch:  5, loss =  0.6065308808436332
Epoch:  6, loss =  0.5999986041522346
Epoch:  7, loss =  0.5939491595400255
Epoch:  8, loss =  0.5883423125199289
Epoch:  9, loss =  0.5831412147501833
Epoch:  10, loss =  0.5783121604015432
Epoch:  11, loss =  0.5738243704082762
Epoch:  12, loss =  0.5696497728334903
Epoch:  13, loss =  0.5657627852904328
Epoch:  14, loss =  0.5621401043637494
Epoch:  15, loss =  0.5587605057061636
Epoch:  16, loss =  0.5556046568165458
Epoch:  17, loss =  0.5526549434697954
Epoch:  18, loss =  0.5498953100234821
Epoch:  19, loss =  0.5473111133391572
Epoch:  20, loss =  0.544888989742951
Epoch:  21, loss =  0.5426167342632323
Epoch:  22, loss =  0.5404831912844428
Epoch:  23, loss =  0.5384781557184111
Epoch:  24, loss =  0.5365922837974448
Epoch:  25, loss =  0.5348170126229347
Epoch:  26, loss =  0.533144487648869
Epoch:  27, loss =  0.5315674973343945
Epoch:  28, loss =  0.5300794142584466
Epoch:  29, loss =  0.5286741420491838
Epoch:  30, loss =  0.5273460675393341
Epoch:  31, loss =  0.5260900176142315
Epoch:  32, loss =  0.5249012202715021
Epoch:  33, loss =  0.5237752694596475
Epoch:  34, loss =  0.522708093307044
Epoch:  35, loss =  0.5216959253931798
Epoch:  36, loss =  0.5207352787504101
Epoch:  37, loss =  0.5198229223174042
Epoch:  38, loss =  0.5189558595949757
Epoch:  39, loss =  0.5181313092814664
Epoch:  40, loss =  0.517346687688512
Epoch:  41, loss =  0.5165995927591688
Epoch:  42, loss =  0.5158877895292284
Epoch:  43, loss =  0.515209196889368
Epoch:  44, loss =  0.5145618755207607
Epoch:  45, loss =  0.5139440168901157
Epoch:  46, loss =  0.5133539332020063
Epoch:  47, loss =  0.5127900482169349
Epoch:  48, loss =  0.5122508888530151
Epoch:  49, loss =  0.5117350774975679
Epoch:  50, loss =  0.5112413249624194
Epoch:  51, loss =  0.5107684240233856
Epoch:  52, loss =  0.5103152434903933
Epoch:  53, loss =  0.5098807227600224
Epoch:  54, loss =  0.5094638668070219
Epoch:  55, loss =  0.5090637415756074
Epoch:  56, loss =  0.5086794697351676
Epoch:  57, loss =  0.5083102267684239
Epoch:  58, loss =  0.5079552373631373
Epoch:  59, loss =  0.5076137720812228
Epoch:  60, loss =  0.5072851442815708
Epoch:  61, loss =  0.5069687072751131
Epoch:  62, loss =  0.5066638516926456
Epoch:  63, loss =  0.5063700030477203
Epoch:  64, loss =  0.5060866194785268
Epoch:  65, loss =  0.5058131896541419
Epoch:  66, loss =  0.505549230831835
Epoch:  67, loss =  0.5052942870533018
Epoch:  68, loss =  0.5050479274687704
Epoch:  69, loss =  0.5048097447788867
Epoch:  70, loss =  0.5045793537851687
Epoch:  71, loss =  0.5043563900406043
Epoch:  72, loss =  0.5041405085926943
Epoch:  73, loss =  0.5039313828118863
Epoch:  74, loss =  0.5037287032989437
Epoch:  75, loss =  0.5035321768653287
Epoch:  76, loss =  0.5033415255811683
Epoch:  77, loss =  0.5031564858858166
Epoch:  78, loss =  0.5029768077564332
Epoch:  79, loss =  0.5028022539303663
Epoch:  80, loss =  0.5026325991774665
Epoch:  81, loss =  0.502467629618764
Epoch:  82, loss =  0.5023071420882246
Epoch:  83, loss =  0.5021509435345524
Epoch:  84, loss =  0.50199885046025
Epoch:  85, loss =  0.5018506883953523
Epoch:  86, loss =  0.5017062914034545
Epoch:  87, loss =  0.5015655016178308
Epoch:  88, loss =  0.5014281688056098
Epoch:  89, loss =  0.5012941499581196
Epoch:  90, loss =  0.5011633089056606
Epoch:  91, loss =  0.5010355159550873
Epoch:  92, loss =  0.5009106475487032
Epoch:  93, loss =  0.5007885859430763
Epoch:  94, loss =  0.500669218906487
Epoch:  95, loss =  0.5005524394338096
Epoch:  96, loss =  0.5004381454777167
Epoch:  97, loss =  0.5003262396951674
Epoch:  98, loss =  0.5002166292082222
Epoch:  99, loss =  0.5001092253782848
Epoch:  100, loss =  0.5000039435929406
Epoch:  101, loss =  0.49990070306461104
Epoch:  102, loss =  0.4997994266403039
Epoch:  103, loss =  0.4997000406217812
Epoch:  104, loss =  0.4996024745955175
Epoch:  105, loss =  0.49950666127185717
Epoch:  106, loss =  0.4994125363328259
Epoch:  107, loss =  0.49932003828807825
Epoch:  108, loss =  0.49922910833850825
Epoch:  109, loss =  0.4991396902470668
```

