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Practice Problem 12

Task 1:

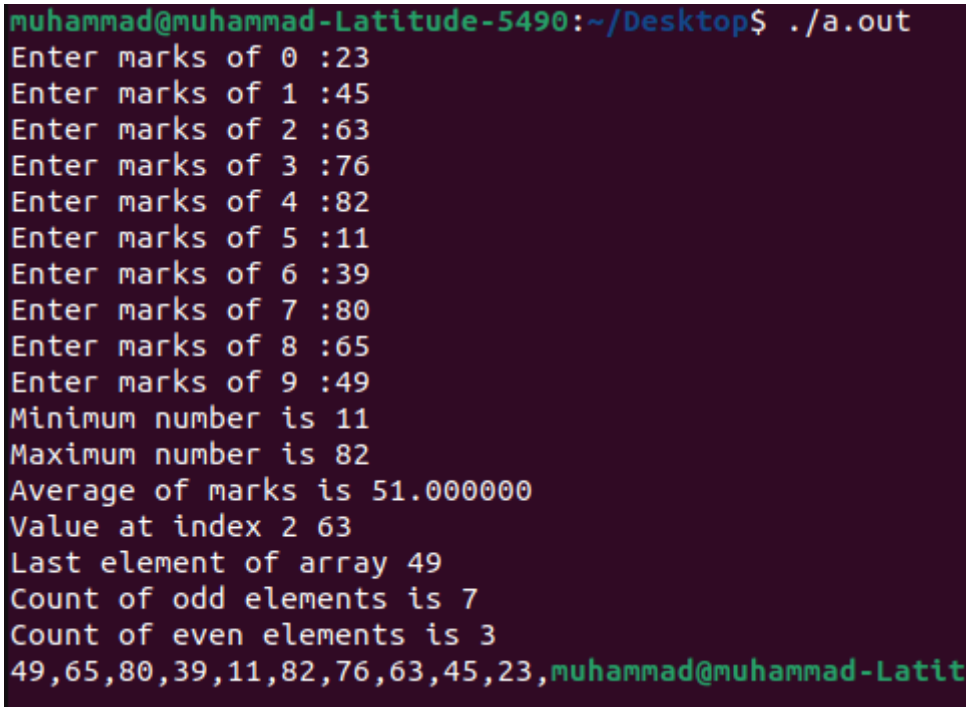
Code:

```
#include<stdio.h>

int minimum_value(int marks[]);
int maximum_value(int marks[]);
int average_value(int marks[]);
int odd_element(int marks[]);
int even_element(int marks[]);
int reverse_order(int marks[]);
int main()
{
	int marks[10];

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

	minimum_value(marks);
	maximum_value(marks);
	average_value(marks);
	printf("Value at index 2 %d\n",marks[2]);
	printf("Last element of array %d\n",marks[9]);
	odd_element(marks);
	even_element(marks);
	reverse_order(marks);
}

int minimum_value(int marks[])
{
	int min=0;

	min = marks[0];

	for (int j=1; j<10; j++)
	{

	if ( marks[j] < min )
	{
		min =marks[j];
```

```
	}

}
	printf("Minimum number is %d\n",min);
}
int maximum_value(int marks[])
{
	int max=0;

	max = marks[0];

	for (int j=1; j<10; j++)
	{

	if ( marks[j] > max )
	{
		max =marks[j];

	}

}
	printf("Maximum number is %d\n",max);
}
int average_value(int marks[])
{
	float average=0, sum=0;

	for (int k=1 ;k<10 ;k++)
	{
		sum +=marks[k];

	}
	average = sum /10.0;
	printf("Average of marks is %f\n",average);
}
int odd_element(int marks[])
{
	int count=0;

	for (int k=0; k<10; k++)
	{
		if (marks[k] %2 !=0)
		{
			count++;
		}
	}
	printf("Count of odd elements is %d\n",count);
}
int even_element(int marks[])
{
	int count=0;
```

```
	for (int k=0; k<10; k++)
	{
		if (marks[k] %2 ==0)
		{
			count++;
		}
	}
	printf("Count of even elements is %d\n",count);


}
int reverse_order(int marks[])
{
	for (int k=9 ;k>=0 ;k--)
	{
		printf("%d,",marks[k]);
	}
}
```

Output:



Task 2:

Code:

```
 #include<stdio.h>

int main()
{
   int number;
   int unique[10] = {1, 2, 3, 4, 4, 5, 6, 7, 8, 4};
   int count = 0;
   int found = 0;

   printf("Enter number: ");
   scanf("%d", &number);

   for (int i = 0; i < 10; i++)
   {
      if (number == unique[i])
      {
         count++;
         found = 1;
      }
   }

   if (found)
   {
      printf("Number found\n");
      printf("Number of times number repeats: %d", count);
   }
   else
   {
      printf("Number not found\n");
   }

   return 0;
}
```

Output:

```
muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter number: 2
Number found
Number of times number repeats: 1muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter number: 4
Number found
Number of times number repeats: 3muhammad@muhammad-Latitude-5490:~/Desktop$
```

Task 3:

Code:

```
#include<stdio.h>

int main() {
    int array_of_numbers[25];
    int num;

    for (int i = 0; i < 25; i++) {
        printf("Enter number between (10-100): ");
        scanf("%d",&num);


        while (num < 10 || num > 100) {
            printf("Invalid input. Enter a number between 10 and 100: ");
            scanf("%d",&num);
        }

         int isDuplicate = 0;
        for (int j = 0; j < i; j++) {
            if (array_of_numbers[j] == num) {
                isDuplicate = 1;
                break;
            }
        }


        if (!isDuplicate) {
            array_of_numbers[i] = num;
        } else {
            printf("Number is a duplicate, enter again.\n");
            i--;
        }
    }

    printf("\nUnique numbers entered:\n");
    for (int i = 0; i < 25; i++) {
        printf("%d ", array_of_numbers[i]);
    }

    return 0;
}
```

Output:

```
muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter number between (10-100): 34
Enter number between (10-100): 19
Enter number between (10-100): 78
Enter number between (10-100): 89
Enter number between (10-100): 90
Enter number between (10-100): 65
Enter number between (10-100): 45
Enter number between (10-100): 34
Number is a duplicate, enter again.
Enter number between (10-100): 83
Enter number between (10-100): 42
Enter number between (10-100): 45
Number is a duplicate, enter again.
Enter number between (10-100): 78
Number is a duplicate, enter again.
Enter number between (10-100): 64
Enter number between (10-100): 36
Enter number between (10-100): 82
Enter number between (10-100): 41
Enter number between (10-100): 23
Enter number between (10-100): 60
Enter number between (10-100): 98
Enter number between (10-100): 73
Enter number between (10-100): 48
Enter number between (10-100): 09
Invalid input. Enter a number between 10 and 100: 23
Number is a duplicate, enter again.
Enter number between (10-100): 76
Enter number between (10-100): 97
Enter number between (10-100): 70
Enter number between (10-100): 51
Enter number between (10-100): 13
Enter number between (10-100): 25
Enter number between (10-100): 35

Unique numbers entered:
muhammad@muhammad-Latitude-5490:~/Desktop$
```