Assignment Report

CS220

CSE-BUBBLE

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PDS1:-

Name	Register	usage
$zero	0	The constant value 0
$v0-$v1	2-3	Values for results and expression evaluation
$a0-$a3	4-7	Arguments
$t0-$t7	8-15	Temporaries
$s0-$s7	16-23	saved
$t8-$t9	24-25	More temporaries
$gp	28	Global pointer
$sp	29	Stack pointer
$fp	30	Frame pointer
$ra	31	Return address

PDS2:-

We plan to use the memory of size 512*32, which will be equally divided into Data memory and instruction memory of size 256*32

PDS3:-

1) R-type:-

op	rs	rt	rd	shamt	funct
6 bits	5 bits	5 bits	5 bits	5 bits	6 bits

- It is 32 bits or 4 bytes wide
- Bit 31 to bit 26 is used to store the operation code for the instruction.
- Bit 25 to bit 21 is used to store the number of the register that is the first source operand
- Bit 20 to bit 16 is used to store the number of the register that is the second source operand
- Bit 15 to bit 11 is used to store the number of the register that is the destination
- Bit 10 to bit 6 is used to store the shift amount
- Bit 5 to bit 0 is used to store function code

2) J-type:-

op	Address field
6 bits	26 bits

- It is 32 bits or 4 bytes wide
- Bit 31 to bit 26 is used to store operation code for the instruction.
- Bit 25 to bit 21 is used to store the number of the register that stores the base address.
- Bit 20 to bit 16 is used to store the number of the register that is the destination.
- Bit 15 to bit 0 is used to store the memory address that is to be loaded.

3) I-type:-

op	rs	rt	constant
6 bits	5 bits	5 bits	16 bits

- It is 32 bits or 4 bytes wide
- Bit 31 to bit 26 is used to store the operation code for the instruction.
- Bit 25 to bit 0 is used to store the offset from the current instructions.