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4) C program using structure to find whether student need to pay fine or not for the issued book in the college library. If the issued book crosses 3 months from the date of issue, the student has to pay fine per day ₹50.

->
```
#include <stdio.h>
#include <string.h>
#include <math.h>

struct student {
    int roll_no;
    char name[50];
    struct Date {
        int D;
        int m;
        int Y;
    } issue_date, today_date;
};

int main() {
    int month day, extramonth, extradays,
    bookcnt;
    long int fine;
    struct student a;
    printf("\n Enter student details \n");
    printf("-----\n");
    printf("Enter Roll no: ");
    scanf("%d", &a.roll_no);
```

```
printf(" Enter name: ");
scanf("%s", a.name);
printf(" Enter issue-date: ");
scanf("%d %d %d", &a.issue-date.D,
      &a.issue-date.M, &a.issue date.Y);
printf(" Enter today-date: ");
scanf("%d %d %d", &a.today-date.D, &a.today
      date.M, &a.today-date.Y);

month = a.today-date.M - a.issue-date.M
days  = a.today date.D - a.issue-date.D;

printf("------");
printf("\t%d Months", month);
printf("\t%d days", days);

if ( month >= 3 && days != 0)
   {
      printf("\n enter book amount");
      scanf("%d", &bookamt);
      printf("\n need to pay fine");

   extramonth = month - 3;
   totaldays = extramonth * 30 + days;
   printf("\n fine = %ld", fine);
}
   else {
      printf("\n Thank You! for returning
            within the time period");
   }

return 0;
}
```

Output

Enter Student Details:

Enter Roll-number : 1

Enter name : Adarsh

Enter issue-date : 01

01

23

Enter today-date : 03

03

23

- - - - 2 Months 2 days

Thank You! for ~~paying~~ ~~or~~ returning within time period

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6) ~~Pointer Array program~~ Pointer & Array program

7)

-> #include <stdio.h>

int main() {

int arr[5] = {2, 4, 6, 8, 10};
for (int i=0 ; i<5 ; i=i+1){

printf("[index %d] \t Address: %u, Value: %d \n", i, &(arr+i), *(arr+i));

}

return 0;
}

Output

[index 0] Address: 17177 89840 , Value: 2
[index 1] Address: 17 17789 844 , Value: 4
[index 2] Address: 17 177 89848 , Value: 6
[index 3] Address: 17 177 89852 , Value: 8
[index 4] Address: 17177 89856 , Value: 10

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7) Dynamic memory allocation

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

int main(){

    int *ptr1;
    char *ptr-2;
    float *ptr-3;

    ptr1 = (int*) malloc (1* sizeof(int));
    ptr-2 = (int*) malloc (1* size of (char)*1);
    ptr-3 = (float*) malloc (1* size of (float));

    printf("Enter the value for integer pointer: ");
    scanf("%d", ptr-1);
    printf("Enter the value for char pointer: ");
    scanf("%c", ptr-2);
    printf("Enter the value for float pointer: ");
    scanf("%f", ptr-3);

printf("\n The value stored in integer pointer
        is: %d \n", ptr-1);
printf("The value stored in character pointer
        is: %c \n", ptr-2);
printf("The value stored in float pointer
        is: %f", ptr-3);
free(ptr-1);
free(ptr-2);
free(ptr-3);
```

```
return 0;
}
```

Output

```
Enter the value for integer pointer: 23
Enter the value for char pointer: a
Enter the value for float pointer: 20.6

The value stored in integer pointer is: 23
The value stored in char pointer is: a
The value stored in float pointer is: 20.6
```

Sir 18/12/23

1/1/24

1)