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BE comp ‘c’

Roll no-311

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#include<iostream>

#include<math.h> using namespace std;

int main()

{

cout<<"---------------------------------------------------------";

cout<<"\n\t\t\tKnn code\n";

cout<<"---------------------------------------------------------\n"; int array[10][3];

array[0][0]=4; array[0][1]=2; array[0][2]=1;

array[1][0]=2; array[1][1]=3; array[1][2]=1;

array[2][0]=3; array[2][1]=4; array[2][2]=0;

array[3][0]=4; array[3][1]=5; array[3][2]=1;

array[4][0]=2; array[4][1]=3; array[4][2]=1;

array[5][0]=2; array[5][1]=4; array[5][2]=0;

array[6][0]=3; array[6][1]=5; array[6][2]=0;

array[7][0]=1; array[7][1]=4; array[7][2]=0;

array[8][0]=2; array[8][1]=5; array[8][2]=0;

array[9][0]=3; array[9][1]=3; array[9][2]=0;

array[10][0]=4; array[10][1]=4;

int a[10]; int b[10];

cout<<"\n#Training set :"; cout<<"\nX\tY\tOutput"; for(int i=0;i<11;i++)

{ cout<<"\n";

for(int j=0;j<3;j++)

{

cout<<array[i][j]<<"\t";

}

}

cout<<"\n#Unkown point :"; cout<<"\nX\tY\n"; for(int j=0;j<2;j++)

{ int i=10;

cout<<array[i][j]<<"\t";

}

cout<<"\n\n#Calculating distance from unknown point :"; cout<<"\n\nDistance\tOutput";

for(int i=0;i<10;i++)

{

a[i]=sqrt(pow((array[10][0]-array[i][0]),2) + pow((array[10][1]-array[i]

[1]),2)); b[i]=array[i][2];

cout<<"\n"<<a[i]<<"\t\t"<<b[i]; }

//sorting according to distance

int temp; int temp1; for(int i=0;i<9;i++)

{

for(int j=9;i<j;j--)

{ if(a[j]<a[j-1])

{ temp=a[j]; temp1=b[j];

a[j]=a[j-1]; b[j]=b[j-1];

a[j-1]=temp; b[j-1]=temp1;

}

} }

cout<<"\n\n##sorted list : "; cout<<"\nDistance \tOutput";

for(int i=0;i<10;i++)

{ cout<<"\n"<<a[i]<<"\t\t"<<b[i]; }

int k;

cout<<"\n\nenter the no of neighbours to be considered(k) = "; cin>>k;

int y=0,n=0; for(int i=0;i<k;i++)

{ if(b[i]==0)

y++; else n++;

}

if(y>n) cout<<"\nOutput = yes(0)"; else cout<<"\nOutput = no(1)"; cout<<"\n\n"; }

/\*------------------------------------output--------------------------

pccoe@ubuntu:~$ cd knn pccoe@ubuntu:~/knn$ g++ knn.cpp pccoe@ubuntu:~/knn$ ./a.out

---------------------------------------------------------

Knn code

--------------------------------------------------------#Training set :

|  |  |  |
| --- | --- | --- |
| X | Y | Output |
| 4 | 2 | 1 |
| 2 | 3 | 1 |
| 3 | 4 | 0 |
| 4 | 5 | 1 |
| 2 | 3 | 1 |
| 2 | 4 | 0 |
| 3 | 5 | 0 |
| 1 | 4 | 0 |
| 2 | 5 | 0 |
| 3 | 3 | 0 |
| 4 | 4 | 0 |

#Unkown point :

X Y

4 4

#Calculating distance from unknown point :

Distance Output

2 1

2 1

1 0

1. 1
2. 1

2 0

1 0

3 0

2 0

1 0

##sorted list :

Distance Output

1 0

1 1

1 0

1. 0
2. 1

2 1

2 1

2 0

1. 0
2. 0

enter the no of neighbours to be considered(k) = 3

Output = yes(0)