**PREM KRISHNA CHETTRI**

**Computer Architecture Assignment 5 Submission Date: 30th Nov ‘15**

**Solution 1.1**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Local | | | | Global | | | | Selector | | | |  |  |
|  |  | Sat. counter | | |  | Sat. counter | | |  | Sat. counter | | |  | Final | Actual |
| Cycle | PC | Index | Old | New | Pred’n | Index | Old | New | Pred’n | Index | Old | New | Pred’n | Pred’n | Res’n |
| 0 | 0 | 0 | 00 | 00 | N | 0 | 00 | 00 | N | 0 | 00 | 00 | L | N | N |
| 1 | 1 | 1 | 00 | 01 | N | 10 | 00 | 01 | N | 10 | 00 | 00 | L | N | T |
| 2 | 7 | 2 | 00 | 00 | N | 010 | 00 | 00 | N | 010 | 00 | 00 | L | N | N |
| 3 | 8 | 3 | 00 | 01 | N | 1010 | 00 | 01 | N | 1010 | 00 | 00 | L | N | T |
| 4 | 3 | 4 | 00 | 00 | N | 01010 | 00 | 00 | N | 01010 | 00 | 00 | L | N | N |
| 5 | 4 | 5 | 00 | 01 | N | 101010 | 00 | 01 | N | 101010 | 00 | 00 | L | N | T |
| 6 | 5 | 6 | 00 | 01 | N | 110101 | 00 | 01 | N | 110101 | 00 | 00 | L | N | T |
| 7 | 8 | 7 | 01 | 10 | N | 111010 | 00 | 01 | N | 111010 | 00 | 00 | L | N | T |
| 8 | 3 | 8 | 00 | 00 | N | 011101 | 00 | 00 | N | 011101 | 00 | 00 | L | N | N |
| 9 | 4 | 9 | 00 | 00 | N | 001110 | 00 | 00 | N | 001110 | 00 | 00 | L | N | N |

**Solution 1.3**.

1. Correct local prediction number count as 8559, which is 85.59% correct.
2. Correct global prediction number count as 9266, which is 92.66% correct.
3. Correct tournament prediction number count as 9978, which is 99.78% correct.

**Solution 2.1**.

|  |  |  |  |
| --- | --- | --- | --- |
| Cycle | Command | Address | Output Enabled |
| 0 | A | 04223 | F |
| 1 | I |  | F |
| 2 | I |  | F |
| 3 | I |  | F |
| 4 | I |  | F |
| 5 | I |  | F |
| 6 | I |  | F |
| 7 | I |  | F |
| 8 | I |  | F |
| 9 | I |  | F |
| 10 | I |  | F |
| 11 | I |  | F |
| 12 | R | 038 | T |
| 13 | I |  | F |
| 14 | I |  | F |
| 15 | I |  | F |
| 16 | I |  | F |
| 17 | I |  | F |
| 18 | I |  | F |
| 19 | I |  | F |
| 20 | I |  | F |
| 21 | I |  | F |
| 22 | I |  | F |
| 23 | I |  | F |
| 24 | I |  | F |
| 25 | I |  | F |
| 26 | I |  | F |
| 27 | I |  | F |
| 28 | I |  | F |
| 29 | I |  | F |
| 30 | P |  | T |
| 31 | I |  | F |
| 32 | I |  | F |
| 33 | I |  | F |
| 34 | I |  | F |
| 35 | I |  | F |
| 36 | I |  | F |
| 37 | I |  | F |
| 38 | I |  | F |
| 39 | I |  | F |
| 40 | I |  | F |
| 41 | I |  | F |
| 42 | I |  | F |
| 43 | I |  | F |
| 44 | I |  | F |
| 45 | I |  | F |
| 46 | I |  | F |
| 47 | I |  | F |
| 48 | I |  | F |
| 49 | I |  | F |
| 50 | A | FEFFF | F |
| 51 | I |  | F |
| 52 | I |  | F |
| 53 | I |  | F |
| 54 | I |  | F |
| 55 | I |  | F |
| 56 | I |  | F |
| 57 | I |  | F |
| 58 | I |  | F |
| 59 | I |  | F |
| 60 | I |  | F |
| 61 | I |  | F |
| 62 | W | 288 | T |
| 63 | W | 168 | T |
| 64 | W | 1B8 | T |
| 65 | I |  | F |
| 66 | I |  | F |
| 67 | I |  | F |
| 68 | I |  | F |
| 69 | I |  | F |
| 70 | I |  | F |
| 71 | I |  | F |
| 72 | I |  | F |
| 73 | I |  | F |
| 74 | I |  | F |
| 75 | I |  | F |
| 76 | I |  | F |
| 77 | I |  | F |
| 78 | I |  | F |
| 79 | I |  | F |
| 80 | P |  | T |
| 81 | I |  | F |
| 82 | I |  | F |
| 83 | I |  | F |
| 84 | I |  | F |
| 85 | I |  | F |
| 86 | I |  | F |
| 87 | I |  | F |
| 88 | I |  | F |
| 89 | I |  | F |
| 90 | I |  | F |
| 91 | I |  | F |
| 92 | I |  | F |
| 93 | I |  | F |
| 94 | I |  | F |
| 95 | I |  | F |
| 96 | I |  | F |
| 97 | I |  | F |
| 98 | I |  | F |
| 99 | I |  | F |
| 100 | A | 04221 | F |
| 101 | I |  | F |
| 102 | I |  | F |
| 103 | I |  | F |
| 104 | I |  | F |
| 105 | I |  | F |
| 106 | I |  | F |
| 107 | I |  | F |
| 108 | I |  | F |
| 109 | I |  | F |
| 110 | I |  | F |
| 111 | I |  | F |
| 112 | R | CB0 | T |
| 113 | I |  | F |
| 114 | I |  | F |
| 115 | I |  | F |
| 116 | I |  | F |
| 117 | I |  | F |
| 118 | I |  | F |
| 119 | I |  | F |
| 120 | I |  | F |
| 121 | I |  | F |
| 122 | I |  | F |
| 123 | I |  | F |
| 124 | I |  | F |
| 125 | I |  | F |
| 126 | I |  | F |
| 127 | I |  | F |
| 128 | I |  | F |
| 129 | I |  | F |
| 130 | P |  | T |
| 131 | I |  | F |
| 132 | I |  | F |
| 133 | I |  | F |
| 134 | I |  | F |
| 135 | I |  | F |
| 136 | I |  | F |

