```java
import java.util.concurrent.ThreadPoolExecutor;

public class MEM_WB {


	//Properties
	Instruction_ instruction = new Instruction_();

		//read
	int lwDataValue_read;
	int aluResult_read;
	int writeRegNum_read;
	int aluSrc_read;

		//write
	int lwDataValue_write;
	int aluResult_write;
	int writeRegNum_write;

		//control points R
	int memRead_read = 0;
	int memWrite_read = 0;
	int branch_read = 0;
	int memToReg_read = 0;
	int regWrite_read = 0;
	int swValue_write = 0;

		//control points W
	int regDst_write = 0;
	int aluSrc_write = 0;
	int memRead_write = 0;
	int memWrite_write = 0;
	int branch_write = 0;
	int memToReg_write = 0;
	int regWrite_write = 0;
	int swValue_read = 0;


	//Constructors
	public MEM_WB(){

	}


	//Methods

	public void runThisStageWrite( DataCycle theCycle, EX_MEM theEx_MemStage ){
		this.setDataWrite( theEx_MemStage );
		this.AccessMem( theCycle );

	}

	public void runThisStageRead(){
		this.setDataRead();

	}
	public void runThisStageWB( DataCycle theCycle ){
		this.writeToReg( theCycle );
	}

	public void setDataWrite( EX_MEM theExMemStage ){
		this.regWrite_write = theExMemStage.regWrite_read;
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        this.memToReg_write = theExMemStage.memToReg_read;
        this.aluSrc_write = theExMemStage.memToReg_read;
        this.writeRegNum_write = theExMemStage.writeRegNum_read;
        this.lwDataValue_write = 0;
        this.swValue_write = theExMemStage.swValue_read;
        this.memWrite_write = theExMemStage.memWrite_read;
        this.aluResult_write = theExMemStage.aluResult_read;
        this.memRead_write = theExMemStage.memRead_read;


}

public void setDataRead(){

}

public void AccessMem( DataCycle theCycle ) {
        //sb
        if ( this.memWrite_write == 1 ) {
                theCycle.mainMem[ this.aluResult_write ] =  this.swValue_write;
                this.memToReg_write = -1;
        }
}

public void writeToReg( DataCycle theCycle ) {
        //lb
        if ( this.regWrite_write == 1 && this.memToReg_write == 1  ) {
                this.lwDataValue_write = theCycle.mainMem[ this.aluResult_write ];
                theCycle.regs[ this.writeRegNum_write ] = this.lwDataValue_write;
        //add
        } else if( this.memToReg_write == 1 && this.regWrite_write == 1 ){
                        theCycle.regs[ this.writeRegNum_write ] = this.aluResult_write;
        }

}

        //setters and getter
public int getLwDataValue_read() {
        return lwDataValue_read;
}
public void setLwDataValue_read(int lwDataValue_read) {
        this.lwDataValue_read = lwDataValue_read;
}
public int getAluResult_read() {
        return aluResult_read;
}
public void setAluResult_read(int aluResult_read) {
        this.aluResult_read = aluResult_read;
}
public int getWriteRegNum_read() {
        return writeRegNum_read;
}
public void setWriteRegNum_read(int writeRegNum_read) {
        this.writeRegNum_read = writeRegNum_read;
}
public int getLwDataValue_write() {
        return lwDataValue_write;
}
public void setLwDataValue_write(int lwDataValue_write) {
        this.lwDataValue_write = lwDataValue_write;
}
public int getAluResult_write() {
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		return aluResult_write;
	}
	public void setAluResult_write(int aluResult_write) {
		this.aluResult_write = aluResult_write;
	}
	public int getWriteRegNum_write() {
		return writeRegNum_write;
	}
	public void setWriteRegNum_write(int writeRegNum_write) {
		this.writeRegNum_write = writeRegNum_write;
	}

	public int getAluSrc_read() {
		return aluSrc_read;
	}
	public void setAluSrc_read(int aluSrc_read) {
		this.aluSrc_read = aluSrc_read;
	}
	public int getMemRead_read() {
		return memRead_read;
	}
	public void setMemRead_read(int memRead_read) {
		this.memRead_read = memRead_read;
	}
	public int getMemWrite_read() {
		return memWrite_read;
	}
	public void setMemWrite_read(int memWrite_read) {
		this.memWrite_read = memWrite_read;
	}
	public int getBranch_read() {
		return branch_read;
	}
	public void setBranch_read(int branch_read) {
		this.branch_read = branch_read;
	}
	public int getMemToReg_read() {
		return memToReg_read;
	}
	public void setMemToReg_read(int memToReg_read) {
		this.memToReg_read = memToReg_read;
	}
	public int getRegWrite_read() {
		return regWrite_read;
	}
	public void setRegWrite_read(int regWrite_read) {
		this.regWrite_read = regWrite_read;
	}
	public int getRegDst_write() {
		return regDst_write;
	}
	public void setRegDst_write(int regDst_write) {
		this.regDst_write = regDst_write;
	}
ublic int getAluSrc_write() {
		return aluSrc_write;
	}
	public void setAluSrc_write(int aluSrc_write) {
		this.aluSrc_write = aluSrc_write;
	}
	public int getMemRead_write() {
		return memRead_write;
```

```
	}
	public void setMemRead_write(int memRead_write) {
		this.memRead_write = memRead_write;
	}
	public int getMemWrite_write() {
		return memWrite_write;
	}
	public void setMemWrite_write(int memWrite_write) {
		this.memWrite_write = memWrite_write;
	}
	public int getBranch_write() {
		return branch_write;
	}
	public void setBranch_write(int branch_write) {
		this.branch_write = branch_write;
	}
	public int getMemToReg_write() {
		return memToReg_write;
	}
	public void setMemToReg_write(int memToReg_write) {
		this.memToReg_write = memToReg_write;
	}
	public int getRegWrite_write() {
		return regWrite_write;
	}
	public void setRegWrite_write(int regWrite_write) {
		this.regWrite_write = regWrite_write;
	}




}
```