PF LAB 07

ROLL NUMBER: 25K-0892 **SECTION: BCS-1K**

Q4

```
#include <stdio.h>


int main()
{
  int scores[10];
  int i, j, temp;

  for (i = 0; i < 10; i++)
  {
    printf("Enter Score of Student %d: ", i + 1);
    scanf("%d", &scores[i]);
  }
  for (i = 0; i < 9; i++)
  {
    for (j = 0; j < 10 ; j++)
    {
      if (scores[j] > scores[j + 1])
      {
        temp = scores[j];
        scores[j] = scores[j + 1];
        scores[j + 1] = temp;
      }
    }
  }

  float median = (scores[10 / 2 - 1] + scores[10 / 2]) / 2.0;
```

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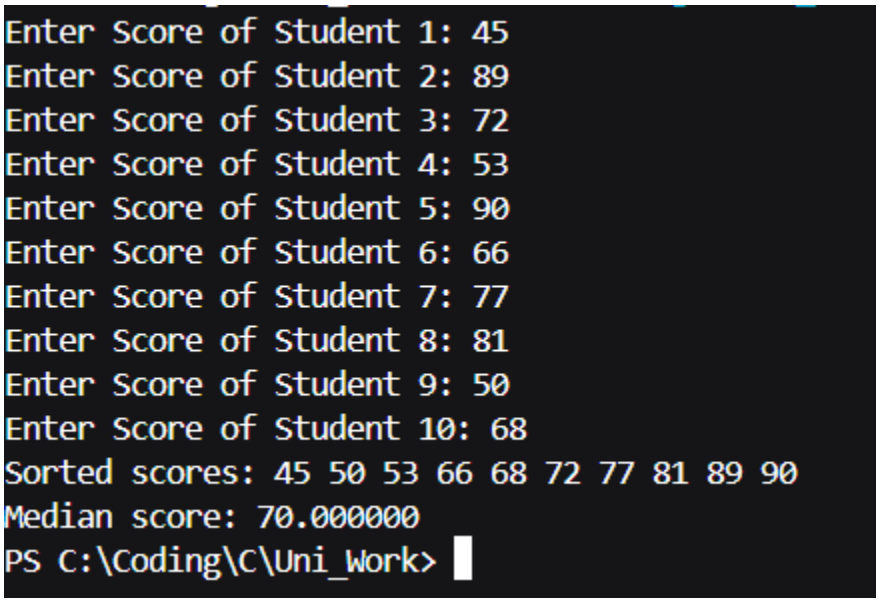
```
  printf("Sorted scores: ");
  for (i = 0; i < 10; i++)
  {
    printf("%d ", scores[i]);
  }

  printf("\nMedian score: %f\n", median);

  return 0;
}
```

OUTPUT:



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Q5

```
#include <stdio.h>

int main() {
   int grades[10];

   int i;
   for (i = 0; i < 10; i++) {
     printf("Enter the Grade of student %d: ", i + 1);
     scanf("%d", &grades[i]);
   }

   printf("\n    Grades    \n");
   for (i = 0; i < 10; i++) {
     printf("Grade of Student %d: %d\n", i + 1, grades[i]);
   }

   int sum = 0;
   float average;
   for (i = 0; i < 10; i++) {
     sum += grades[i];
   }
   average = sum / 10;


   int highestIndex = 0, lowestIndex = 0;
   for (i = 1; i < 10; i++) {
```

```
        if (grades[i] > grades[highestIndex])
            highestIndex = i;
        if (grades[i] < grades[lowestIndex])
            lowestIndex = i;
    }

    printf("\nClass average grade: %.f\n", average);
    printf("Highest grade: %d (Student %d)\n", grades[highestIndex], highestIndex + 1);
    printf("Lowest grade: %d (Student %d)\n", grades[lowestIndex], lowestIndex + 1);

    printf("\nEnter new grade for Student %d: ", lowestIndex + 1);
    scanf("%d", &grades[lowestIndex]);

    printf("\nUpdated list of grades:\n");
    for (i = 0; i < 10; i++) {
        printf("Student %d: %d\n", i + 1, grades[i]);
    }

    return 0;
}
```

