Areejah

25K-2003 **LAB ASSIGNMENT**

1. Write a program to create an Electricity Bill Calculator which will ask the user for Customer Name, Units Consumed (value should be of integer), Price per Unit (value should be of float) and calculate the Total Bill and display it in a formatted bill slip.

Code:

```
#include <stdio.h>
int main()
{
   char name[10];
   int units;
   float per_unit, total;

   printf("Enter your name  ");
   scanf("%s",&name);

   printf("enter units consumed  ");
   scanf("%d", &units);

   printf("enter price per unit  ");
   scanf("%f", &per_unit);

   total=units*per_unit;

   printf("\n--------------------------------\n");
```

```
    printf("       ELECTRICITY BILL  \n");
    printf("--------------------------------\n");
    printf("Customer       : %s \n", name);
    printf("units consumed  : %d \n",units);
    printf("price per unit  : %.2f \n",per_unit);
    printf("-------------------------------- \n");
    printf("total bill: %.2f PKR \n",total);
    printf("-------------------------------- \n");

}
```

OUTPUT:

```
Enter your name  Areejah
enter units consumed  350
enter price per unit  12.5

--------------------------------
        ELECTRICITY BILL
--------------------------------
Customer         : Areejah
units consumed   : 350
price per unit   : 12.50
--------------------------------
total bill: 4375.00 PKR
--------------------------------
```

2. Write a program to create a Shopping Receipt Generator which takes as input eggs, bread and

butter prices as float with 2 decimal places and then generate a receipt showing each item's

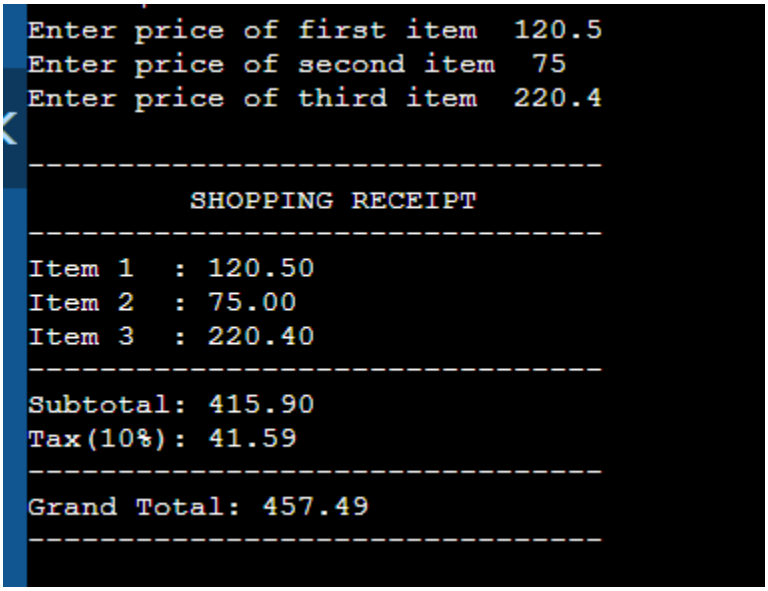
price, subtotal, 17% sales tax and final total.

CODE:

```
#include <stdio.h>
int main()
{
   float a,b,c,total,tax,total2;

   printf("Enter price of first item  ");
   scanf("%f",&a);

   printf("Enter price of second item  ");
   scanf("%f", &b);

   printf("Enter price of third item  ");
   scanf("%f", &c);

   total=a+b+c;
   tax=total/10;
   total2=tax+total;

   printf("\n--------------------------------\n");
   printf("        SHOPPING RECEIPT  \n");
   printf("--------------------------------\n");
```

```
printf("Item 1  : %.2f \n",a);
printf("Item 2  : %.2f \n",b);
printf("Item 3  : %.2f \n",c);
printf("------------------------------ \n");
printf("Subtotal: %.2f \n",total);
printf("Tax(10%): %.2f \n",tax);
printf("------------------------------ \n");
printf("Grand Total: %.2f \n",total2);
printf("------------------------------ \n")}
```

OUTPUT:



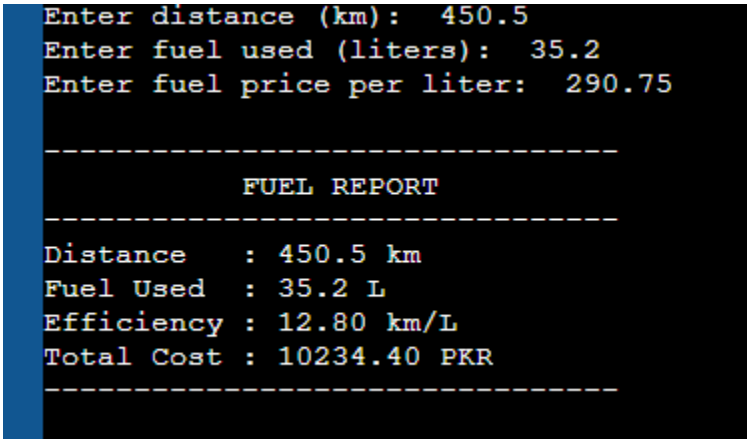
3. Write a program to create a Fuel Consumption Tracker that calculates car's efficiency and takes input distance travelled (km, float), fuel used (litres, float), fuel price per litre, fuel price per litre(float) and gives output distance travelled, fuel consumption (km per litre with 2 decimal places) and total fuel cost.

