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Class : CE(2) C - Batch

Service- request / Field Technicians Request System

1. Ideate

The core idea is to make an efficient dispatch system to assign technicians according to domestic/commercial requirements .

2. Research

This project is created using the C language . The purpose of this project is to create an efficient personnel dispatching system . Personnel are dispatched on the basis of the requirements of the user (domestic/commercial) . Information on this topic is gathered from various links like :

- 1.<https://www.yelowsoft.com/blog/manual-vs-automated-dispatch-solving-scheduling-challenges/>
- 2.<https://www.dispatchtrack.com/blog/automated-dispatching-system>

3.<https://www.indeed.com/career-advice/finding-a-job/types-of-field-service-technicians>

3. Analyse

1. To create an interface for taking appointment of various personnel for domestic/commercial purpose also in bulk
2. Use concepts of C such as loops , conditional statements,etc
3. Improve it continuously through users feedback

4.Build

This is the phase in which the code was created

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

```
int main() {
```

```
    char name[50], address[100], contact[20];
```

```
    int user_type, tech_type, num_tech, n;
```

```
    float cost = 0, budget = 0, total_cost = 0;
```

```
    printf("WELCOME TO TECHNICIANS DISPATCH SYSTEM\n");
```

```
    printf("Enter Your Name: ");
```

```
    scanf("%s", name);
```

```

printf("Enter Your Address: ");
scanf("%s", address);

printf("Enter Your Contact Info: ");
scanf("%s", contact);

printf("Are you DOMESTIC (1) or COMMERCIAL (0)? ");
scanf("%d", &user_type);

printf("\nAvailable Technicians:\n");
printf("1. Electrician\n2. Plumber\n3. Medical Help\n4.
Emergency Services\n");

// Domestic user logic (simplified)
if (user_type == 1) {
start_domestic:
    printf("\nSelect Technician:\nChoice: ");
    scanf("%d", &tech_type);

    if (tech_type == 1) cost = 100;
    else if (tech_type == 2) cost = 80;
    else if (tech_type == 3) cost = 120;
    else if (tech_type == 4) cost = 150;
    else {
        printf("Invalid Technician choice.\n");
        goto start_domestic;
    }

    total_cost = cost - (cost * 0.20); // 20% discount for domestic
user
    num_tech = 1;

```

```

        printf("\n--- SUMMARY ---\n");
        printf("Name: %s\nAddress: %s\nContact: %s\n", name,
address, contact);
        printf("User Type: Domestic\n");
        printf("Selected Technician: ");
        if (tech_type == 1) printf("Electrician\n");
        else if (tech_type == 2) printf("Plumber\n");
        else if (tech_type == 3) printf("Medical Help\n");
        else printf("Emergency Services\n");

        printf("Total Technicians: %d\n", num_tech);
        printf("Total Cost: ₹%.2f\n", total_cost);
    }

// for Commercial
else {
    printf("How many types of services do you need: ");
    scanf("%d", &n);

    int total_techs = 0;

    for (int i = 1; i <= n; i++) {
        start_commercial:
        printf("\nSelect Technician Type %d:\n", i);
        printf("1. Electrician\n2. Plumber\n3. Medical Help\n4.
Emergency Services\nChoice: ");
        scanf("%d", &tech_type);

        if (tech_type == 1) cost = 100;
        else if (tech_type == 2) cost = 80;
        else if (tech_type == 3) cost = 120;
        else if (tech_type == 4) cost = 150;
        else {

```

```
    printf("Invalid Technician choice.\n");
    goto start_commercial;
}
```

```
printf("Number of technicians needed: ");
scanf("%d", &num_tech);
```

```
total_cost += cost * num_tech;
total_techs += num_tech;
}
```

budget_entry:

```
printf("\nEnter your budget: ");
scanf("%f", &budget);
```

```
if (budget == 0) {
    printf("Request cancelled.\n");
    return 0;
}
```

```
if (budget < total_cost) {
    printf("Budget too low. Total cost is %f\n", total_cost);
    goto budget_entry;
}
```

```
if (budget > total_cost) {
    total_cost = budget;
}
```

```
printf("\n--- SUMMARY ---\n");
printf("Name: %s\nAddress: %s\nContact: %s\n", name,
address, contact);
printf("User Type: Commercial\n");
printf("Total Technicians: %d\n", total_techs);
printf("Total Cost: ₹%f\n", total_cost);
```

```
}  
  
    return 0;  
}
```