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OUTPUT:

```
Enter the Grade of student 1: 34
Enter the Grade of student 2: 46
Enter the Grade of student 3: 57
Enter the Grade of student 4: 63
Enter the Grade of student 5: 74
Enter the Grade of student 6: 82
Enter the Grade of student 7: 96
Enter the Grade of student 8: 75
Enter the Grade of student 9: 64
Enter the Grade of student 10: 71

     Grades
Grade of Student 1: 34
Grade of Student 2: 46
Grade of Student 3: 57
Grade of Student 4: 63
Grade of Student 5: 74
Grade of Student 6: 82
Grade of Student 7: 96
Grade of Student 8: 75
Grade of Student 9: 64
Grade of Student 10: 71

Class average grade: 66
Highest grade: 96 (Student 7)
Lowest grade: 34 (Student 1)

Enter new grade for Student 1: 77

Updated list of grades:
Student 1: 77
Student 2: 46
Student 3: 57
Student 4: 63
Student 5: 74
Student 6: 82
Student 7: 96
Student 8: 75
Student 9: 64
Student 10: 71
PS C:\Coding\C\Uni_Work>
```

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Q6

```
#include <stdio.h>

int main() {
    int numbers[5];
    int add[5], sub[5], mul[5];
    int i;

    for (i = 0; i < 5; i++) {
        printf("Enter Number %d: ", i + 1);
        scanf("%d", &numbers[i]);
    }

    for (i = 0; i < 5; i++) {
        add[i] = numbers[i] + 10;
        sub[i] = numbers[i] - 5;
        mul[i] = numbers[i] * 2;
    }

    printf("\n    Results:   \n");
    for (i = 0; i < 5; i++) {
        printf("Original: %d ,  +10: %d ,  -5: %d ,   x2: %d\n", numbers[i], add[i], sub[i], mul[i]);
    }

    return 0;
}
```

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OUTPUT:

```
Enter Number 1: 4
Enter Number 2: 5
Enter Number 3: 8
Enter Number 4: 9
Enter Number 5: 10

    Results:
Original: 4 ,  +10: 14 ,  -5: -1 ,   x2: 8
Original: 5 ,  +10: 15 ,  -5: 0 ,   x2: 10
Original: 8 ,  +10: 18 ,  -5: 3 ,   x2: 16
Original: 9 ,  +10: 19 ,  -5: 4 ,   x2: 18
Original: 10 ,  +10: 20 ,  -5: 5 ,   x2: 20
PS C:\Coding\C\Uni_Work>
```

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Q7

```
#include <stdio.h>

int main() {
   int products[10];
   int size = 10;

   int i;
   for (i = 0; i < size; i++) {
     printf("Enter Product %d ID(3-digit numbers): ", i + 1);
     scanf("%d", &products[i]);
   }

   int id_remove;
   printf("\nEnter the product ID to remove: ");
   scanf("%d", &id_remove);

   int j;
   for (i = 0; i < size; i++) {
      if (products[i] == id_remove) {
         for (j = i; j < size - 1; j++) {
            products[j] = products[j + 1];
         }
         size--;
         i--;
      }
   }
```

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```
    printf("\nUpdated list :\n");
    for (i = 0; i < size; i++) {
        printf("%d  ", products[i]);
    }

    if (size == 0){
        printf("\nAll products have been removed!");
    }

    return 0;
}
```

OUTPUT:

```
Enter Product 1 ID(3-digit numbers): 787
Enter Product 2 ID(3-digit numbers): 210
Enter Product 3 ID(3-digit numbers): 320
Enter Product 4 ID(3-digit numbers): 450
Enter Product 5 ID(3-digit numbers): 799
Enter Product 6 ID(3-digit numbers): 450
Enter Product 7 ID(3-digit numbers): 630
Enter Product 8 ID(3-digit numbers): 780
Enter Product 9 ID(3-digit numbers): 410
Enter Product 10 ID(3-digit numbers): 960

Enter the product ID to remove: 450

Updated list :
787  210  320  799  630  780  410  960
PS C:\Coding\C\Uni_Work>
```

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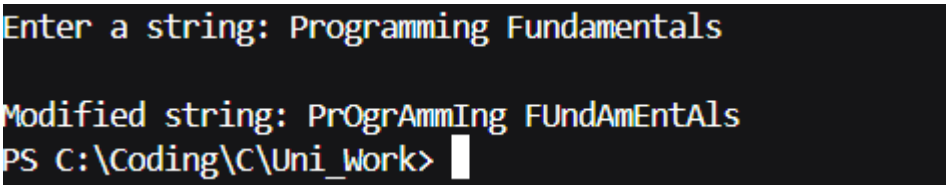
Q8

```
#include <stdio.h>

int main() {
    char str[1000];
    int i;

    printf("Enter a string: ");
    fgets(str, sizeof(str), stdin);

    for (i = 0; str[i] != '\0'; i++) {
        if (str[i] == 'a' || str[i] == 'e' || str[i] == 'i' || str[i] == 'o' || str[i] == 'u') {
            str[i] = str[i] - 32;
        }

