CTSD PRACTICAL 2023

PRACTICAL : 3

1. The total distance travelled by vehicle in 't' seconds is given by **distance = ut+1/2at^2** where 'u' and 'a' are the initial velocity (m/sec.) and acceleration (m/sec^2). Write C program to find the distance travelled at regular intervals of time given the values of 'u' and 'a'. The program should provide the flexibility to the user to select his own time intervals and repeat the calculations for different values of 'u' and 'a'.

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
  int i, n, sec;
  float d, u, a;
  clrscr();
  printf("Enter the no. of intervals\n");
  scanf("%d", &n);
  for(i = 1; i <= n; i++)
  {
    printf("interval: %d \n", i);
    printf("Enter the time in seconds \n");
    scanf("%d",&sec);
    printf("Enter the velocity \n");
    scanf("%f", &u);
    printf("Enter the acceleration \n");
    scanf("%f", &a);
    d= d + (u * sec + (a * (pow(sec, 2))) / 2);
  }
  printf("Total distance travelled is  %.2f", d);
  getch();
}
```

OUTPUT:

```
Enter the number of intervals: 2
Interval: 1
Enter the time in seconds
30
Enter the velocity
35
Enter the acceleration
20
```

```
Interval: 2
Enter the time in seconds
40
Enter the velocity
45
Enter the acceleration
30
Total distance travelled is 35850.00
```

2. Write a C program, which takes two integer operands and one operator from the user, performs the operation and then prints the result. (Consider the operators +,-,",/,% and use Switch Statement)

```
#include <stdio.h>

int main() {
char operation;
double n1, n2;
printf("Enter an operator (+, -, *, /): ");
scanf("%c", &operation);
printf("Enter two operands: ");
scanf("%lf %lf",&n1, &n2);

switch(operation)
{
case '+':
printf("%.1lf + %.1lf = %.1lf",n1, n2, n1+n2);
break;

case '-':
printf("%.1lf - %.1lf = %.1lf",n1, n2, n1-n2);
break;

case '*':
printf("%.1lf * %.1lf = %.1lf",n1, n2, n1*n2);
break;

case '/':
printf("%.1lf / %.1lf = %.1lf",n1, n2, n1/n2);
break;

default:
printf("Error! operator is not correct");
}
```

```
return 0;
}
```

OUTPUT:

```
Enter an operator (+ - * / %)
Enter two operands: 32.5, 12.4
32.5-12.4= 20.1
```