SOURCE CODE

Header File : Calculator\_Implementation.h

#ifndef CALCULATOR\_IMPLEMENTATION\_H\_INCLUDED

#define CALCULATOR\_IMPLEMENTATION\_H\_INCLUDED

// Discount Calculator function is created to calculate final bill amount.

float Discount\_Calculator(char customer\_type[50], char product\_number[50], int quantity, float product\_cost)

{

float discount, cost\_total, final\_amount;

cost\_total = product\_cost \* quantity;

if (strcmp(customer\_type, "S") == 0)

{

discount = 10;

cost\_total = cost\_total - (cost\_total \*discount / 100);

}

final\_amount = cost\_total;

if (final\_amount > 1000)

{

discount = 5;

final\_amount = final\_amount - (final\_amount \*discount / 100);

}

return final\_amount;

}

#endif // CALCULATOR\_IMPLEMENTATION\_H\_INCLUDED

Main Menu Source Code: main.c

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Billing Application for Gopalan Mall

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//header file

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

// created implementation file for calculator

#include "Calculator\_Implementation.h"

//main file

int main()

{

//variable declaration

char option[50], customer\_type[50], product\_no[50], str[20], str2[20];

int quantity;

float product\_cost;

// loop to not close the program until break statement is used

do {

system("cls");

fflush(stdin);

printf("\n\n\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\t\t\n");

printf("\t\t\t\t..........GOPALAN MALL..........");

printf("\n\n\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\t\t\n");

// Value to be entered by the user

// customer type

printf("\n\n\t\tEnter Customer type => ");

printf("\n\n\t\tR = Regular, S = Special......: (Case Sensitive) =>=>");

customer\_type:

fflush(stdin);

scanf("%s", & customer\_type);

if (strcmp(customer\_type, "R") == 0 || strcmp(customer\_type, "S") == 0)

{

// product number

printf("\n\n\t\tENTER PRODUCT NUMBER..........=> =>");

fflush(stdin);

scanf("%s", & product\_no);

// product cost

printf("\n\n\t\tENTER PRODUCT COST PER UNIT...=> => ");

product\_cost:

fflush(stdin);

//scanf("%f", &product\_cost);

fflush(stdin);

float f;

int i = 0;

fflush(stdin);

scanf("%s", str);

fflush(stdin);

while (i < strlen(str)) {

if (str[i] < 46 || str[i] > 57 || str[i] == 47) {

printf("\n\n\t\t Entered value contains alphabets or symbols.");

printf("\n\n\t\t Please Enter Product cost: ");

goto product\_cost;

}

i++;

}

product\_cost = atof(str);

if (product\_cost > 10.00 && sizeof(product\_cost) == 4) {

// Quantity purchased

printf("\n\n\t\tENTER QUANTITY PURCHASED......=> => ");

quantity\_purchased:

fflush(stdin);

i = 0;

fflush(stdin);

scanf("%s", str2);

fflush(stdin);

while (i < strlen(str2)) {

if (str2[i] < 48 || str2[i] > 57) {

printf("\n\n\t\t Entered value contains alphabets or symbols.");

printf("\n\n\t\t Please Enter Quantity: ");

goto quantity\_purchased;

}

i++;

}

quantity = atoi(str2);

fflush(stdin);

if (quantity >= 1 && quantity <= 100 && sizeof(quantity) == 4) {

// Calculating the final bill amount

// Discount\_Calculator function is called from the header file

float final\_amount = Discount\_Calculator(customer\_type, product\_no, quantity, product\_cost);

printf("\n\n\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\t\t\n");

printf("\t\t\t\t..........Total Final Bill Amount: %.2f..........", final\_amount);

printf("\n\n\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\t\t\n");

// To exit the menu

printf("\n\n\t\tPress 'N' / 'n' to exit or any other key to return to main menu => =>");

scanf("%s", & option);

if (strcmp(option, "N") == 0 || strcmp(option, "n") == 0) {

exit(0);

}

}

// If the quantity is not between 1 to 100

else {

printf("\n\n\t\t Please enter integer quantity between 1 and 100.");

printf("\n\n\t\t Please re-enter quantity => => ");

goto quantity\_purchased;

}

}

// If the product cost is not greater than 10

else {

printf("\n\n\t\t\t You have entered wrong input.\n\n\t\t\t\ Please enter integer Product cost greater than 10");

printf("\n\n\t\t Please re-enter Product Cost => ");

goto product\_cost;

}

}

// If user entered wrong customer type

else {

printf("\n\n\t\t Entered Customer Type is invalid.");

printf("\n\n\t\t Please Re-enter Customer Type. => =>");

goto customer\_type;

}

} while (1);

return 0;

}