    }

    printf("\nModified string: %s", str);

    return 0;
}
```

OUTPUT:



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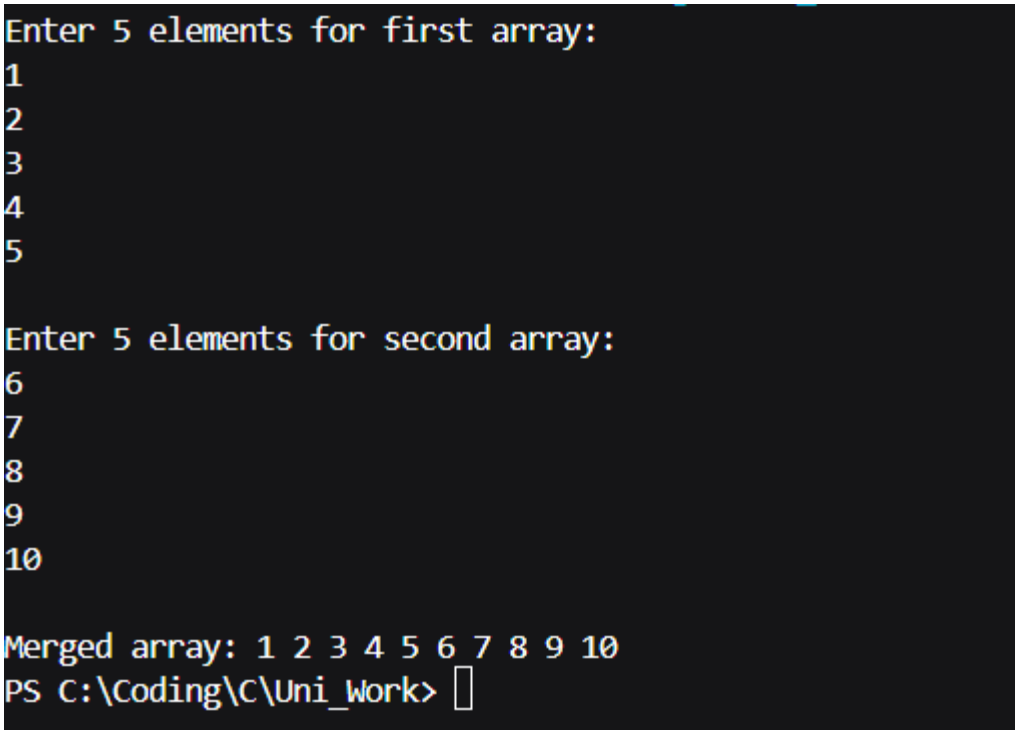
Q9

```
#include <stdio.h>

int main() {
    int arr1[5], arr2[5], merged[10];
    int i, j;

    printf("Enter 5 elements for first array:\n");
    for (i = 0; i < 5; i++) {
        scanf("%d", &arr1[i]);
    }

    printf("\nEnter 5 elements for second array:\n");
    for (i = 0; i < 5; i++) {
        scanf("%d", &arr2[i]);
    }

    for (i = 0; i < 5; i++) {
        merged[i] = arr1[i];
    }

    for (j = 0; j < 5; j++) {
        merged[j + 5] = arr2[j];
    }

    printf("\nMerged array: ");
    for (i = 0; i < 10; i++) {
```

```
        printf("%d ", merged[i]);
    }


    return 0;
}
```

OUTPUT:



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Q10

```
#include <stdio.h>

int main() {
    int n;

    printf("Enter the number of elements you want to input: ");
    scanf("%d", &n);

    int arr[n];
    printf("Enter %d elements:\n", n);
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    printf("\nYou entered: ");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }

    int index, new;
    printf("\n\nEnter the index (0 to %d) you want to modify: ", n - 1);
    scanf("%d", &index);

    if (index >= 0 && index < n) {
        printf("Enter the new value: ");
        scanf("%d", &new);
```

```
        arr[index] = new;
    } else {
        printf("Invalid index!\n");
        return 0;
    }

    printf("\nUpdated array: ");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    return 0;
}
```

OUTPUT:

```
Enter the number of elements you want to input: 4
Enter 4 elements:
35
47
67
82

You entered: 35 47 67 82

Enter the index (0 to 3) you want to modify: 3
Enter the new value: 54

Updated array: 35 47 67 54
PS C:\Coding\C\Uni_Work>
```