Jake Waffle

CS 250

Chapter 3 Exercises

Review Questions

3.4. A computer’s bus must support read and write transfers, but some buses also support read-modify-write, read-after-write and block transfers.

3.5. A multiple-bus architecture can generally out perform its single-bus counterpart because its data lines are shorter.

Problems 3.1, 3.3, 3.7, 3.11, 3.13, 3.14, 3.16, 3.17

3.1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 001 | 3005 |  | 001 | PC |
|  |  |  |  | AC |
|  |  |  | 3005 | IR |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 001 | 3005 |  | 001 | PC |
|  |  |  | 0003 | AC |
| 005 | 0003 |  | 3005 | IR |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 001 | 3005 |  | 002 | PC |
| 002 | 5940 |  | 0003 | AC |
| 940 | 0003 |  | 5940 | IR |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 001 | 3005 |  | 002 | PC |
| 002 | 5940 |  | 0005 | AC |
| 940 | 0002 |  | 5940 | IR |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 002 | 5940 |  | 003 | PC |
| 003 | 7006 |  | 0005 | AC |
| 940 | 0002 |  | 7006 | IR |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Memory | |  | CPU registers | |
| 002 | 5940 |  | 003 | PC |
| 003 | 7006 |  | 0005 | AC |
| 006 | 0005 |  | 7006 | IR |

3.3

a) The maximum directly addressable memory capacity in bytes is FFFFFFF.

b)

1)