CODE:

```
#include <stdio.h>
int main()
{
   float distance,used,price,efficiency,total;

   printf("Enter distance (km):  ");
   scanf("%f",&distance);

   printf("Enter fuel used (liters):  ");
   scanf("%f", &used);

   printf("Enter fuel price per liter:  ");
   scanf("%f", &price);



   efficiency=distance/used;
   total=used*price;

   printf("\n-------------------------------\n");
   printf("          FUEL REPORT   \n");
```

```
    printf("-------------------------------\n");
    printf("Distance   : %.1f km\n",distance);
    printf("Fuel Used  : %.1f L\n",used);
    printf("Efficiency : %.2f km/L\n",efficiency);
    printf("Total Cost : %.2f PKR\n",total);
    printf("-------------------------------\n");
}
```

OUTPUT



4. Create a Student CGPA Calculator that takes marks of your 1stsemester's subjects (float), each

subject is out of 100. Calculate percentage and convert percentage into CGPA (out of 4.0 scale)

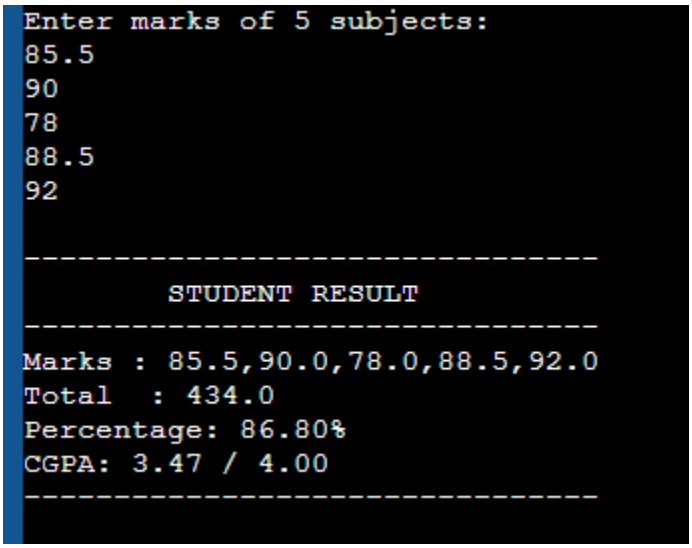
using the formula CGPA = (Percentage/100) * 4 and display with proper formatting.

CODE:

```
#include <stdio.h>
int main()
{
   float s1,s2,s3,s4,s5,total,percent,cgpa;

   printf("Enter marks of 5 subjects:  \n");
   scanf("%f %f %f %f %f",&s1,&s2,&s3,&s4,&s5);

   total=s1+s2+s3+s4+s5;
   percent=(total/500)*100;
   cgpa=(percent/100)*4;

   printf("\n--------------------------------\n");
   printf("       STUDENT RESULT   \n");
   printf("--------------------------------\n");
   printf("Marks : %.1f,%.1f,%.1f,%.1f,%.1f \n",s1,s2,s3,s4,s5);;
   printf("Total  : %.1f \n",total);
   printf("Percentage: %.2f%% \n", percent);
   printf("CGPA: %.2f / 4.00\n", cgpa);
```

```
    printf("--------------------------------\n");
}
```

OUTPUT:



5. Write a program to create a Loan EMI Calculator that calculates the monthly EMI for a loan and takes input the Loan Amount (float), Annual Interest Rate (float in %), Loan Duration (years, integer) and formula for calculating EMI is EMI = [P × r × (1 + r)^n] / [(1 + r)^n – 1], where P = Principal Loan Amount, r = Monthly Interest Rate = Annual Rate/(12*100), n = Total Months = Years * 12.

CODE:

```
#include <stdio.h>
#include <math.h>
int main()
{
   float principal,annual,monthly,emi;
   int years,months;

   printf("Enter loan amount:  \n");
   scanf("%f",&principal);

   printf("Enter annual interest rate(%%): ");
   scanf("%f",&annual);

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

   monthly=annual/(12*100);
```

```
    months=years*12;
    emi=(principal*monthly* pow(1+monthly,months))/(pow(1+monthly,months)-1);


    printf("\n-------------------------------\n");
    printf("       LOAN CALCULATION   \n");
    printf("-------------------------------\n");
    printf("Loan Amount: %.2f\n",principal);
    printf("Duration: %d years (%d months)\n",years,months);
    printf("Interest Rate: %.2f%% per year\n",annual);
    printf("Monthly EMI: %.2f\n",emi);
    printf("-------------------------------\n");
}
```

OUTPUT: