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Enroll- 20UUCS176 Sec-A

Q.1 Write a program of your choice to properly demonstrate the usage and differences of Local & Global variables.

→ `#include <stdio.h>`

```
int global_var = 10;
```

```
void print(int local_var){
```

```
    printf("Global variable = %d\n", global_var);
```

```
    printf("Local Variable = %d\n", local_var);
```

```
}
```

```
void main(){
```

```
    int local_var = 20;
```

```
    print(local_var);
```

```
// we can access the global variable
```

```
// without being passed to the function
```

```
// as argument.
```

```
}
```

Console: → Global variable = 10

Local Variable = 20

Q.2 Demonstrate the usage & implementation of a struct. Accept and an integer and display it

→ #include <stdio.h>

struct student {

int roll;

}

void usage(struct student* s) {

printf("Enter the roll number: ");

scanf("%d", &(s->roll));

printf("Roll Number: %d\n"; s->roll);

}

void main() {

struct student a;

usage(&a);

}

console →

→ Enter the roll number: 13

→ Roll number: 13

Q.3

Apply struct to accept the data of an employee mentioned below and also display them in proper formatted manner!

a. empId

b. empName

c. basic

d. da : 25% of basic

e. Hra : 15% of basic

f. Ta : 10% of basic

g. gross : basic + da + hra + ta.

→ #include < stdio.h >

struct employee

int empId;

char empName[20];

float basic;

float da;

float hra;

float ta;

float gross;

};

→

```
void empCalc (struct employee *e) {
```

$$e \rightarrow da = e \rightarrow basic * 0.25;$$

$$e \rightarrow hra = e \rightarrow basic * 0.15;$$

$$e \rightarrow ta = e \rightarrow basic * 0.10;$$

$$e \rightarrow gross = e \rightarrow basic + e \rightarrow da + e \rightarrow hra + e \rightarrow ta;$$

{

```
void takeInput (struct employee *e) {
```

```
printf ("Taking the Employee details);
```

```
printf ("Enter the empId : ");
```

```
scanf ("%d", &(e->empId));
```

```
printf ("Enter the empName : ");
```

```
scanf ("%s", &(e->empName));
```

```
printf ("Enter the basic : ");
```

```
scanf ("%f", &(e->basic));
```

{

```
void display (struct employee *e) {
```

```
printf ("Employee Id : %d", e->empId);
```

```
printf ("Employee Name : %s", e->empName);
```

```
printf ("Basic : %.2f", e->basic);
```

```
printf ("DA : %.2f", e->da);
```

```
printf ("HRA : %.2f", e->hra);
```

```
printf ("TA : %.2f", e->ta);
```

```
printf ("Gross : %.2f", e->gross);
```

{

Void main() {

struct employee e1;

take_inpt (&e1);

emp_calc (&e1);

display (&e1);

}

Console →

→ Taking the employee details.

→ Enter the empId : 01

→ Enter the empName : banik.

→ Enter the basic : 1313

→

→ Employee Id : 1

→ Employee Name : banik

→ Basic : 1313.00

→ DA : 328.25

→ HRA : 196.95

→ TA : 131.30

→ Gross : 1989.50

Q.7 Implement struct to accept the data of 3 students (without using array of structure/ pointer to structure) and display them in a proper formatted manner.

a. enrollmentNo

b. RegNo

c. StudName

d. StudSem

e. StudCGPA

→ #include <stdio.h>

struct student {

int enrollmentNo;

int RegNo;

char StudName[20];

int StudSem;

float StudCGPA;

struct student *next;

struct studentList {

struct student s1, s2, s3;

} ; ~~student~~



```
void takeInput(struct studentList *s1){  
    printf("Enter the enrollment numbers: ");  
    scanf("%d%d%d", &(s1->s1.enrollmentNo),  
          &(s1->s2.enrollmentNo), &(s1->s3.enrollmentNo));  
    printf("Enter the registration numbers: ");  
    scanf("%d%d%d", &(s1->s1.negNo), &(s1->s2.negNo),  
          &(s1->s3.negNo));  
    printf("Enter the names: ");  
    scanf("%s%s%s", &(s1->s1.studName),  
          &(s1->s2.studName), &(s1->s3.studName));  
    printf("Enter the semesters: ");  
    scanf("%d%d%d", &(s1->s1.studSem), &(s1->s2.studSem),  
          &(s1->s3.studSem));  
    printf("Enter the CGPA's: ");  
    scanf("%f%f%f", &(s1->s1.studCGPA),  
          &(s1->s2.studCGPA) & (s1->s3.studCGPA));  
    s1->s1.next = &(s1->s2);  
    s1->s2.next = &(s1->s3);  
    s1->s3.next = NULL;  
}
```

```
void display_each(struct student *s){  
    printf("\n Enrollment number: %d\n", s->enrollmentNo);  
    printf("\n Registration number: %.d", s->regNo);  
    printf("\n Name: %.s", s->studName);  
    printf("\n Semester: %.d\n", s->studSem);  
    printf("\n CGPA: %.2f", s->studCGPA);  
}
```

```
void display_all(struct student *list){
```

```
    struct student *start = &(list->st1);
```

```
    while (start != NULL) {
```

```
        display_each(start);
```

```
        start = start->next;
```

```
}  
printf("\n");
```

```
void main(){
```

```
    struct student_list sl;
```

```
    take_input(&sl);
```

```
    display_all(&sl);
```

```
}
```



Console →

- Enter. the enrollment numbers : 1 2 3
- Enter. the registration numbers : 2001 2002 2003
- Enter. the names : ram sham jodu
- Enter. the semesters : 1 2 2
- Enter the CGPAs : 7.9 6.7 8.6
-
- Enrollment number : 1
Registration number : 2001
Name : ram
Semester : 1
CGPA : 7.90
- Enrollment number : 2
Registration number : 2002
Name : sham
Semester : 2
CGPA : 6.70
- Enrollment number : 3
Registration number : 2003
Name : jodu
Semester : 2
CGPA : 8.60