137 I F

|  |  |  |  |
| --- | --- | --- | --- |
| 138 | I |  | F |
| 139 | I |  | F |
| 140 | I |  | F |
| 141 | I |  | F |
| 142 | I |  | F |
| 143 | I |  | F |
| 144 | I |  | F |
| 145 | I |  | F |
| 146 | I |  | F |
| 147 | I |  | F |
| 148 | I |  | F |
| 149 | I |  | F |
| 150 | A | FEFFF | F |
| 151 | I |  | F |
| 152 | I |  | F |
| 153 | I |  | F |
| 154 | I |  | F |
| 155 | I |  | F |
| 156 | I |  | F |
| 157 | I |  | F |
| 158 | I |  | F |
| 159 | I |  | F |
| 160 | I |  | F |
| 161 | I |  | F |
| 162 | W | 1C0 | T |
| 163 | W | 1C8 | T |
| 164 | W | 1D0 | T |
| 165 | W | 1D8 | T |
| 166 | W | 1E0 | T |
| 167 | I |  | F |
| 168 | I |  | F |
| 169 | I |  | F |
| 170 | I |  | F |
| 171 | I |  | F |
| 172 | I |  | F |
| 173 | I |  | F |
| 174 | I |  | F |
| 175 | I |  | F |
| 176 | I |  | F |
| 177 | I |  | F |
| 178 | I |  | F |
| 179 | I |  | F |
| 180 | P |  | T |
| 181 | I |  | F |
| 182 | I |  | F |
| 183 | I |  | F |
| 184 | I |  | F |
| 185 | I |  | F |
| 186 | I |  | F |
| 187 | I |  | F |
| 188 | I |  | F |
| 189 | I |  | F |
| 190 | I |  | F |
| 191 | I |  | F |
| 192 | I |  | F |
| 193 | I |  | F |
| 194 | I |  | F |
| 195 | I |  | F |
| 196 | I |  | F |
| 197 | I |  | F |
| 198 | I |  | F |
| 199 | I |  | F |
| 200 | A | 04221 | F |
| 201 | I |  | F |
| 202 | I |  | F |
| 203 | I |  | F |
| 204 | I |  | F |
| 205 | I |  | F |
| 206 | I |  | F |
| 207 | I |  | F |
| 208 | I |  | F |
| 209 | I |  | F |
| 210 | I |  | F |
| 212 | I |  | F |
| 213 | R | CB0 | T |
| 214 |  |  |  |