**Assignment 13**

#include <stdio.h>

#include <string.h>

// 1. Student

struct student {

    int rollno;

    char name[30];

    float marks;

};

// 2. Employee

struct employee {

    int id;

    char name[30];

    double salary;

};

// 3. Admin

struct admin {

    int id;

    char name[30];

    double salary;

    int allowance;

};

// 4. HR

struct hr {

    int id;

    char name[30];

    double salary;

    double commission;

};

// 5. SalesManager

struct salesManager {

    int id;

    char name[30];

    double salary;

    double incentive;

    int target;

};

// 6. Date

struct date {

    int day;

    int month;

    int year;

};

// 7. Time

struct time {

    int hour;

    int min;

    int sec;

};

// 8. Distance

struct distance {

    int feet;

    int inch;

};

// 9. Complex

struct complex {

    float real;

    float imaginary;

};

// 10. Product

struct product {

    int id;

    char name[30];

    int quantity;

    float price;

};

void main() {

    // 1. Student

    struct student s1;

    s1.rollno = 1;

    strcpy(s1.name, "Manish");

    s1.marks = 85;

    printf("Student:\n%d \n%s \n%f\n", s1.rollno, s1.name, s1.marks);

    printf("\n--------------------------\n");

    // 2. Employee

    struct employee e1;

    e1.id = 101;

    strcpy(e1.name, "Manish");

    e1.salary = 75000;

    printf("Employee:\n%d \n%s \n%lf\n", e1.id, e1.name, e1.salary);

    printf("\n--------------------------\n");

    // 3. Admin

    struct admin a1;

    a1.id = 201;

    strcpy(a1.name, "Prashant");

    a1.salary = 80000;

    a1.allowance = 1000;

    printf("Admin: \n%d  \n%s \n%lf \n%d\n", a1.id, a1.name, a1.salary, a1.allowance);

    printf("\n--------------------------\n");

    // 4. HR

    struct hr h1;

    h1.id = 202;

    strcpy(h1.name, "Sneha");

    h1.salary = 70000;

    h1.commission = 5000;

    printf("HR:\n%d \n%s %lf  \n%lf \n", h1.id, h1.name, h1.salary, h1.commission);

    printf("\n--------------------------\n");

    // 5. SalesManager

    struct salesManager sm1;

    sm1.id = 203;

    strcpy(sm1.name, "Rohit");

    sm1.salary = 65000;

    sm1.incentive = 4500;

    sm1.target = 10;

    printf("SalesManager:\n%d  \n %s \n%lf \n%lf \n %d \n", sm1.id, sm1.name, sm1.salary, sm1.incentive, sm1.target);

    printf("\n--------------------------\n");

    // 5. Date

    struct date d1;

    d1.day = 21;

    d1.month = 4;

    d1.year = 2025;

    printf("Date: \n%d/%d/%d\n ", d1.day, d1.month, d1.year);

    printf("\n--------------------------\n");

    // 7. Time

    struct time t1;

    t1.hour = 10;

    t1.min = 30;

    t1.sec = 45;

    printf("Time:\n%d :%d:%d\n", t1.hour, t1.min, t1.sec);

    printf("\n--------------------------\n");

    // 8. Distance

    struct distance dist1;

    dist1.feet = 5;

    dist1.inch = 11;

    printf("Distance:\n%d feet %d inches\n", dist1.feet, dist1.inch);

    printf("\n--------------------------\n");

    // 9. Complex Number

    struct complex c1;

    c1.real = 3.5;

    c1.imaginary = -2.1;

    printf("Complex Number:\n%f + %fi\n", c1.real, c1.imaginary);

    printf("\n--------------------------\n");

    // 10. Product

    struct product p1;

    p1.id = 301;

    strcpy(p1.name, "Laptop");

    p1.quantity = 10;

    p1.price = 45000.50;

    printf("Product:\n%d \n%s  \n%d \n%f\n", p1.id, p1.name, p1.quantity, p1.price);

}

// In void main()

// Using function (store , display) -> pass by value

//  -> pass by address (array)

//  -> pass one structure variable to function by address

#include <stdio.h>

#include <string.h>

// 1. Student

struct student {

    int rollno;

    char name[30];

    float marks;

};

void storeStudent(struct student \*s) {

    s->rollno = 1;

    strcpy(s->name, "Manish");

    s->marks = 85.0;

}

void displayStudent(struct student s) {

    printf("Student:\n%d \n%s \n%f\n", s.rollno, s.name, s.marks);

}

// 2. Employee

struct employee {

    int id;

    char name[30];

    double salary;