5. Testing

For Commercial

Case 1 : Budget is equal to total cost

1. Calling 2 types of technicians

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9403386520

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

How many types of technicians do you need: 2

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 1

Number of technicians needed: 10

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 2

Number of technicians needed: 10

Enter your budget: 1800

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9403386520

User Type: Commercial

Total Technicians: 20

Total Cost: 1800.000000

=== Code Execution Successful ===

2 . Calling 3 Types of technicians

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9403362540

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

How many types of technicians do you need: 3

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 1

Number of technicians needed: 10

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 2

Number of technicians needed: 10

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 3

Number of technicians needed: 10

Enter your budget: 3000

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9403362540

User Type: Commercial

Total Technicians: 30

Total Cost: 3000.000000

=== Code Execution Successful ===

3. Calling 4 Types of Technicians

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9402254120

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician

2. Plumber

3. Medical Help

4. Emergency Services

How many types of technicians do you need: 4

Select Technician:

1. Electrician

2. Plumber

- 3. Medical Help
- 4. Emergency Services

Choice: 1

Number of technicians needed: 10

Select Technician:

- 1. Electrician
- 2. Plumber
- 3. Medical Help
- 4. Emergency Services

Choice: 2

Number of technicians needed: 10

Select Technician:

- 1. Electrician
- 2. Plumber
- 3. Medical Help
- 4. Emergency Services

Choice: 3

Number of technicians needed: 10

Select Technician:

- 1. Electrician
- 2. Plumber
- 3. Medical Help
- 4. Emergency Services

Choice: 4

Number of technicians needed: 10

Enter your budget: 4500

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9402254120

User Type: Commercial
Total Technicians: 40
Total Cost: 4500.000000

=== Code Execution Successful ===

Case 2 : Budget is greater than the Total cost

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9405584150

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

How many types of technicians do you need: 2

Select Technician:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Choice: 1

Number of technicians needed: 10

Select Technician:

1. Electrician
2. Plumber
3. Medical Help

4. Emergency Services

Choice:

2

Number of technicians needed: 10

Enter your budget: 2000

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9405584150

User Type: Commercial

Total Technicians: 20

Total Cost: 2000.000000

=== Code Execution Successful ===

Case 3 : Budget is low than cost and reEntering the budget

Budget is lower than the total cost

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9403358401

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician

2. Plumber

3. Medical Help

4. Emergency Services

How many types of technicians do you need: 1

Select Technician:

1. Electrician

2. Plumber

3. Medical Help

4. Emergency Services

Choice: 1

Number of technicians needed: 1

Enter your budget: 50

Budget too low. Total cost is 100.00

ReEnter your budget:

2. Budget is lower than the total cost and

Re-Entering the budget

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9403354153

Are you DOMESTIC (1) or COMMERCIAL (0)? 0

Available Technicians:

1. Electrician

2. Plumber

3. Medical Help

4. Emergency Services

How many types of technicians do you need: 1

Select Technician:

1. Electrician

- 2. Plumber
- 3. Medical Help
- 4. Emergency Services

Choice: 1

Number of technicians needed: 1

Enter your budget: 59

Budget too low. Total cost is 100.00

Enter your budget: 100

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9403354153

User Type: Commercial

Total Technicians: 1

Total Cost: 100.000000

For Domestic (special discount of 20%)

Choosing a technician

WELCOME TO TECHNICIANS DISPATCH SYSTEM

Enter Your Name: Rudraksh

Enter Your Address: MMCOE

Enter Your Contact Info: 9458874562

Are you DOMESTIC (1) or COMMERCIAL (0)? 1

Available Technicians:

1. Electrician
2. Plumber
3. Medical Help
4. Emergency Services

Select Technician:

Choice: 1

--- SUMMARY ---

Name: Rudraksh

Address: MMCOE

Contact: 9458874562

User Type: Domestic

Selected Technician: Electrician

Total Technicians: 1

Total Cost: ₹80.00

Implementation