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Practice Problem 6

Task1:

Code:

```
#include<stdio.h>
int arithmetic_sum(int n, int a1, int d);

int main()
{
        int n,sum,a1,d;

   a1 =2;
        d= 2;
        n= 10;

   arithmetic_sum(n,a1,d);

        printf("value of sum =%d",arithmetic_sum(n,a1,d));

        return 0;
}
int arithmetic_sum(int n, int a1, int d)
{
        int sum;
        sum = n/2 *(2*a1  +(n-1)*d);
        return sum;
}
```

Output:

```
muhammad@muhammad-Latitude-5490:~/Desktop$ gcc task1.c
muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
value of sum =110muhammad@muhammad-Latitude-5490:~/Desktop$
```

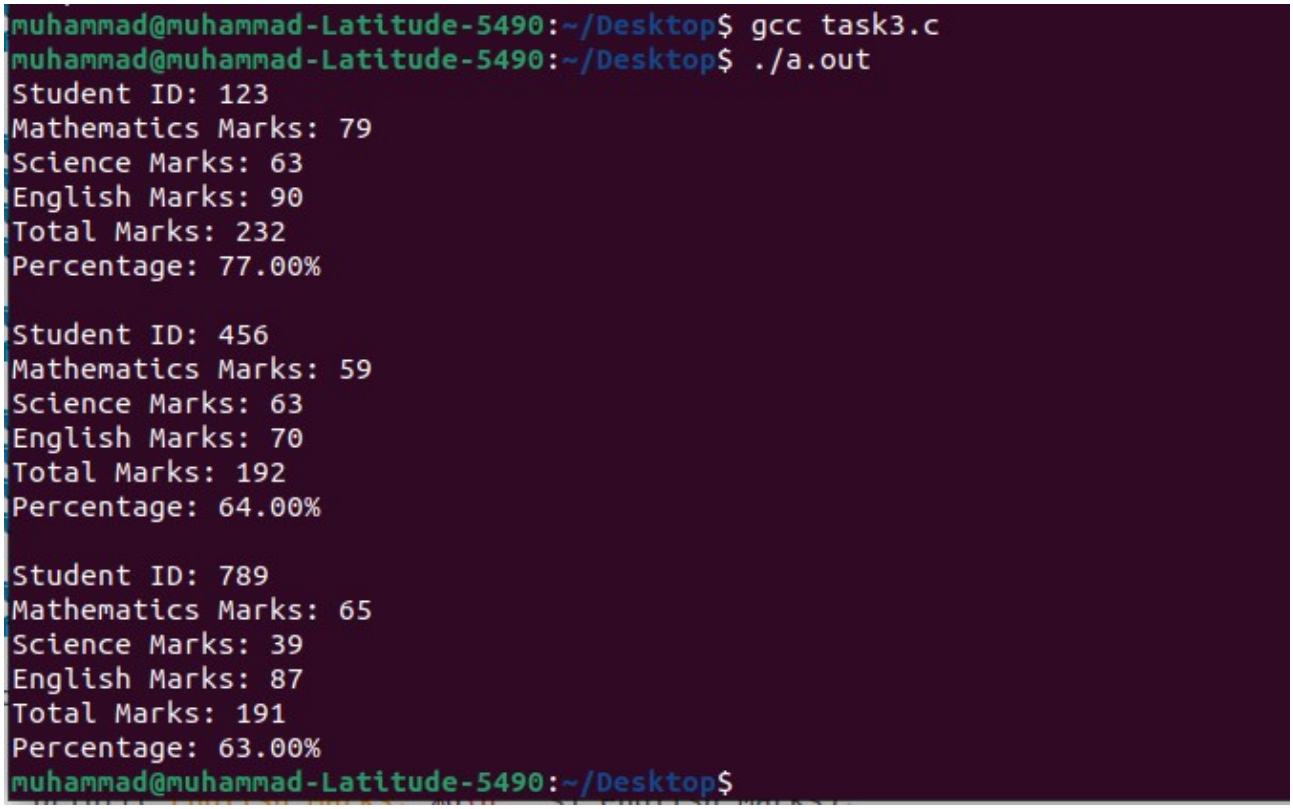
Task2:

