**Structure**

**Assignment – 21**

1. **Define a structure Employee with member variables id, name, salary**

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

int salary;

};

int main()

{

struct employee b1;

return 0;

}

1. **Write a function to take input employee data from the user. [ Refer structure from question 1]**

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

long int salary;

};

struct employee input()

{

struct employee b1;

printf("ENTER MEMBER ID=");

scanf("%d",&b1.member\_id);

fflush(stdin);

printf("ENTER NAME=");

fgets(b1.name,20,stdin);

b1.name[strlen(b1.name)-1]='\0';

printf("ENTER SALARY=");

scanf("%d",&b1.salary);

}

int main()

{

int i;

struct employee b1[1];

for(i=0;i<1;i++);

b1[i]=input();

}

**3. Write a function to display employee data. [ Refer structure from question 1 ]**

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

long int salary;

}b1;

struct employee input()

{

struct employee b1;

printf("ENTER MEMBER ID=");

scanf("%d",&b1.member\_id);

fflush(stdin);

printf("ENTER NAME=");

fgets(b1.name,20,stdin);

b1.name[strlen(b1.name)-1]='\0';

printf("ENTER SALARY=");

scanf("%d",&b1.salary);

return b1;

};

void display(struct employee b1)

{

printf("\n%d %s %d",b1.member\_id,b1.name,b1.salary);

return b1;

}

int main()

{

struct employee b1[5];

int i;

for(i=0;i<5;i++)

b1[i]=input();

for(i=0;i<5;i++)

display(b1[i]);

return 0;

}

4. Write a function to find the highest salary employee from a given array of 10

employees. [ Refer structure from question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

int salary;

};

struct employee input()

{

struct employee b1;

printf("ENTER MEMBER ID=");

scanf("%d",&b1.member\_id);

fflush(stdin);

printf("ENTER NAME=");

fgets(b1.name,20,stdin);

b1.name[strlen(b1.name)-1]='\0';

printf("ENTER SALARY=");

scanf("%d",&b1.salary);

return b1;

};

void display(struct employee b1)

{

printf("\n%d %s %d",b1.member\_id,b1.name,b1.salary);

}

int highsalary(struct employee b1[],int size)

{

int high=b1[0].salary,pos;

for(int i=1;i<size;i++)

{

if(b1[i].salary>high){

high=b1[i].salary;

pos=i;

}

}

return pos;

}

int main()

{

struct employee b1[10];

int i;

for(i=0;i<10;i++)

b1[i]=input();

printf("\n");

int highpos=highsalary(b1,10);

display(b1[highpos]);

return 0;

}

5. Write a function to sort employees according to their salaries [ refer structure from

question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

long int salary;

}b1;

struct employee input()

{

struct employee b1;

printf("ENTER MEMBER ID=");

scanf("%d",&b1.member\_id);

fflush(stdin);

printf("ENTER NAME=");

fgets(b1.name,20,stdin);

b1.name[strlen(b1.name)-1]='\0';

printf("ENTER SALARY=");

scanf("%d",&b1.salary);

return b1;

};

void display(struct employee b1)

{

printf("\n%d %s %d",b1.member\_id,b1.name,b1.salary);

return b1;

}

void highsalary(struct employee b1[],int size)

{

int i,j;

struct employee temp;

for(i=0;i<size;i++)

{

for(j=i+1;j<size;j++)

{

if(b1[i].salary<b1[j].salary)

{

temp=b1[i];

b1[i]=b1[j];

b1[j]=temp;

}

}

}

}

int main()

{

struct employee b1[10];

int i;

for(i=0;i<10;i++)

b1[i]=input();

printf("\n");

printf("\nSHORTING ACCORDING TO HIGHESH SALARY =");

highsalary(b1,10);

for(i=0;i<10;i++)

display(b1[i]);

return 0;

}

6. Write a function to sort employees according to their names [refer structure from

question 1]

#include<stdio.h>

#include<string.h>

struct employee

{

int member\_id;

char name[20];

long int salary;

}b1;

struct employee input()

{

struct employee b1;

printf("ENTER MEMBER ID=");

scanf("%d",&b1.member\_id);

fflush(stdin);

printf("ENTER NAME=");

fgets(b1.name,20,stdin);

b1.name[strlen(b1.name)-1]='\0';

printf("ENTER SALARY=");

scanf("%d",&b1.salary);

return b1;

};

void display(struct employee b1)

{

printf("\n%d %s %d",b1.member\_id,b1.name,b1.salary);

return b1;

}

void name(struct employee b1[],int size)

{

int i,j;

struct employee temp;

for(i=0;i<size;i++)

{

for(j=i;j<size;j++)

{

if(strcmp(b1[i].name,b1[j].name)>0)