```
Epoch:  72, loss =  0.5041405085926943
Epoch:  73, loss =  0.5039313828118863
Epoch:  74, loss =  0.5037287032989437
Epoch:  75, loss =  0.5035321768653287
Epoch:  76, loss =  0.5033415255811683
Epoch:  77, loss =  0.5031564858858166
Epoch:  78, loss =  0.5029768077564332
Epoch:  79, loss =  0.5028022539303663
Epoch:  80, loss =  0.5026325991774665
Epoch:  81, loss =  0.502467629618764
Epoch:  82, loss =  0.5023071420882246
Epoch:  83, loss =  0.5021509435345524
Epoch:  84, loss =  0.50199885046025
Epoch:  85, loss =  0.5018506883953523
Epoch:  86, loss =  0.5017062914034545
Epoch:  87, loss =  0.5015655016178308
Epoch:  88, loss =  0.5014281688056098
Epoch:  89, loss =  0.5012941499581196
Epoch:  90, loss =  0.5011633089056606
Epoch:  91, loss =  0.5010355159550873
Epoch:  92, loss =  0.5009106475487032
Epoch:  93, loss =  0.5007885859430763
Epoch:  94, loss =  0.500669218906487
Epoch:  95, loss =  0.5005524394338096
Epoch:  96, loss =  0.5004381454777167
Epoch:  97, loss =  0.5003262396951674
Epoch:  98, loss =  0.5002166292082222
Epoch:  99, loss =  0.5001092253782848
Epoch:  100, loss =  0.5000039435929406
Epoch:  101, loss =  0.49990070306461104
Epoch:  102, loss =  0.4997994266403039
Epoch:  103, loss =  0.4997000406217812
Epoch:  104, loss =  0.4996024745955175
Epoch:  105, loss =  0.49950666127185717
Epoch:  106, loss =  0.4994125363328259
Epoch:  107, loss =  0.49932003828807825
Epoch:  108, loss =  0.49922910833850825
Epoch:  109, loss =  0.4991396902470668
```

