1 设计算法判定平面上n个点是否在一条直线上

2 设P是包围在给定矩形R中的一个简单多边形，q为R中任意一点，设计高效算法寻找连接q和R外部一点的线段，使得该线段与P相交的边的数量最少

3 给定平面上一组点，求该点集的直径。（文献查阅，然后用自己的语言进行算法思想的描述，包括时间复杂性分析）

4在平面上给定一个有n个点的集合S，求S的极大点。极大点的定义：设p1=(x1,y1)和p2=(x2,y2)是平面上的两个点，如果x1≤x2并且y1≤y2，则称p2支配p1，记为。点集S中的点p为极大点，意味着在S中找不到一个点q，q≠p并且，即p不被S中其它点支配。

写一份报告，介绍决策树模型，并编程解决以下眼镜配制的问题，提交时间5月3日

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | age | prescipt | astigmatic | tear rate | conclusion |
| 1 | young | myope | no | reduced | no lenses |
| 2 | young | myope | no | normal | soft |
| 3 | young | myope | yes | reduced | no lenses |
| 4 | young | myope | yes | normal | hard |
| 5 | young | hyper | no | reduced | no lenses |
| 6 | young | hyper | no | normal | soft |
| 7 | young | hyper | yes | reduced | no lenses |
| 8 | young | hyper | yes | normal | hard |
| 9 | pre | myope | no | reduced | no lenses |
| 10 | pre | myope | no | normal | soft |
| 11 | pre | myope | yes | reduced | no lenses |
| 12 | pre | myope | yes | normal | hard |
| 13 | pre | hyper | no | reduced | no lenses |
| 14 | pre | hyper | no | normal | soft |
| 15 | pre | hyper | yes | reduced | no lenses |
| 16 | pre | hyper | yes | normal | no lenses |
| 17 | presbyopic | myope | no | reduced | no lenses |
| 18 | presbyopic | myope | no | normal | no lenses |
| 19 | presbyopic | myope | yes | reduced | no lenses |
| 20 | presbyopic | myope | yes | normal | hard |
| 21 | presbyopic | hyper | no | reduced | no lenses |
| 22 | presbyopic | hyper | no | normal | soft |
| 23 | presbyopic | hyper | yes | reduced | no lenses |
| 24 | presbyopic | hyper | yes | normal | no lenses |