Code:

```
#include<stdio.h>

int sumoftotalmarks(int math_marks, int science_marks, int english_marks);
float percentage(int total_marks);

int main()
{


  int s1_ID=123;
  int s1_math_marks= 79;
  int s1_science_marks= 63;
  int s1_english_marks =90;

  int s1_total_marks =sumoftotalmarks(s1_math_marks, s1_science_marks, s1_english_marks);
  float s1_percentage=percentage(s1_total_marks);


  int s2_ID=456;
  int s2_math_marks= 59;
  int s2_science_marks= 63;
  int s2_english_marks =70;

  int s2_total_marks =sumoftotalmarks(s2_math_marks, s2_science_marks, s2_english_marks);
  float s2_percentage=percentage(s2_total_marks);

  int s3_ID=789;
  int s3_math_marks= 65;
  int s3_science_marks= 39;
  int s3_english_marks =87;

  int s3_total_marks =sumoftotalmarks(s3_math_marks, s3_science_marks, s3_english_marks);
  float s3_percentage=percentage(s3_total_marks);

  printf("Student ID: %d\n", s1_ID);
    printf("Mathematics Marks: %d\n", s1_math_marks);
    printf("Science Marks: %d\n", s1_science_marks);
    printf("English Marks: %d\n", s1_english_marks);
    printf("Total Marks: %d\n", s1_total_marks);
    printf("Percentage: %.2f%%\n\n", s1_percentage);

    printf("Student ID: %d\n", s2_ID);
    printf("Mathematics Marks: %d\n", s2_math_marks);
    printf("Science Marks: %d\n", s2_science_marks);
    printf("English Marks: %d\n", s2_english_marks);
    printf("Total Marks: %d\n", s2_total_marks);
    printf("Percentage: %.2f%%\n\n", s2_percentage);
```

```
    printf("Student ID: %d\n", s3_ID);
    printf("Mathematics Marks: %d\n", s3_math_marks);
    printf("Science Marks: %d\n", s3_science_marks);
    printf("English Marks: %d\n", s3_english_marks);
    printf("Total Marks: %d\n", s3_total_marks);
    printf("Percentage: %.2f%%\n", s3_percentage);

    return 0;
}
  int sumoftotalmarks(int math_marks, int science_marks, int english_marks)
  {
  return math_marks + science_marks + english_marks;
}
float percentage(int total_marks)
{
        return  (total_marks *100)/ 300;
}
```

Output:



Task3:

Code:

```
#include <stdio.h>
#include <math.h>

float calculate_simple_interest(int customer_saving_account_balance);
float calculate_compound_interest(int customer_saving_account_balance);
float calculate_compound_interest_for_specific_year(int
customer_saving_account_balance, float interest_rate, int specific_year);

int main() {
   int customer_saving_account_balance, specific_year;
   float interest_rate;

   printf("Enter value of customer account balance: ");
   scanf("%d", &customer_saving_account_balance);

   float simpleInterest =
calculate_simple_interest(customer_saving_account_balance);
   printf("Value of simple interest is = %.2f\n", simpleInterest);

   float compoundInterest =
calculate_compound_interest(customer_saving_account_balance);
   printf("Value of compound interest for one year is = %.2f\n", compoundInterest);

   printf("Enter value of no of years: ");
   scanf("%d", &specific_year);

   printf("Enter value of interest rate: ");
   scanf("%f", &interest_rate);

   float compoundInterestSpecific =
calculate_compound_interest_for_specific_year(customer_saving_account_balance,
interest_rate, specific_year);
   printf("Value of compound interest for %d years is = %.2f\n", specific_year,
compoundInterestSpecific);

   return 0;
}

float calculate_simple_interest(int customer_saving_account_balance) {
   return (customer_saving_account_balance * 0.05 * 1) ;
}
```

```
float calculate_compound_interest(int customer_saving_account_balance) {
    return (customer_saving_account_balance * pow((1 + 0.12 / 1),1* 1)) ;
}

float calculate_compound_interest_for_specific_year(int
customer_saving_account_balance, float interest_rate, int specific_year) {
    return customer_saving_account_balance * (pow((1 + interest_rate /
100),specific_year));
}
```

Output: