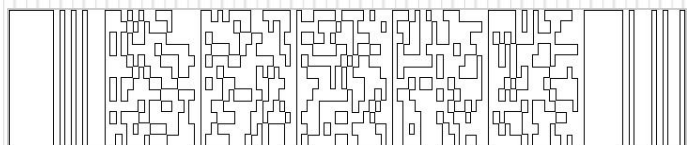


译码

复习

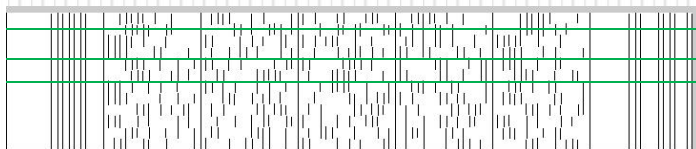
上周回顾

提取边缘



统计层数

扫描每一层的码字



得到decodes[]

dcodes					
1x36 double					
1	2	3	4	5	
32	902	3	393	512	
1x36 double					
27	28	29	30	31	32
899	883	899	853	901	255

本周内容

三种译码模式

文本、字节、数字

译码模式的转移和锁定

锁定：三种译码模式之间的转变

转移：文本内大小写、标点的转移

译码流程

三种译码模式

表 2 模式切换码字表

模 式		模式锁定	模式转移
文本压缩模式	大写字母型子模式	900	
	小写字母型子模式		
	混合型子模式		
	标点型子模式		
字节压缩模式		901/924 ¹⁾	913
数字压缩模式		902	
1) 见第 4.3.5.3。			

Decodes结果:

1x36 double

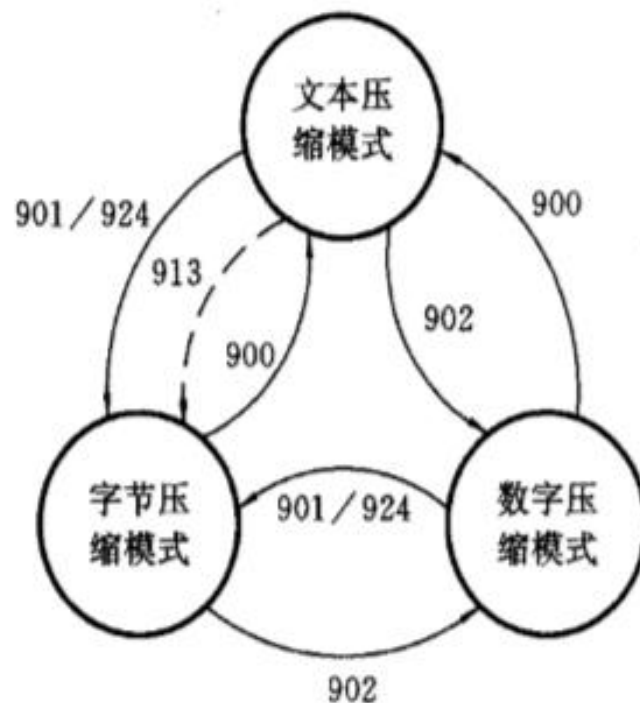
	1	2	3	4	5	6
1	32	902	3	393	512	
2						
3						

12	13	14	15
496	645	900	883

转移和锁定

❧ 模式 锁定 码字用于将当前模式切换为指定的目标模式，该模式在下一个切换前一直有效。

❧ 模式 转移 码字用于将文本压缩模式暂时切换切换为字节压缩，这种切换仅对切换后的第一个码字有效，随后的码字又返回文本压缩的当前子模式。







---- 模式转移
—— 模式锁定

文本压缩模式(TC)

∞ 文本压缩模式包括4个子模式:

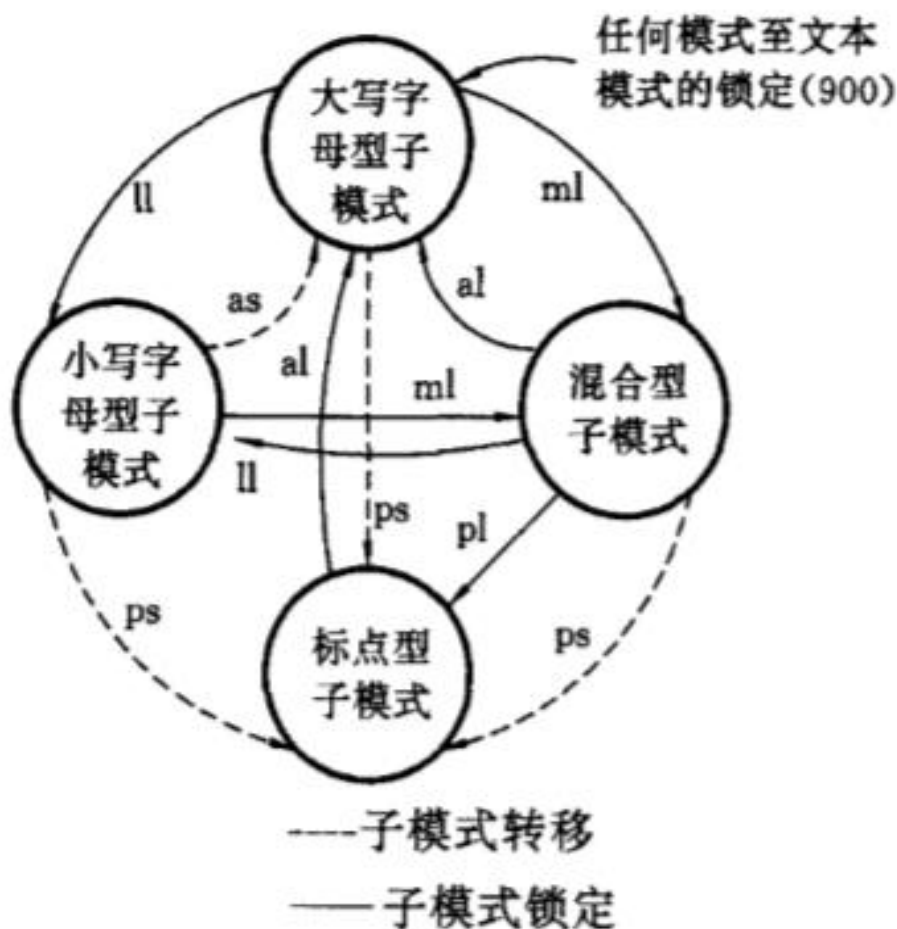
1. 大写字母型模式
2. 小写字母型模式
3. 混合型子模式
4. 标点型子模式

	tc_do	1x30 double
	tc_lc	1x30 double
	tc_mi	1x30 double
	tc_uc	1x30 double

```
tc_uc=[65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,32,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000,1001,1002,1003,1004,1005,1006,1007,1008,1009,1010,1011,1012,1013,1014,1015,1016,1017,1018,1019,1020,1021,1022,1023,1024,1025,1026,1027,1028,1029,1030,1031,1032,1033,1034,1035,1036,1037,1038,1039,1040,1041,1042,1043,1044,1045,1046,1047,1048,1049,1050,1051,1052,1053,1054,1055,1056,1057,1058,1059,1060,1061,1062,1063,1064,1065,1066,1067,1068,1069,1070,1071,1072,1073,1074,1075,1076,1077,1078,1079,1080,1081,1082,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1109,1110,1111,1112,1113,1114,1115,1116,1117,1118,1119,1120,1121,1122,1123,1124,1125,1126,1127,1128,1129,1130,1131,1132,1133,1134,1135,1136,1137,1138,1139,1140,1141,1142,1143,1144,1145,1146,1147,1148,1149,1150,1151,1152,1153,1154,1155,1156,1157,1158,1159,1160,1161,1162,1163,1164,1165,1166,1167,1168,1169,1170,1171,1172,1173,1174,1175,1176,1177,1178,1179,1180,1181,1182,1183,1184,1185,1186,1187,1188,1189,1190,1191,1192,1193,1194,1195,1196,1197,1198,1199,1200,1201,1202,1203,1204,1205,1206,1207,1208,1209,1210,1211,1212,1213,1214,1215,1216,1217,1218,1219,1220,1221,1222,1223,1224,1225,1226,1227,1228,1229,1230,1231,1232,1233,1234,1235,1236,1237,1238,1239,1240,1241,1242,1243,1244,1245,1246,1247,1248,1249,1250,1251,1252,1253,1254,1255,1256,1257,1258,1259,1260,1261,1262,1263,1264,1265,1266,1267,1268,1269,1270,1271,1272,1273,1274,1275,1276,1277,1278,1279,1280,1281,1282,1283,1284,1285,1286,1287,1288,1289,1290,1291,1292,1293,1294,1295,1296,1297,1298,1299,1300,1301,1302,1303,1304,1305,1306,1307,1308,1309,1310,1311,1312,1313,1314,1315,1316,1317,1318,1319,1320,1321,1322,1323,1324,1325,1326,1327,1328,1329,1330,1331,1332,1333,1334,1335,1336,1337,1338,1339,1340,1341,1342,1343,1344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```

文本压缩--子模式的转移

- 任何模式到文本压缩模式的锁定都是到大写字母型子模式的锁定。
- 在一个子模式转移符后不接另一个子模式转移或锁定。



←子模式的切换切换结构

%将模式转换符号定义成数值,如下:

- %ll=201, 锁定为小写字母模式
- %ml=202, 锁定为混合模式
- %pl=203, 锁定为标点模式
- %al=200, 锁定为大写字母模式
- %ps=204, 转移为标点模式
- %as=205, 转移为大写字母模式

数字压缩模式 (NC)

∞ 编码:

1. 将数字分成 44 位为一组,最后一组可以小于 44 位;
2. 对每组,在前面数字加入 “1”,然后进行 10 至 900 的基数转换。

∞ 译码:

1. 分组: 将每15个码字从左到右分为一组 (每15个码字可转换成 44个数字位), 其最后一组码字可小于15个。
2. 对于每一组码字: 先执行基900到基10的转换, 再去掉前导位1.

∞ 如码字1, 624, 434, 632, 282, 200

$$1 \times 900^5 + 624 \times 900^4 + 434 \times 900^3 + 632 \times 900^2 + 282 \times 900 + 200 =$$

1000213298174000

去掉前导位 1 得: 000213298174000

Matlab实现

∞ 定义特殊符号

1. 根据码字表，建立各子模式下的对应字符表：