{

temp=b1[i];

b1[i]=b1[j];

b1[j]=temp;

}

}

}

}

int main()

{

struct employee b1[3];

int i;

for(i=0;i<3;i++)

b1[i]=input();

printf("\n");

printf("\nSHORTINg ACCORDING TO EMPLOYEE NAMES =");

name(b1,3);

for(i=0;i<3;i++)

display(b1[i]);

return 0;

}

**8. Write a program to store information of 10 students and display them using structure**

#include <stdio.h>

#include<string.h>

struct student {

char firstName[50];

int roll;

float marks;

} s[10];

int main()

{

int i;

printf("Enter information of students:\n");

for (i = 0; i < 10; ++i) {

s[i].roll = i + 1;

printf("\nFor roll number%d,\n", s[i].roll);

printf("Enter first name: ");

scanf("%s", s[i].firstName);

printf("Enter marks: ");

scanf("%f", &s[i].marks);

}

printf("Displaying Information:\n\n");

for (i = 0; i < 10; ++i) {

printf("\nRoll number: %d\n", i + 1);

printf("First name: ");

puts(s[i].firstName);

printf("Marks: %.1f", s[i].marks);

printf("\n");

}

return 0;

}

**9. Write a program to store information of n students and display them using structure**

#include <stdio.h>

#include<string.h>

struct student {

char firstName[50];

int roll;

float chem;

float maths;

float physics;

} s[100];

int main()

{

int n,sum=0,per=0;

printf ("ENTER n VALUE FOR NOof IMFORMATION=");

scanf("%d",&n);

int i;

printf("Enter information of students:\n");

for (i = 0; i < n; ++i)

{

s[i].roll = i + 1;

printf("\nFor roll number%d,\n", s[i].roll);

printf("Enter first name: ");

scanf("%s", s[i].firstName);

printf("Enter chemistry marks: ");

scanf("%f", &s[i].chem);

printf("Enter maths marks: ");

scanf("%f", &s[i].maths);

printf("Enter chemistry marks: ");

scanf("%f", &s[i].physics);

}

printf("\nDisplaying Information:\n\n");

for (i = 0; i < n; ++i) {

printf("\nRoll number: %d\n", i + 1);

printf("First name: ");

puts(s[i].firstName);

printf("CHEMISTRY Marks: %.1f", s[i].chem);

printf("\nMATHS Marks: %.1f", s[i].maths);

printf("\nPHYSICS Marks: %.1f", s[i].physics);

printf("\nCHEMISTRY Marks: %.1f", s[i].chem);

printf("\n");

}

return 0;

}

**10. Write a program to enter the marks of 5 students in Chemistry, Mathematics and**

**Physics (each out of 100) using a structure named Marks having elements roll no.,**

**name, chem\_marks, maths\_marks and phy\_marks and then display the percentage**

**of each student.**

**#include <stdio.h>**

**#include<string.h>**

**struct student {**

**char firstName[50];**

**int roll;**

**float chem;**

**float maths;**

**float physics;**

**float total;**

**float per;**

**} s[100];**

**int main()**

**{**

**int n;**

**printf ("ENTER n VALUE FOR NOof IMFORMATION=");**

**scanf("%d",&n);**

**int i;**

**printf("Enter information of students:\n");**

**for (i = 0; i < n; ++i)**

**{**

**s[i].roll = i + 1;**

**s[i].total=0;**

**s[i].per=0;**

**printf("\nFor roll number%d,\n", s[i].roll);**

**printf("Enter first name: ");**

**scanf("%s", s[i].firstName);**

**printf("Enter chemistry marks: ");**

**scanf("%f", &s[i].chem);**

**printf("Enter maths marks: ");**

**scanf("%f", &s[i].maths);**

**printf("Enter chemistry marks: ");**

**scanf("%f", &s[i].physics);**

**s[i].total=s[i].chem+s[i].maths+s[i].physics;**

**s[i].per=(s[i].total/300)\*100;**

**}**

**//float 89.0 89**

**printf("\nDisplaying Information:\n\n");**

**for (i = 0; i < n; ++i) {**

**printf("\nRoll number: %d\n", i + 1);**

**printf("First name: ");**

**puts(s[i].firstName);**

**printf("CHEMISTRY Marks: %.1f", s[i].chem);**

**printf("\nMATHS Marks: %.1f", s[i].maths);**

**printf("\nPHYSICS Marks: %.1f", s[i].physics);**

**printf("\nCHEMISTRY Marks: %.1f", s[i].chem);**

**printf("\nTOTAL MARKS/300=%d",s[i].total);**

**printf("\nTOTAL PERCENTAGE=%f",s[i].per);**

**printf("\n");**

**}**

**return 0;**

**}**