DEPARTMENT CALENDAR CODE:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#define MAX_APPOINTMENTS 10
typedef struct {
int day;     int
month;     int
year;
   char description[100];
} Appointment;

Appointment appointments[MAX_APPOINTMENTS]; int
appointmentCount = 0;

void displayCalendar(int month, int year); void
addAppointment(); void viewAppointments(int day,
int month, int year); int isLeapYear(int year); int
getDayOfWeek(int day, int month, int year); void
viewMainMenu(); void displayWelcomeBox();

int main() {
int choice;

   // Display the welcome screen
displayWelcomeBox();

   while (1) {
   viewMainMenu();
```

```
        printf("Enter your choice: ");
scanf("%d", &choice);

        switch (choice) {
            case 1: {                int month,
year;                printf("Enter month (1-
12): ");                scanf("%d", &month);
printf("Enter year: ");
scanf("%d", &year);
displayCalendar(month, year);
                break;
            }
case 2: {
                addAppointment();
                break;
            }            case 3: {                int day,
month, year;                printf("Enter the
day (1-31): ");                scanf("%d",
&day);                printf("Enter month (1-
12): ");                scanf("%d", &month);
printf("Enter year: ");
scanf("%d", &year);
viewAppointments(day, month, year);
                break;
            }
            case 4:
                printf("Exiting the system...\n");
                exit(0);
default:
                printf("Invalid choice, please try again.\n");
        }
```

```
    }

    return 0;
}

void displayWelcomeBox() {
printf("============================================\n");
    printf("|                                          |\n");
    printf("|        WELCOME TO DEPARTMENT             |\n");
printf("|            CALENDAR SYSTEM               |\n");
    printf("|                                          |\n");
    printf("============================================\n\n");
}

void viewMainMenu() {
printf("============================================\n");
    printf("|             MAIN MENU                    |\n");
printf("|------------------------------------------|\n");     printf("|
1. Display Calendar                  |\n"); printf("|  2. Add
Appointment                   |\n");     printf("|  3. View
Appointments for a Day          |\n");

    printf("|  4. Exit                               |\n");
    printf("============================================\n");
}

void displayCalendar(int month, int year) {     int daysInMonth[] = { 31, (isLeapYear(year) ? 29
: 28), 31, 30, 31, 30, 31, 31, 30, 31, 30, 31 };     int startDay = getDayOfWeek(1, month, year);

    printf("\n============================================\n");
    printf(" Calendar for %d/%d\n", month, year);
printf("============================================\n");
```

```
    printf("Sun Mon Tue Wed Thu Fri Sat\n");

    // Print leading spaces for the first week
    for (int i = 0; i < startDay; i++) {
printf("    ");
    }

    // Print the days of the month     for (int day = 1; day <=
daysInMonth[month - 1]; day++) {        printf("%3d ", day);
if ((startDay + day) % 7 == 0) {            printf("\n");
        }
    }
    printf("\n============================================\n");
}

int isLeapYear(int year) { return (year % 4 == 0 && (year % 100 !=
    0 || year % 400 == 0));
}

int getDayOfWeek(int day, int month, int year) {
struct tm timeStruct = { 0 };     timeStruct.tm_year
= year - 1900;     timeStruct.tm_mon = month - 1;
timeStruct.tm_mday = day;

    mktime(&timeStruct);

    return timeStruct.tm_wday;
}
void addAppointment() {     if (appointmentCount
>= MAX_APPOINTMENTS) {        printf("Max
appointment limit reached.\n");
```

```
        return;
    }

    Appointment newAppointment;
    printf("Enter appointment day (1-31): ");
scanf("%d", &newAppointment.day);     printf("Enter
month (1-12): ");
    scanf("%d", &newAppointment.month);
    printf("Enter year: ");
    scanf("%d", &newAppointment.year);     getchar(); // Clear newline character
from input buffer     printf("Enter appointment description: ");
fgets(newAppointment.description, sizeof(newAppointment.description), stdin);
newAppointment.description[strcspn(newAppointment.description, "\n")] = 0;

    // Add the appointment to the array
    appointments[appointmentCount] = newAppointment;
appointmentCount++;

    printf("Appointment added successfully.\n");
}

void viewAppointments(int day, int month, int year) {
printf("\nAppointments for %d/%d/%d:\n", day, month, year);
    int found = 0;     for (int i = 0; i <
appointmentCount; i++) {
        if (appointments[i].day == day && appointments[i].month == month && appointments[i].year ==
year) {            printf("Description: %s\n", appointments[i].description);            found = 1;
        }
    }
    if (!found) {        printf("No appointments found
for this day.\n");
```

```
    }
}
```

OUTPUT:

```
==============================================
|                          |
|      WELCOME TO DEPARTMENT          |
|         CALENDAR SYSTEM            |
|                          |
==============================================

==============================================
|          MAIN MENU               |
|----------------------------------------|
|  1. Display Calendar               |
|  2. Add Appointment                |
|  3. View Appointments for a Day        |
|  4. Exit                         |
==============================================
Enter your choice: 18
Enter month (1-12): 06
Enter year: 200 24

==============================================
 Calendar for 6/2024
==============================================
Sun Mon Tue Wed Thu Fri Sat
                    1
  2   3   4   5   6   7   8
  9  10  11  12  13  14  15
 16  17  18  19  20  21  22
23  24  25  26  27  28  29
 30
==============================================
==============================================
|           MAIN MENU                |
|-----------------------------------------|
|  1. Display Calendar                 |
|  2. Add Appointment                    |
|  3. View Appointments for a Day         |
|  4. Exit                           |
==============================================
Enter your choice: 2
Enter appointment day (1-31): 18
Enter month (1-12): 0 6
Enter year: 20244
Enter appointment description: admission
Appointment added successfully.
==============================================
|           MAIN MENU                |
|-----------------------------------------|
|  1. Display Calendar                 |
|  2. Add Appointment                    |
|  3. View Appointments for a Day         |
|  4. Exit                           |
==============================================
Enter your choice: 3
Enter the day (1-31): 18
Enter month (1-12): 6
Enter year: 2024

Appointments for 18/6/2024:

Description: admission

==========================================

|           MAIN MENU                |

|----------------------------------------|

|  1. Display Calendar                 |

|  2. Add Appointment                  |

|  3. View Appointments for a Day         |

|  4. Exit                         |

==========================================

Enter your choice: 4

Exiting the system...
```