```
tc_uc=[65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,32,201,202,204];%大写字母模式
tc_lc=[97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,32,205,202,204];%小写字母模式
tc_mi=[48,49,50,51,52,53,54,55,56,57,38,13,09,44,58,35,45,46,36,47,43,37,42,61,94,203,32,201,200,204];%混合模式
tc_do=[59,60,62,64,91,92,93,95,96,126,33,13,09,44,58,10,45,46,36,47,34,124,42,40,41,63,123,125,39,200];%标点模式
```

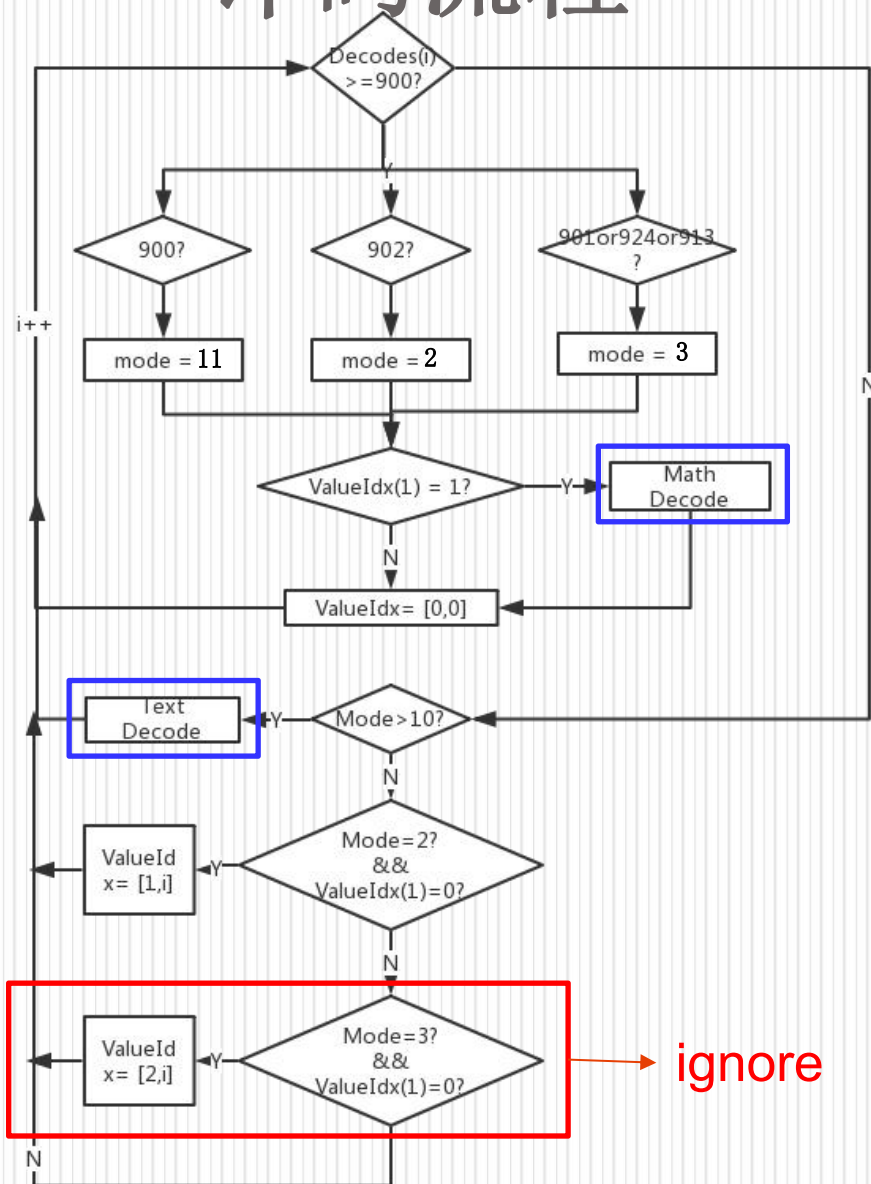
2. 其中转移符号：

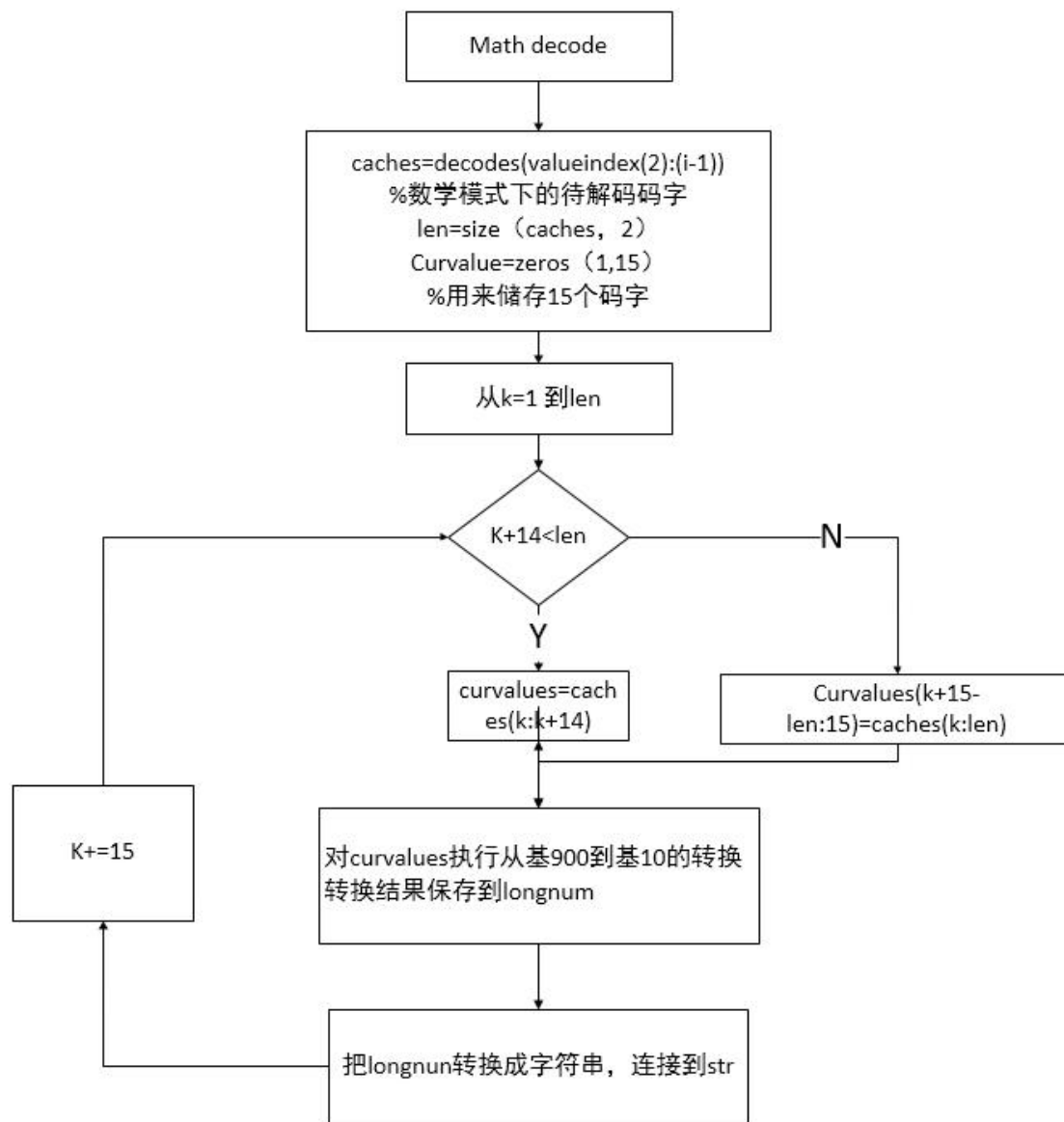
