CSCI2121 Assignment #6

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|  | Q1 |  |
|  | A |  |
| Time step | Concrete RTN | Control Sequence |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IORin, MDout |
| T3 | A 🡨 R[rb] | Ain, Grb, Rout |
| T4 | C 🡨 A n R[rc] | Cin, Aout, Grc, Rout, AND |
| T5 | R[ra] 🡨 C | Gra, Rin, Cout, END. |
|  |  |  |
|  | B |  |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IRin, MDout |
| T3 | A 🡨 R[rb] | Ain, Grb, Rout |
| T4 | C 🡨 A - R[rc] | Cin, Grc, Rout, SUB |
| T5 | R[ra] 🡨 C | Gra, Rin, Cout, END. |
|  |  |  |
|  | C |  |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IRin, MDout |
| T3 | A 🡨 PC | PCout, Ain |
| T4 | C 🡨 A+C1{Sign Ext} | Cin, C1out, Aout, ADD |
| T5 | R[ra] 🡨 C | Gra, Rin, Cout, END. |
|  | D |  |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IRin, MDout |
| T3 | A 🡨 PC | Ain, PCout |
| T4 | C 🡨 A+C1{Sign Ext} | Cin, Aout, C1out, ADD |
| T5 | MA 🡨 C | MAin, Cout |
| T6 | MD 🡨 M[MA] | MDrd, READ, WAIT |
| T7 | R[ra] 🡨 MD | MDout, Gra, Rin, END. |
|  |  |  |
|  | E |  |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IRin, MDout |
| T3 | A 🡨 R[rc] | Ain, Grc, Rout |
| T4 | C 🡨 A - R[rc] | Cin, Grc, Rout, SUB |
| T5 | A 🡨 C | Ain, Cout |
| T6 | C 🡨 A - R[rc] | Cin, Grc, Rout, SUB |
| T7 | R[ra] 🡨 C | Gra, Rin, Cout, END. |
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|  | Q2 |  |
| T0 | MA 🡨 [PC],  C 🡨 [PC]+4 | PCout, MAin, INC4, Cin |
| T1 | MD 🡨 M[MA],  PC 🡨 [C] | Cout, PCin, MDrd, STROBE, Read, Wait |
| T2 | IR 🡨 [MD] | IRin, MDout |
| T3 | C 🡨 ~ R[rb] | Cin, Grb, Rout, NOT |
| T4 | A 🡨 C | Ain, Cout |
| T5 | C 🡨 A n R[rc] | Cin, Grc, Rout, Aout, AND |
| T6 | MD 🡨 C | MDin, Cout |
| T7 | C 🡨 ~R[rc] | Cin, Grc, Rout, NOT |
| T8 | A 🡨 C | Ain, Cout |
| T9 | C 🡨 A n R[rb] | Cin, Grb, Rout, AND |
| T10 | A 🡨 C | Ain, Cout |
| T11 | C 🡨 A u MD | Cin, Aout, MDout, OR |
| T12 | R[ra] 🡨 C | Gra, Rin, Cout, End |