};

void storeEmployee(struct employee \*e) {

    e->id = 101;

    strcpy(e->name, "Manish");

    e->salary = 75000;

}

void displayEmployee(struct employee e) {

    printf("Employee:\n %d \n %s \n %lf\n ", e.id, e.name, e.salary);

}

// 3. Admin

struct admin {

    int id;

    char name[30];

    double salary;

    int allowance;

};

void storeAdmin(struct admin \*a) {

    a->id = 201;

    strcpy(a->name, "Prashant");

    a->salary = 80000;

    a->allowance = 1000;

}

void displayAdmin(struct admin a) {

    printf("Admin:\n%d \n%s \n%lf \n%d\n", a.id, a.name, a.salary, a.allowance);

}

// 4. HR

struct hr {

    int id;

    char name[30];

    double salary;

    double commission;

};

void storeHR(struct hr \*h) {

    h->id = 202;

    strcpy(h->name, "Sneha");

    h->salary = 70000;

    h->commission = 5000;

}

void displayHR(struct hr h) {

    printf("HR:\n%d \n%s \n%lf \n%lf\n", h.id, h.name, h.salary, h.commission);

}

// 5. SalesManager

struct salesManager {

    int id;

    char name[30];

    double salary;

    double incentive;

    int target;

};

void storeSalesManager(struct salesManager \*sm) {

    sm->id = 203;

    strcpy(sm->name, "Rohit");

    sm->salary = 65000;

    sm->incentive = 4500;

    sm->target = 10;

}

void displaySalesManager(struct salesManager sm) {

    printf("SalesManager:\n%d \n%s \n%lf \n%lf \n%d\n", sm.id, sm.name, sm.salary, sm.incentive, sm.target);

}

// 6. Date

struct date {

    int day;

    int month;

    int year;

};

void storeDate(struct date \*d) {

    d->day = 21;

    d->month = 4;

    d->year = 2025;

}

void displayDate(struct date d) {

    printf("Date:\n%d/%d/%d\n", d.day, d.month, d.year);

}

// 7. Time

struct time {

    int hour;

    int min;

    int sec;

};

void storeTime(struct time \*t) {

    t->hour = 10;

    t->min = 30;

    t->sec = 45;

}

void displayTime(struct time t) {

    printf("Time:\n%d:%d:%d\n", t.hour, t.min, t.sec);

}

// 8. Distance

struct distance {

    int feet;

    int inch;

};

void storeDistance(struct distance \*d) {

    d->feet = 5;

    d->inch = 11;

}

void displayDistance(struct distance d) {

    printf("Distance:\n%d feet %d inches\n", d.feet, d.inch);

}

// 9. Complex

struct complex {

    float real;

    float imaginary;

};

void storeComplex(struct complex \*c) {

    c->real = 3.5;

    c->imaginary = -2.1;

}

void displayComplex(struct complex c) {

    printf("Complex Number:\n%f + %fi\n", c.real, c.imaginary);

}

// 10. Product

struct product {

    int id;

    char name[30];

    int quantity;

    float price;

};

void storeProduct(struct product \*p) {

    p->id = 301;

    strcpy(p->name, "Laptop");

    p->quantity = 10;

    p->price = 45000.50;

}

void displayProduct(struct product p) {

    printf("Product:\n%d \n%s \n%d \n%f\n", p.id, p.name, p.quantity, p.price);

}

void main() {

    struct student s;

    struct employee e;

    struct admin a;

    struct hr h;

    struct salesManager sm;

    struct date d;

    struct time t;

    struct distance dist;

    struct complex c;

    struct product p;

    storeStudent(&s);

    displayStudent(s);

    printf("\n--------------------------\n");

    storeEmployee(&e);

    displayEmployee(e);

    printf("\n--------------------------\n");

    storeAdmin(&a);

    displayAdmin(a);

    printf("\n--------------------------\n");

    storeHR(&h);

    displayHR(h);

    printf("\n--------------------------\n");

    storeSalesManager(&sm);

    displaySalesManager(sm);

    printf("\n--------------------------\n");

    storeDate(&d);

    displayDate(d);

    printf("\n--------------------------\n");

    storeTime(&t);

    displayTime(t);

    printf("\n--------------------------\n");

    storeDistance(&dist);

    displayDistance(dist);

    printf("\n--------------------------\n");

    storeComplex(&c);

    displayComplex(c);

    printf("\n--------------------------\n");

    storeProduct(&p);

    displayProduct(p);

    printf("\n--------------------------\n");

}