```
Epoch:  110, loss =  0.49905173021637417
Epoch:  111, loss =  0.498965176772727
Epoch:  112, loss =  0.49887998065614003
Epoch:  113, loss =  0.49879609471607184
Epoch:  114, loss =  0.4987134738125132
Epoch:  115, loss =  0.49863207472213794
Epoch:  116, loss =  0.49855185604922947
Epoch:  117, loss =  0.49847277814111673
Epoch:  118, loss =  0.49839480300787053
Epoch:  119, loss =  0.4983178942460248
Epoch:  120, loss =  0.49824201696610154
Epoch:  121, loss =  0.49816713772373306
Epoch:  122, loss =  0.4980932244541849
Epoch:  123, loss =  0.49802024641009707
Epoch:  124, loss =  0.4979481741022718
Epoch:  125, loss =  0.49787697924334207
Epoch:  126, loss =  0.49780663469417197
Epoch:  127, loss =  0.49773711441284163
Epoch:  128, loss =  0.49766839340608265
Epoch:  129, loss =  0.49760044768303513
Epoch:  130, loss =  0.49753325421120603
Epoch:  131, loss =  0.49746679087451495
Epoch:  132, loss =  0.49740103643331945
Epoch:  133, loss =  0.49733597048631933
Epoch:  134, loss =  0.49727157343424366
Epoch:  135, loss =  0.49720782644522954
Epoch:  136, loss =  0.4971447114218083
Epoch:  137, loss =  0.4970822109694184
Epoch:  138, loss =  0.4970203083663673
Epoch:  139, loss =  0.496958987535171
Epoch:  140, loss =  0.4968982330152045
Epoch:  141, loss =  0.49683802993659576
Epoch:  142, loss =  0.4967783639953029
Epoch:  143, loss =  0.49671922142932035
Epoch:  144, loss =  0.49666058899595195
Epoch:  145, loss =  0.4966024539501068
Epoch:  146, loss =  0.49654480402356327
Epoch:  147, loss =  0.49648762740515695
```

```
Epoch:  147, loss =  0.49648762740515695
Epoch:  148, loss =  0.49643091272184786
Epoch:  149, loss =  0.49637464902062517
Epoch:  150, loss =  0.49631882575120945
Epoch:  151, loss =  0.496263432749515
Epoch:  152, loss =  0.496208460221835 6
Epoch:  153, loss =  0.49615389872972243
Epoch:  154, loss =  0.4960997391755173
Epoch:  155, loss =  0.49604597278851537
Epoch:  156, loss =  0.4959925911117255
Epoch:  157, loss =  0.49593958598920135
Epoch:  158, loss =  0.4958869495539161
Epoch:  159, loss =  0.4958346742161584
Epoch:  160, loss =  0.49578275265242255
Epoch:  161, loss =  0.4957311777947724
Epoch:  162, loss =  0.4956799428206568
Epoch:  163, loss =  0.4956290411431577
Epoch:  164, loss =  0.49557846640164777
Epoch:  165, loss =  0.4955282124528436
Epoch:  166, loss =  0.49547827336223393
Epoch:  167, loss =  0.49542864339586623
Epoch:  168, loss =  0.4953793170124784
Epoch:  169, loss =  0.4953302888559561
Epoch:  170, loss =  0.4952815537481057
Epoch:  171, loss =  0.4952331066817248
Epoch:  172, loss =  0.495184942813961
Epoch:  173, loss =  0.4951370574599441
Epoch:  174, loss =  0.4950894460866802
Epoch:  175, loss =  0.4950421043071966
Epoch:  176, loss =  0.4949950278749261
Epoch:  177, loss =  0.4949482126783219
Epoch:  178, loss =  0.4949016547356907
Epoch:  179, loss =  0.49485535019023685
Epoch:  180, loss =  0.49480929530530715
Epoch:  181, loss =  0.4947634864598286
Epoch:  182, loss =  0.49471792014392996
Epoch:  183, loss =  0.4946725929547 4025
Epoch:  184, loss =  0.4946275015923561
```

```
Epoch:  185, loss =  0.4945826428559709
Epoch:  186, loss =  0.4945380136401594
Epoch:  187, loss =  0.49449361093131006
Epoch:  188, loss =  0.49444943180420087
Epoch:  189, loss =  0.49440547341870966
Epoch:  190, loss =  0.49436173301665803
Epoch:  191, loss =  0.4943182079187765
Epoch:  192, loss =  0.4942748955217944
Epoch:  193, loss =  0.49423179329563965
Epoch:  194, loss =  0.49418889878075384
Epoch:  195, loss =  0.4941462095855088
Epoch:  196, loss =  0.49410372338372793
Epoch:  197, loss =  0.49406143791230245
Epoch:  198, loss =  0.49401935096890165
Epoch:  199, loss =  0.493977460409773
Epoch:  200, loss =  0.4939357641476274
Epoch:  201, loss =  0.4938942601496072
Epoch:  202, loss =  0.493852946435333
Epoch:  203, loss =  0.4938118210750255
Epoch:  204, loss =  0.49377088218770154
Epoch:  205, loss =  0.49373012793943855
Epoch:  206, loss =  0.49368955654170626
Epoch:  207, loss =  0.49364916624976335
Epoch:  208, loss =  0.4936089553611144
Epoch:  209, loss =  0.4935689222140278
Epoch:  210, loss =  0.4935290651861085
Epoch:  211, loss =  0.49348938269292725
Epoch:  212, loss =  0.4934498731867006
Epoch:  213, loss =  0.4934105351550222
Epoch:  214, loss =  0.4933713671196422
Epoch:  215, loss =  0.49333236763529265
Epoch:  216, loss =  0.4932935352885579
Epoch:  217, loss =  0.49325486869678814
Epoch:  218, loss =  0.4932163665070521
Epoch:  219, loss =  0.4931780273951322
Epoch:  220, loss =  0.4931398500645552
Epoch:  221, loss =  0.4931018332456605
Epoch:  222, loss =  0.4930639756947031
```

