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### Practice Problem: 8

Task1:

Code:

```
#include<stdio.h>
int main()
{
    char value;

    printf("Enter Alphabet:");
    scanf("%c",&value);

    if (value == 'a' || value == 'A' || value == 'e' || value == 'E' || value == 'i' || value == 'I' || value == 'O' ||
    value == 'O' || value == 'u' || value == 'U')
    {
        printf("Alphabet is Vowel");
    }

    else
    {
        printf("ALphabet is consonant");
    }
}
```

Output:

A screenshot of a terminal window with a dark background. The prompt is 'muhammad@muhammad-Latitude-5490:~/Desktop\$'. The user enters './a.out'. The program prompts 'Enter Alphabet:A' and outputs 'Alphabet is Vowel'. The user enters 'U' and outputs 'Alphabet is Vowel'. The user enters 'e' and outputs 'Alphabet is Vowel'. The user enters 'k' and outputs 'ALphabet is consonant'.

```
muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Alphabet:A
Alphabet is Vowelmuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Alphabet:U
Alphabet is Vowelmuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Alphabet:e
Alphabet is Vowelmuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Alphabet:k
ALphabet is consonantmuhammad@muhammad-Latitude-5490:~/Desktop$
```

Task2:

Code:

```
#include<stdio.h>

int main()
{
    int age;
```

```

printf("Enter Age");
scanf("%d",&age);

if (age <=12)
{
    printf("Child");
}

else if (age >=13 && age<=19)
{
    printf("Teenage");
}
else if (age >=20 && age <=64)
{
    printf("Adult");
}
else
{
    printf("senior");
}
}

```

Output:

```

muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Age 4
Childmuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Age 15
Teenagemuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Age35
Adulamuhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter Age 67
seniormuhammad@muhammad-Latitude-5490:~/Desktop$ █

```

Task3:

Code:

```

#include<stdio.h>

int main()
{
    int a,b;

    printf("Enter value of a");
    scanf("%d",&a);
    printf("Enter value of b");
    scanf("%d",&b);
}

```

```

char ch;

printf("Enter Special Character:");
scanf(" %c",&ch);

if (ch == '+')
{
int addition = a+b;
printf("Addition =%d",addition);
}

else if (ch == '-')
{
int subtraction;
subtraction =a-b;
printf("Subtraction =%d",subtraction);
}

else if (ch == '*')
{
int multiplication = a*b;
printf("Multiplication =%d", multiplication);
}

else if (ch == '/')
{
int division= a/b;
printf("Division =%d",division);
}

else
{
printf("Invalid Input");
}
}

```

Output:

```

muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter value of a 15
Enter value of b 5
Enter Special Character: +
Addition =20muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter value of a 16
Enter value of b 4
Enter Special Character:-
Subtraction =12muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter value of a 16
Enter value of b 4
Enter Special Character:*
Multiplication =64muhammad@muhammad-Latitude-5490:~/Desktop$ ./a.out
Enter value of a 16
Enter value of b 4
Enter Special Character:/
Division =4muhammad@muhammad-Latitude-5490:~/Desktop$ █

```

Task4:

Code:

```
#include<stdio.h>

float calculateBill(int quantity,float price)
{
return quantity*price;
}
int checkAvailability(int quantity,int available)
{
return quantity <= available;
}
int updateStock(int quantity,int available)
{
return available-quantity;
}
int main()
{

int coke_available=10,pepsi_available=15,sprite_available=15,sevenUp_available=25;

float coke_price=5,pepsi_price=7,sprite_price=7,sevenUp_price=3,totalBill;

printf("Welcome to the Vending Machine!\n");
    printf("Available Drinks:\n");
    printf("\n1. Coke (Price: $%.2f, Available: %d)\n", coke_price, coke_available);
    printf("2. Pepsi (Price: $%.2f, Available: %d)\n", pepsi_price, pepsi_available);
    printf("3. Sprite (Price: $%.2f, Available: %d)\n", sprite_price, sprite_available);
    printf("4. 7UP (Price: $%.2f, Available: %d)\n", sevenUp_price, sevenUp_available);

int choice_of_drink,quantity;

printf("Enter the drink number you want to purchase(1-4):");
scanf("%d",&choice_of_drink);

if(choice_of_drink < 1 || choice_of_drink > 4)
{
printf("Invalid Input,Exiting.....\n");
return 0;
}

printf("Enter the quantity you want to buy:");
scanf("%d",&quantity);

if(choice_of_drink == 1)
{
if(checkAvailability(quantity, coke_available)){

totalBill = calculateBill(quantity, coke_price);
    coke_available = updateStock(quantity,coke_available);
```

```

    printf("\nYou have ordered %d Coke(s) for a total price of $%.2f.\n", quantity, totalBill);
}
else
{
    printf("\nYou have ordered the maximum availability of 'COKE'.\n");
}
}
else if (choice_of_drink == 2)
{

if (checkAvailability(quantity, pepsi_available))
{

    totalBill = calculateBill(quantity, pepsi_price);
    pepsi_available = updateStock(quantity,pepsi_available);

    printf("\nYou have ordered %d Pepsi(s) for a total price of $%.2f.\n", quantity, totalBill);
}
else
{
    printf("You have ordered the maximum availability of 'PEPSI'\n");
}
}
    else if (choice_of_drink == 3)
    {

        if (checkAvailability(quantity, sprite_available))
        {

            totalBill = calculateBill(quantity, sprite_price);
            sprite_available = updateStock( quantity,sprite_available);

            printf("\nYou have ordered %d Sprite(s) for a total price of $%.2f.\n", quantity, totalBill);

        }
        else
        {
            printf("\nYou have ordered the maximum availability of 'SPRITE'\n");
        }

    }
    else if (choice_of_drink == 4)
    {

        if (checkAvailability(quantity, sevenUp_available))
        {

            totalBill = calculateBill(quantity, sevenUp_price);
            sevenUp_available = updateStock(quantity,sevenUp_available);

            printf("\nYou have ordered %d 7UP(s) for a total price of $%.2f.\n", quantity, totalBill);

```

```

}
    else
    {

        printf("You have ordered the maximum availability of 'SPRITE'\n");
    }

}
else
{

    printf("Invalid drink choice.\n");

    return 0;
}
printf("\nThank You For Your Purchase\n");
printf("Available Drinks:\n");
printf("1. Coke (Price: $%.1f, Available: %d)\n", coke_price, coke_available);
printf("2. Pepsi (Price: $%.1f, Available: %d)\n", pepsi_price, pepsi_available);
printf("3. Sprite (Price: $%.1f, Available: %d)\n", sprite_price, sprite_available);
printf("4. 7UP (Price: $%.1f, Available: %d)\n", sevenUp_price, sevenUp_available);
printf("Total Bill: $%.1f\n", totalBill);

return 0;
}

```

Output:

```

Welcome to the Vending Machine!
Available Drinks:

1. Coke (Price: $5.00, Available: 10)
2. Pepsi (Price: $7.00, Available: 15)
3. Sprite (Price: $7.00, Available: 15)
4. 7UP (Price: $3.00, Available: 25)
Enter the drink number you want to purchase(1-4):3
Enter the quantity you want to buy:12

You have ordered 12 Sprite(s) for a total price of $84.00.

Thank You For Your Purchase
Available Drinks:
1. Coke (Price: $5.0, Available: 10)
2. Pepsi (Price: $7.0, Available: 15)
3. Sprite (Price: $7.0, Available: 3)
4. 7UP (Price: $3.0, Available: 25)
Total Bill: $84.0

```