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>

// Structure to represent a day in the calendar
struct Day {
 char* dayName;
 int date;
 char* activity;
};
// Function to create the calendar
struct Day* createCalendar()
{
 struct Day* calendar = (struct Day*)malloc(7 * sizeof(struct Day));
 for (int i = 0; i < 7; i++)
 {
 calendar[i].dayName = (char*)malloc(20 * sizeof(char));  // Assuming a maximum of 20 characters for day name
 calendar[i].activity = (char*)malloc(100 * sizeof(char)); // Assuming a maximum of 100 characters for activity
 }
 return calendar;
}

// Function to read data from the keyboard
void readCalendarData(struct Day* calendar)
{
 for (int i = 0; i < 7; i++)
{
 printf("Enter the day name for Day %d: ", i + 1);
 scanf("%s", calendar[i].dayName);
 printf("Enter the date for Day %d: ", i + 1);
 scanf("%d", &calendar[i].date);
 printf("Enter the activity for Day %d: ", i + 1);
 scanf(" %s", calendar[i].activity);
 }
}
// Function to display the calendar
void displayCalendar(struct Day* calendar)
{
 printf("Weekly Activity Report:\n\n");
 for (int i = 0; i < 7; i++)
{
 printf("Day %d: %s\n", i + 1, calendar[i].dayName);
 printf("Date: %d\n", calendar[i].date);
 printf("Activity: %s\n", calendar[i].activity);
 printf("\n");
 }
}
```

```
int main()
{
 struct Day* calendar = createCalendar();
 readCalendarData(calendar);
 displayCalendar(calendar);
 // Free memory
 for (int i = 0; i < 7; i++)
{
 free(calendar[i].dayName);
 free(calendar[i].activity);
 }
 free(calendar);
 return 0;
}
```