```
Epoch:  223, loss =  0.49302627619299
Epoch:  224, loss =  0.4929887335460498
Epoch:  225, loss =  0.4929513465828315
Epoch:  226, loss =  0.49291411415493613
Epoch:  227, loss =  0.49287703513587394
Epoch:  228, loss =  0.49284010842035103
Epoch:  229, loss =  0.4928033329235819
Epoch:  230, loss =  0.49276670758062824
Epoch:  231, loss =  0.4927302313457609
Epoch:  232, loss =  0.49269390319184614
Epoch:  233, loss =  0.49265772210975495
Epoch:  234, loss =  0.49262168710779347
Epoch:  235, loss =  0.4925857972111546
Epoch:  236, loss =  0.49255005146138936
Epoch:  237, loss =  0.49251444891589896
Epoch:  238, loss =  0.4924789886474432
Epoch:  239, loss =  0.492443669743669
Epoch:  240, loss =  0.49240849130665487
Epoch:  241, loss =  0.4923734524524725
Epoch:  242, loss =  0.49233855231076384
Epoch:  243, loss =  0.49230379002433367
Epoch:  244, loss =  0.49226916474875754
Epoch:  245, loss =  0.49223467565200285
Epoch:  246, loss =  0.4922003219140641
Epoch:  247, loss =  0.4921661027266116
Epoch:  248, loss =  0.4921320172926518
Epoch:  249, loss =  0.4920980648262016
Epoch:  250, loss =  0.49206424455197173
Epoch:  251, loss =  0.49203055570506377
Epoch:  252, loss =  0.4919969975306769
Epoch:  253, loss =  0.4919635692838252
Epoch:  254, loss =  0.491930270229065
Epoch:  255, loss =  0.4918970996402319
Epoch:  256, loss =  0.4918640568001873
Epoch:  257, loss =  0.4918311410005732
Epoch:  258, loss =  0.491798351541577
Epoch:  259, loss =  0.49176568773170215
Epoch:  260, loss =  0.49173314888755004
Epoch:  261, loss =  0.4917007343336065
Epoch:  262, loss =  0.4916684434020379
Epoch:  263, loss =  0.49163627543249266
Epoch:  264, loss =  0.49160422977191137
Epoch:  265, loss =  0.49157230577434186
Epoch:  266, loss =  0.49154050280076206
Epoch:  267, loss =  0.4915088202189068
Epoch:  268, loss =  0.49147725740310455
Epoch:  269, loss =  0.49144581373411445
Epoch:  270, loss =  0.4914144885989738
Epoch:  271, loss =  0.49138328139084714
Epoch:  272, loss =  0.491352191508883
Epoch:  273, loss =  0.4913212183580735
Epoch:  274, loss =  0.49129036134912085
Epoch:  275, loss =  0.4912596198983055
Epoch:  276, loss =  0.4912289934273616
Epoch:  277, loss =  0.49119848136335453
Epoch:  278, loss =  0.49116808313856375
Epoch:  279, loss =  0.4911377981903693
Epoch:  280, loss =  0.4911076259611409
Epoch:  281, loss =  0.49107756589813234
Epoch:  282, loss =  0.49104761745337916
Epoch:  283, loss =  0.4910177800835982
Epoch:  284, loss =  0.49098805325009137
Epoch:  285, loss =  0.4909584364186533
Epoch:  286, loss =  0.49092892905948116
Epoch:  287, loss =  0.4908995306470867 5
Epoch:  288, loss =  0.4908702406602128
Epoch:  289, loss =  0.49084105858175087
Epoch:  290, loss =  0.4908119838986626
Epoch:  291, loss =  0.49078301610190267
Epoch:  292, loss =  0.49075415468634537
Epoch:  293, loss =  0.49072539915071184
Epoch:  294, loss =  0.49069674899750104
Epoch:  295, loss =  0.4906682037329219
Epoch:  296, loss =  0.49063976286682875
Epoch:  297, loss =  0.49061142591265705
Epoch:  298, loss =  0.4905831923873625
Epoch:  299, loss =  0.49055506181136127
,Final Loss =  0.49055506181136127
   W: [[ 1.41672749]
 [ 2.14310993]
 [-0.49075799]
 [ 0.48571021]
 [-0.06968322]
 [ 2.5182734 ]
 [ 0.69191309]
 [ 1.35812396]], b = [-0.79923511]
```

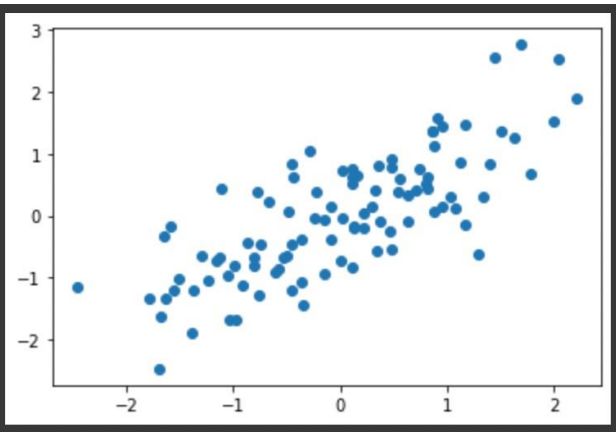
**3.**

| | precision | recall | f1-score | support |
|---|---|---|---|---|
| 0 | 0.89 | 0.78 | 0.83 | 569 |
| 1 | 0.54 | 0.72 | 0.62 | 198 |
| accuracy | | | 0.77 | 767 |
| macro avg | 0.71 | 0.75 | 0.72 | 767 |
| weighted avg | 0.80 | 0.77 | 0.78 | 767 |

## **Output** 1.

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mount("/content/drive", force_remount=True).
```

