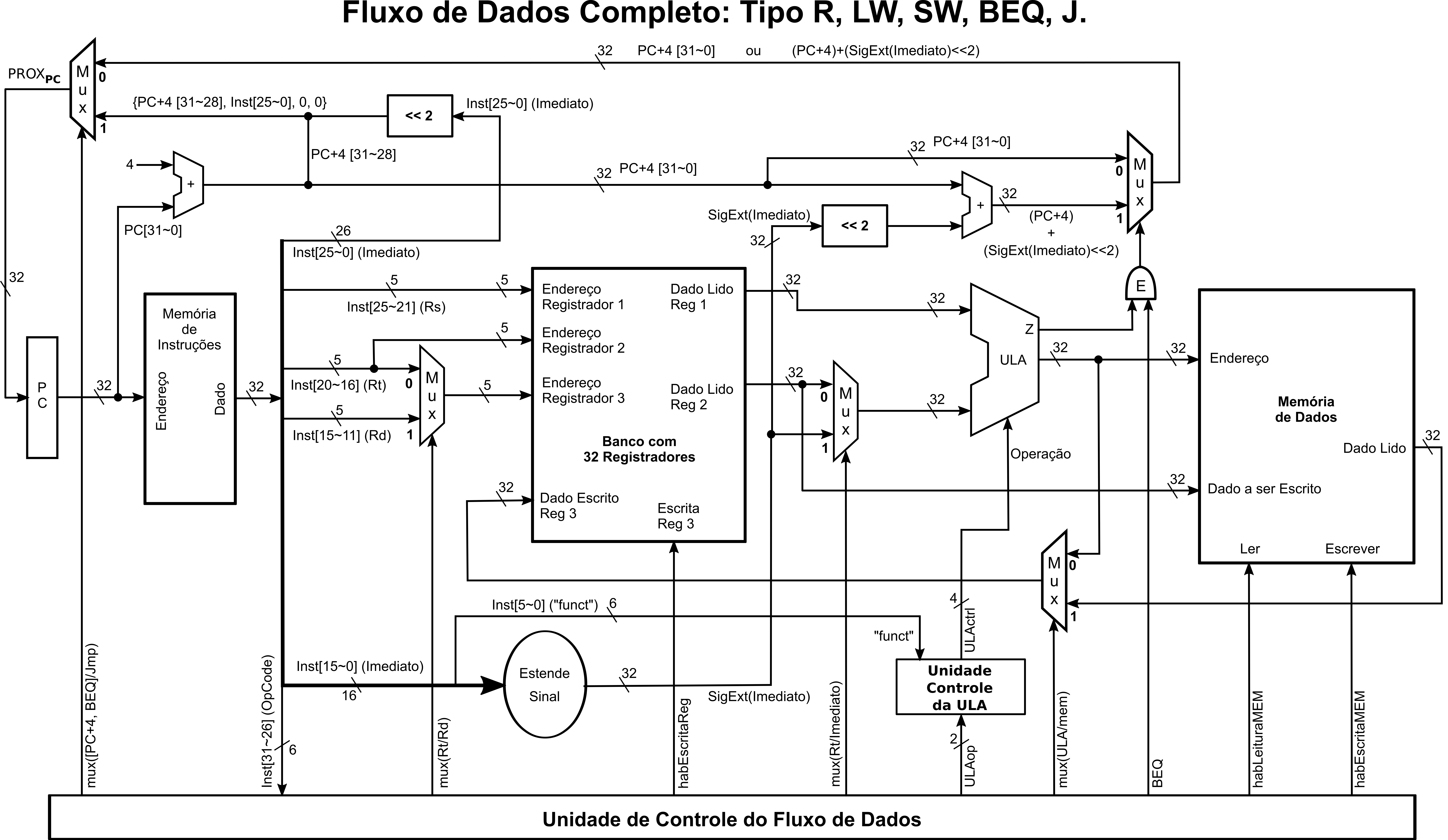
**Tabelas da Unidade de Controle do FD.**

****

**Função dos pontos de controle do FD (o ULAop já foi definido anteriormente):**

|  |  |  |
| --- | --- | --- |
| **Nome** | **Desativado (0)** | **Ativado (1)** |
| mux([PC+4, BEQ]/J) |  |  |
| mux(Rt/Rd) |  |  |
| habEscritaReg |  |  |
| mux(Rt/imediato) |  |  |
| mux(ULA/mem) |  |  |
| BEQ |  |  |
| habLeituraMEM |  |  |
| habEscritaMEM |  |  |

