

Program 1:

Develop a Program in C for the following:

a) Declare a calendar as an array of 7 elements (A dynamically Created array) to represent 7 days of a week. Each Element of the array is a structure having three fields. The first field is the name of the Day (A dynamically allocated String), The second field is the date of the Day (A integer), the third field is the description of the activity for a particular day (A dynamically allocated String).

b) Write functions create(), read() and display(); to create the calendar, to read the data from the keyboard and to print weeks activity details report on screen.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
// Define the structure for each day of the week
struct Day {
char *name;
int date;
char *activity;
};
// Define an array to store 7 days of the week
struct Day week[7];
// Function to create the calendar
void create() {
for (int i = 0; i < 7; i++) {
week[i].name = (char *)malloc(20 * sizeof(char));
week[i].activity = (char *)malloc(100 * sizeof(char));
printf("Enter the name of day %d: ", i + 1);
scanf("%s", week[i].name);
printf("Enter the date of day %d: ", i + 1);
scanf("%d", &week[i].date);
printf("Enter the activity for day %d: ", i + 1);
getchar(); // Consume the newline character
fgets(week[i].activity, 100, stdin);
}
}
// Function to read data from the keyboard
void read() {
create(); // Reusing the create function for reading data
}
// Function to display the calendar
void display() {
printf("\nDay\tDate\tActivity\n");
```

```
for (int i = 0; i < 7; i++) {  
    printf("%s\t%d\t%s", week[i].name, week[i].date, week[i].activity);  
}  
}  
int main() {  
    printf("Creating a calendar:\n");  
    create();  
    printf("\nDisplaying the calendar:\n");  
    display();  
    return 0;  
}
```