QUESTION ONE
DELIMITER &
CREATE PROCEDURE init(IN p INT(11))
BEGIN

        DECLARE column_count INT;
        SELECT COUNT(*) INTO column_count FROM INFORMATION_SCHEMA.COLUMNS
WHERE table_schema = 'stu_tlap632_COMPSCI_351_C_S1_2020' AND table_name =
'PROJECT';

        IF column_count < 5 THEN
                ALTER TABLE PROJECT ADD COLUMN Hours FLOAT;

                UPDATE PROJECT
                SET Hours = 0.0
                WHERE Pnumber = p;

        ELSE
                UPDATE PROJECT
                SET Hours = 0.0
                WHERE Pnumber = p;

        END IF;
END &

call init(1);

+ Options

				Pname	Pnumber	Plocation	Dnum	Hours
☐	Edit	Copy	Delete	ProductX	1	Bellaire	5	0
☐	Edit	Copy	Delete	ProductY	2	Sugarland	5	NULL
☐	Edit	Copy	Delete	ProductZ	3	Houston	5	NULL
☐	Edit	Copy	Delete	ProductA	4	Bellaire	8	NULL
☐	Edit	Copy	Delete	Computerization	10	Stafford	4	NULL
☐	Edit	Copy	Delete	Reorganization	20	Houston	1	NULL
☐	Edit	Copy	Delete	Newbenefits	30	Stafford	4	NULL
☐	Edit	Copy	Delete	OperatingSystem	61	Jacksonville	6	NULL
☐	Edit	Copy	Delete	DatabaseSystems	62	Birmingham	6	NULL
☐	Edit	Copy	Delete	Middleware	63	Jackson	6	NULL
☐	Edit	Copy	Delete	InkjetPrinters	91	Phoenix	7	NULL
☐	Edit	Copy	Delete	LaserPrinters	92	LasVegas	7	NULL

call init(10); [AFTER 'Hours' IS ADDED INTO **'PROJECT'**]

			Pname	Pnumber	Plocation	Dnum	Hours
☐	✏ Edit	⧉ Copy	⊖ Delete	ProductX	1	Bellaire	5	0
☐	✏ Edit	⧉ Copy	⊖ Delete	ProductY	2	Sugarland	5	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	ProductZ	3	Houston	5	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	ProductA	4	Bellaire	8	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	Computerization	10	Stafford	4	0
☐	✏ Edit	⧉ Copy	⊖ Delete	Reorganization	20	Houston	1	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	Newbenefits	30	Stafford	4	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	OperatingSystem	61	Jacksonville	6	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	DatabaseSystems	62	Birmingham	6	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	Middleware	63	Jackson	6	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	InkjetPrinters	91	Phoenix	7	NULL
☐	✏ Edit	⧉ Copy	⊖ Delete	LaserPrinters	92	LasVegas	7	NULL

QUESTION TWO

```
DELIMITER &
CREATE PROCEDURE stat()
BEGIN
        DECLARE p INT;
        DECLARE pmin INT;
        DECLARE pmax INT;
        DECLARE total_hours FLOAT;

        SET pmin = (SELECT MIN(Pnumber) FROM PROJECT); -- smallest project number
        SET pmax = (SELECT MAX(Pnumber) FROM PROJECT); -- largest project number
        SET p = pmin; -- starting number

        WHILE p <= pmax DO
            -- if p is in PROJECT (doesn't necessarily mean p is worked on)
            IF p IN (SELECT Pnumber FROM PROJECT WHERE EXISTS (SELECT * FROM
PROJECT)) THEN

                    -- if there are people working on it
                    IF p IN (SELECT Pnumber FROM PROJECT WHERE EXISTS (SELECT *
FROM WORKS_ON WHERE Pnumber=Pno)) THEN
                            SELECT SUM(w.Hours) INTO total_hours FROM PROJECT p
INNER JOIN WORKS_ON w ON p.Pnumber = w.Pno WHERE p.Pnumber = p;

                            UPDATE PROJECT
                            SET Hours = total_hours
                            WHERE Pnumber = p;
```

```
                    SET p = p + 1;

            -- if p exists but no one's working on it
            ELSE
                    UPDATE PROJECT
                    SET Hours = 0.0
                    WHERE Pnumber = p;

                    SET p = p + 1;

            END IF;

        ELSE -- if p isn't in PROJECT

            SET p = p + 1;

        END IF;
    END WHILE;
END
```

+ Options

	Pname	Pnumber	Plocation	Dnum	Hours
☐ Edit Copy Delete	ProductX	1	Bellaire	5	52.5
☐ Edit Copy Delete	ProductY	2	Sugarland	5	37.5
☐ Edit Copy Delete	ProductZ	3	Houston	5	50
☐ Edit Copy Delete	ProductA	4	Bellaire	8	0
☐ Edit Copy Delete	Computerization	10	Stafford	4	55
☐ Edit Copy Delete	Reorganization	20	Houston	1	25
☐ Edit Copy Delete	Newbenefits	30	Stafford	4	55
☐ Edit Copy Delete	OperatingSystem	61	Jacksonville	6	350
☐ Edit Copy Delete	DatabaseSystems	62	Birmingham	6	298
☐ Edit Copy Delete	Middleware	63	Jackson	6	136
☐ Edit Copy Delete	InkjetPrinters	91	Phoenix	7	320
☐ Edit Copy Delete	LaserPrinters	92	LasVegas	7	124

↑ ☐ Check All   *With selected:* ✏ Change   ⊖ Delete   🖻 Export