Normalization
(50 points)

Here is some data that is to be kept in a database. Projects have multiple employees working on them. Pay rates are set by an employee's job class. Normalize this data from unnormalized to 3NF. Explain what you are doing and why you are doing it at each step. Only do what is required from each transitions from one form to the next. Once you have explained a transition, show the new relations and their attributes. This can be of the form TABLE(A1, A2,..An). Make sure you have indicated keys where necessary by underlining them.

This is sample data but does not represent all possibilities of data. Keep this in mind so you do not base your responses only on this dataset. For example, an employee could work on more than one project.

PROJ_NUM	PROJ_NAME	EMP_NUM	EMP_NAME	JOB_CLASS	CHG_HOUR	HOURS
15	Evergreen	103	June E. Arbough	Elect. Engineer	$84.50	23.8
		101	John G. News	Database Designer	$105.00	19.4
		105	Alice K. Johnson *	Database Designer	$105.00	35.7
		106	William Smithfield	Programmer	$35.75	12.6
		102	David H. Senior	Systems Analyst	$96.75	23.8
18	Amber Wave	114	Annelise Jones	Applications Designer	$48.10	24.6
		118	James J. Frommer	General Support	$18.36	45.3
		104	Anne K. Ramoras *	Systems Analyst	$96.75	32.4
		112	Darlene M. Smithson	DSS Analyst	$45.95	44.0