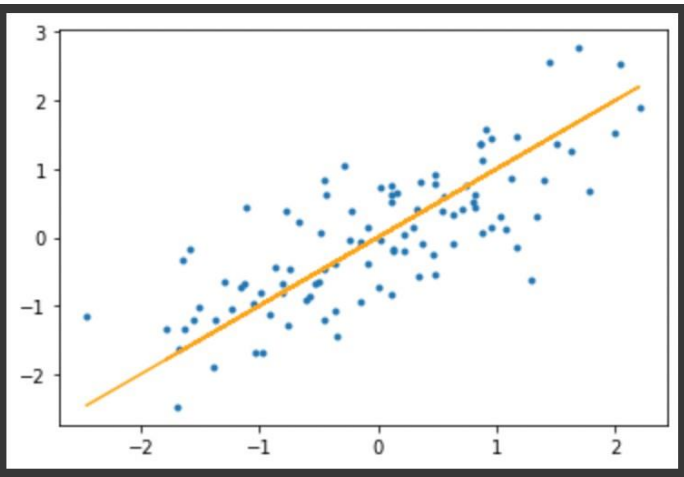
## 2.




## 3.

```
epoch 1, loss 0.407339
epoch 2, loss 0.269549
epoch 3, loss 0.227095
epoch 4, loss 0.176195
epoch 5, loss 0.313268
epoch 6, loss 0.350332
epoch 7, loss 0.181222
epoch 8, loss 0.347249
epoch 9, loss 0.110235
epoch 10, loss 0.192477
```

**4.**




**5.**

```
Coefficients:
 [[0.99862361]]
```

**6.**

```
Mean squared error: 0.45
```

**7.**

```
Coefficient of determination: 0.55
```