**Tabela de ativação dos Pontos de Controle do FD:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Entrada** |  |  |  | **Saídas** | | | | | | | | |
| **Ins-trução** | **Opcode** | **JR** | **BNE** | **ORI/ANDI** | **Mux1**  **prox\_pc** | **Mux2**  **Mux Rt/Rd** | **Hab** **Escrita** **Reg** | **Mux3 Rt/imediato** | **Mux4 ULA/mem** | **BEQ** | **Hab** **Le** **MEM** | **Hab** **Esc** **MEM** | **Tipo R** |
| Tipo R | 000000 | 0 | 0 | 1 | 0 | 01 | 1 | 0 | 00 | 0 | 0 | 0 | 1 |
| LW | 100011 | 0 | 0 | 1 | 0 | 00 | 1 | 1 | 01 | 0 | 1 | 0 | 0 |
| SW | 101011 | 0 | 0 | 1 | 0 | 00 | 0 | 1 | 00 | 0 | 0 | 1 | 0 |
| BEQ | 000100 | 0 | 0 | 1 | 0 | 00 | 0 | 0 | 00 | 1 | 0 | 0 | 0 |
| J | 000010 | 0 | 0 | 1 | 1 | 00 | 0 | 0 | 00 | 0 | 0 | 0 | 0 |
| LUI | 001111 | 0 | 0 | 1 | 0 | 00 | 1 | 0 | 11 | 0 | 0 | 0 | 0 |
| ORI | 001101 | 0 | 0 | 0 | 0 | 00 | 1 | 1 | 00 | 0 | 0 | 0 | 0 |
| ADDI | 001000 | 0 | 0 | 1 | 0 | 01 | 1 | 0 | 00 | 0 | 0 | 0 | 0 |
| ANDI | 001100 | 0 | 0 | 0 | 0 | 00 | 1 | 1 | 00 | 0 | 0 | 0 | 0 |
| BNE | 000101 | 0 | 1 | 1 | 0 | 00 | 0 | 0 | 00 | 0 | 0 | 0 | 0 |
| SLTI | 001010 | 0 | 0 | 1 | 0 | 00 | 1 | 1 | 00 | 0 | 0 | 0 | 0 |
| JR | 000000 | 1 | 0 | 1 | 0 | 01 | 0 | 0 | 00 | 0 | 0 | 0 | 1 |
| JAL | 000011 | 0 | 0 | 1 | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Entrada** |  | **Saídas** | | | | | | | | |
| **Ins-trução** | **Opcode** | **ORI/ANDI** | **Mux1**  **prox\_pc** | **Mux2**  **Mux Rt/Rd** | **Hab** **Escrita** **Reg** | **Mux3 Rt/imediato** | **Mux4 ULA/mem** | **BEQ** | **Hab** **Le** **MEM** | **Hab** **Esc** **MEM** | **ULAop** |
| Tipo R | 000000 | 1 | 0 | 1 | 1 | 0 | 00 | 0 | 0 | 0 | 10 |
| LW | 100011 | 1 | 0 | 0 | 1 | 1 | 01 | 0 | 1 | 0 | 00 |
| SW | 101011 | 1 | 0 | 0 | 0 | 1 | 00 | 0 | 0 | 1 | 00 |
| BEQ | 000100 | 1 | 0 | 0 | 0 | 0 | 00 | 1 | 0 | 0 | 01 |
| J | 000010 | 1 | 1 | 0 | 0 | 0 | 00 | 0 | 0 | 0 | 00 |
| LUI | 001111 | 1 | 0 | 0 | 1 | 0 | 11 | 0 | 0 | 0 | 00 |
| ORI | 001101 | 0 | 0 | 0 | 1 | 1 | 00 | 0 | 0 | 0 | 11 |
| addi | 001000 | 1 | 0 | 1 | 1 | 0 | 00 | 0 | 0 | 0 | 00 |

Identificação dos circuitos MUX:

**Mux1: mux([PC+4, BEQ]/J); Mux2: mux(Rt/Rd);**

**Mux3: mux(Rt/imediato); Mux4: mux(ULA/mem).**