ll=201 ml=202 pl=203 al=200 ps =204 as=205;

建立辅助变量:

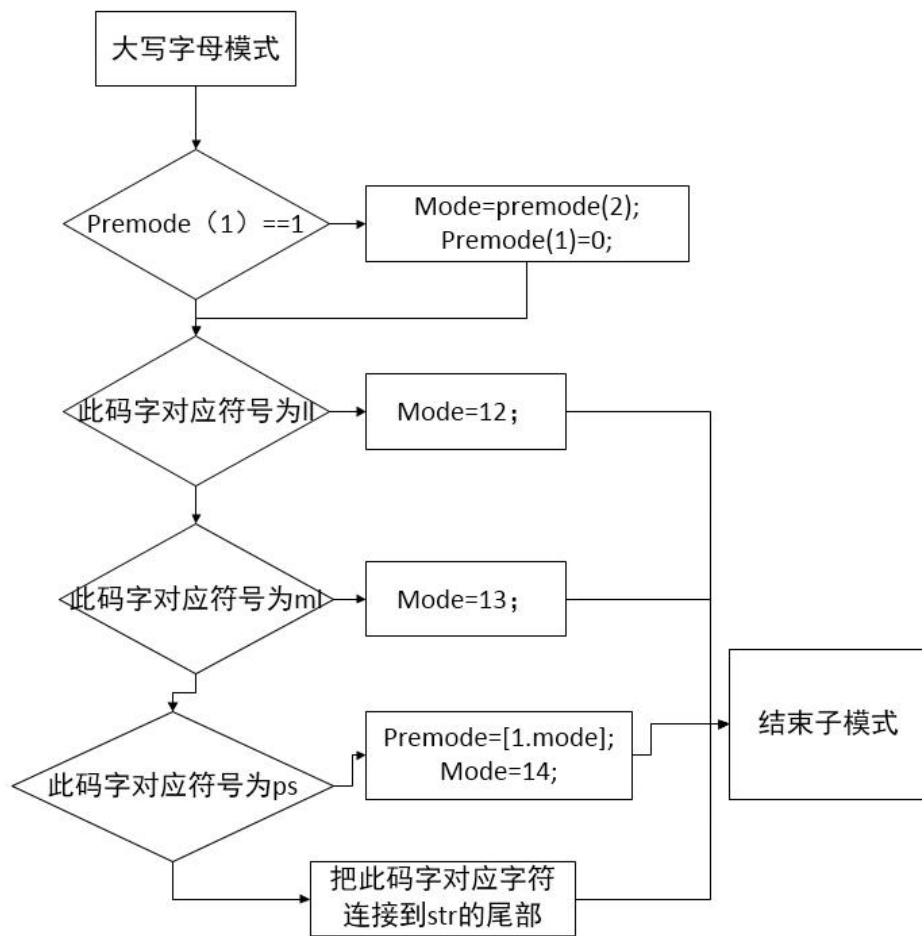
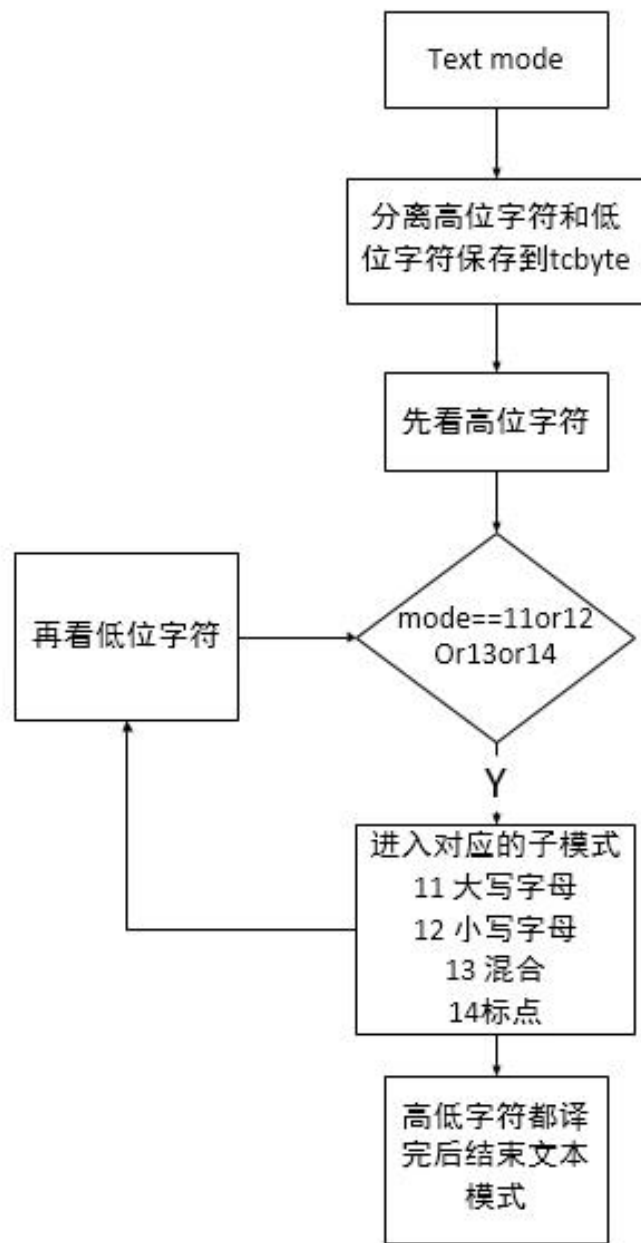
1. `codelen=decodes (1)` %待解码码字长度
2. `mode=11`%表示当前的解码模式，数字型：2，字节型：3，文本大写模式：11，文本小写：12，文本混合：13，文本标点：14
3. `premode=[0,0]` %用于转移模式时记录模式值，第一个表示当前是否为转移模式，第二个表示要返回的模式值
4. `tcbyte=[0,0]` %用来记录文本模式时的高低位数据，第一个值表示高位，第二个表示低位。
5. `valueindex=[0,0]` %用于记录字节模式和数字模式的缓存序列，其中第一个值表示序列是否有效及何种模式 无效 0，数字模式1 字节模式 2 第二个值表示序列起始位置。
6. `str=""` %用来存放译码结果

译码流程





