Rajalakshmi Engineering College

Name: Keshini L
Email: 241801125@rajalakshmi.edu.in
Roll no:
Phone: 9345502419
Branch: REC
Department: I AI & DS - AE
Batch: 2028
Degree: B.E - AI & DS

Scan to verify results

NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 0_Arrays and Functions

Attempt : 1
Total Mark : 5
Marks Obtained : 5

Section 1 : Coding

1. Problem Statement

Saurabh is the manager of a growing tech company. He needs a program to record and analyze the monthly salaries of his employees. The program will take the number of employees and their respective salaries as input and then calculate the average salary, and find the highest and lowest salary among them.

Help Saurabh automate this task efficiently.

Input Format

The first line of input consists of an integer n, representing the number of employees.

The second line consists of n integers, where each integer represents the salary of an employee.

Output Format

The output prints n lines, where each line will display: "Employee i: "Salary

Where i is the employee number (starting from 1) and salary is the respective salary of that employee.

After that, print the average salary in the following format: "Average Salary: "average_salary

Where average_salary is the average salary of all employees, rounded to two decimal places.

Next, print the highest salary in the following format: "Highest Salary: "max_salary

Where max_salary is the highest salary among all employees.

Finally, print the lowest salary in the following format:"Lowest Salary: "min_salary

Where min_salary is the lowest salary among all employees.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5
4000
3500
6000
2500

4500

Output: Employee 1: 4000
Employee 2: 3500
Employee 3: 6000
Employee 4: 2500
Employee 5: 4500

Average Salary: 4100.00
Highest Salary: 6000
Lowest Salary: 2500

Answer

```
#include<stdio.h>
#include<limits.h>
int main()
{
   int n;
   scanf("%d",&n);
   int salaries[n];
   double sum=0;
   int maxsalary=-1,minsalary=INT_MAX;
   for(int i=0;i<n;i++)
   {
      scanf("%d",&salaries[i]);
      sum+=salaries[i];
      if(salaries[i]>maxsalary)
      {
         maxsalary=salaries[i];
      }
      if(salaries[i]<minsalary)
      {
         minsalary=salaries[i];
      }
   }
   for(int i=0;i<n;i++)
   {
      printf("Employee %d: %d\n",i+1,salaries[i]);
   }
   float avg=sum/n;
   printf("\nAverage Salary:%.2f\n",avg);
   printf("Highest Salary:%d\n",maxsalary);
   printf("Lowest Salary:%d\n",minsalary);
```

[redacted]

```
}
```

Status : Correct ***Marks : 1/1***

Rajalakshmi Engineering College

Name: Keshini L
Email: 241801125@rajalakshmi.edu.in
Roll no:
Phone: 9345502419
Branch: REC
Department: I AI & DS - AE
Batch: 2028
Degree: B.E - AI & DS

Scan to verify results

NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 0_Pointers

Attempt : 1
Total Mark : 5
Marks Obtained : 5

Section 1 : Coding

1. Problem Statement

Rajwinder wants a program to determine retirement details for a person based on their age.

Create a program that uses a structure called Person to hold the age as an attribute with a pointer.

If the age is under 18, display "Invalid".If the age is 65 or older, print "Already retired!".Otherwise, calculate and output the retirement year, remaining years, and remaining days until retirement.

Note: Age 65 is considered as retirement age. Assume the current year as 2023 and there are 365 days per year for calculation.

Input Format

If there are no positive elements in the array, print "No positive elements in the array."

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5
50.0 -2.3 3.7 -4.8 5.2
Output: At least one element is positive.

Answer

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
   int n;
   scanf("%d",&n);
   float *arr=(float*)malloc(n*sizeof(float));
   for(int i=0;i<n;i++)
   scanf("%f ",&arr[i]);
   int ap=1,hp=0;
   for(int i=0;i<n;i++)
   {
      if(arr[i]>0)
      {
         hp=1;
      }
      else
      {
         ap=0;
      }
   }
   if(ap)
      printf("All elements are positive.");
      else if(hp)
      printf("At least one element is positive.");
      else
      printf("No positive elements in the array.");









      free(arr);
      return 0;
}
```

Status : Correct ***Marks : 1/1***

```
        printf("Already Retired!");
        return;
    }
    int ryears=rage-P->age;
    int rdays=ryears*365;
    int reyear=cy+ryears;
    printf("Retirement Year:%d\n",reyear);
    printf("Remaining Years:%d\n",ryears);
    printf("Remaining Days:%d\n",rdays);
}
int main()
{
    Person P;
    scanf("%d",&P.age);
    det(&P);
    return 0;
}
```

Status : Correct **Marks : 1/1**

2. Problem Statement

Daniel is working on a project that involves analyzing data stored in float arrays. He needs to determine whether a given float array contains only positive numbers.

To achieve this, he needs a program that can accurately evaluate the contents of float arrays using malloc().

Input Format

The first line of input consists of an integer N, representing the size of the array.

The second line consists of N space-separated float values, representing the elements of the array.

Output Format

If all the array elements are positive, print "All elements are positive."

If the array contains at least one positive element, print "At least one element is positive."

The input consists of an integer representing the person's age.

Output Format

If the age is under 18, the output displays "Invalid" and terminates.

If the age is 65 or older, the output displays "Already retired!" and terminates.

Otherwise, the output displays the following.

1. The first line displays "Retirement Year: " followed by an integer representing the retirement year.
2. The second line displays "Remaining Years: " followed by an integer representing the remaining years left for retirement.
3. The third line displays "Remaining Days: " followed by an integer representing the remaining days left for retirement.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 43

Output: Retirement Year: 2045
Remaining Years: 22
Remaining Days: 8030

Answer

```
#include<stdio.h>
typedef struct{
   int age;}Person;
void det(Person*P)
{
   int cy=2023;
   int rage=65;
   if(P->age<18)
   {
      printf("Invalid");
      return;
   }
   if(P->age>=rage)
   {
```