**K到len后译码
结束**



其它子模式的译码原理同大写字母模式

如果码字对应的是as, 则
premode=[1,mode] ;
mode=11;

	n值		
m=1	32	902	3
m=2	393	512	563
m=3	733	323	226
m=1	640	819	496
m=2	645	900	883
m=3	821	459	841
m=1	278	151	62
m=2	131	885	899
m=3	899	899	899
m=1	883	899	853
m=2	901	255	41
m=3	777	735	806

数据区中的第一个码字是符号长度值: 32

模式锁定: 数字压缩模式

3 393 512 563 733 323 226 640 819 496 645

基900到基10的转换:

```
>>> 3*pow(900,10) + 393*pow(900,9) + 512*pow(900,8) + 563*pow(900,7) + 733*pow(900,6)
+ 323*pow(900,5) + 226*pow(900,4) + 640*pow(900,3) + 819*pow(900,2) + 496*900 + 645
1198512241359411830015823837045L
```

去掉前导位1 => 198512241359411830015823837045

模式锁定: 文本压缩模式

多出来的是错误纠正码字

字节压缩模式

883 821 459 841 278 151 62 131
885 899 899 899 899 883 899 853

码字转为字符对:

- ll=锁定为小写字母型子模式
- ps=转移为标点型子模式
- ml=锁定为混合型子模式
- al=锁定为大写字母型子模式
- pl=锁定为标点型子模式
- as=转移为大写字母型子模式

29 13 27 11 15 9 28 1 9 8 5 1 2 2 4 13
29 15 29 29 29 29 29 29 29 29 13 29 29 28 13

转为具体字符 => ,lpj19851224,,

**迷人风景只有站在一定高度才能领略，
望诸君努力，谢谢！**

