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Micro Project Proposal
“Design a Rotating Fan”

1. Aims/Benefits of the Micro-Project:

1. Understanding the computer graphics and its applications like rotating fan.
2. To find working mechanism of graphics by using computer graphics.
3. To understand the graphics, functions and execution of the ‘C’ program.

2. Course Outcome Addressed:

- 1) CO1-Manipulate visual and geometric information of images.
- 2) CO2-Implement standard algorithms to draw various graphics objects using C program.
- 3) CO3-Develop programs for 2-D and 3-D Transformations.
- 4) CO4-Use projections to visualize objects on view plane.
- 5) CO5-Implement various clipping algorithms.
- 6) CO6-Develop programs to create curves using algorithms.

3. Proposed Methodology:

Here we are using computer graphics to rotating fan.

We have added functions `ouottextxy()`;, `rectangel()`;, `delay()`; And many more.

Compiler will perform chosen arithmetic operations in given program and give output to us as rotating fan graphics.

4.Action Plan:

Sr. No.	Details of Activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Search the topic	06/04/2021 4:00pm-5:00pm	13/04/2021 4:00pm-5:00pm	Amay Nitin Devshatwar
2	Search the information	20/04/2021 4:00pm-5:00pm	27/04/2021 4:00pm-5:00pm	Somesh Mahadev Bharbade
3	Algorithm developing	04/05/2021 4:00pm-5:00pm	08/05/2021 4:00pm-5:00pm	Omanand Prashant Swami
4	Flowchart developing	11/05/2021 4:00pm-5:00pm	15/05/2021 4:00pm-5:00pm	Omanand Prashant Swami
5	Function making	18/05/2021 4:00pm-5:00pm	22/05/2021 4:00pm-5:00pm	Amay Nitin Devshatwar
6	Coding developing	25/05/2021 4:00pm-5:00pm	29/05/2021 4:00pm-5:00pm	Omanand Prashant Swami
7	Debugging	01/06/2021 4:00pm-5:00pm	05/06/2021 4:00pm-5:00pm	Amay Nitin Devshatwar
8	Finalizing Project with its report	07/06/2021 4:00pm-5:00pm	09/06/2021 4:00pm-5:00pm	Somesh Mahadev Bharbade

5. Resources Required:

Sr. No.	Name of resource / material	Specification	Quantity	Remarks
1	Computer	WINDOWS 11,8 GB RAM, 256GB SSD	1	
2	Operating System	WINDOWS 11	1	
3	Compiler	Turbo C/GCC/VS Code	1	
4	Browser	Chrome	1	

Names of Team Members with Roll No.'s:

Sr. No.	Enrollment No.	Name of Team Member	Roll No.
1	21109500050	Omanand Prashant Swami	02
2	21109500103	Somesh Mahadev Bharbade	54
3	21109500088	Amay Nitin Devshatwar	39

Mr. Kazi A.S.M.

Name and Signature of the Teacher

Micro-Project Report

“Design a Rotating Fan”

➤ Rationale:

Creating a simple rotating fan to present computer graphics and its application in various sector like animation, game etc... using VS Code.

2. Aims/Benefits of the Micro-Project:

1. Understanding the computer graphics and its applications like rotating fan.
2. To find working mechanism of graphics by using computer graphics.
3. To understand the graphics, functions and execution of the ‘C’ program.

3. Course Outcome Addressed:

- 1) CO1-Manipulate visual and geometric information of images.
- 2) CO2-Implement standard algorithms to draw various graphics objects using C program.
- 3) CO3-Develop programs for 2-D and 3-D Transformations.
- 4) CO4-Use projections to visualize objects on view plane.
- 5) CO5-Implement various clipping algorithms.
- 6) CO6-Develop programs to create curves using algorithms.

4. Literature Review:

Here we are using computer graphics to create rotating fan.

We have added functions `ouottextxy()`, `rectangel()`, `delay()`; And many more.

Compiler will perform chosen arithmetic operations in given program and give output to us as rotating fan graphics.

❖ Initgraph()-

This Initgraph function is one of the most important functions from graphics.h library in 'C' Language.

- With this function we initialize (start) graphics in our computer system.
- After this function we will write our remaining graphics program.

Syntax:

```
initgraph(&gdriver, &gmode, PATH);
```

➔ Important Points about Initgraph function :

- The expression provided in the path argument must point to BGI file from Turbo C.

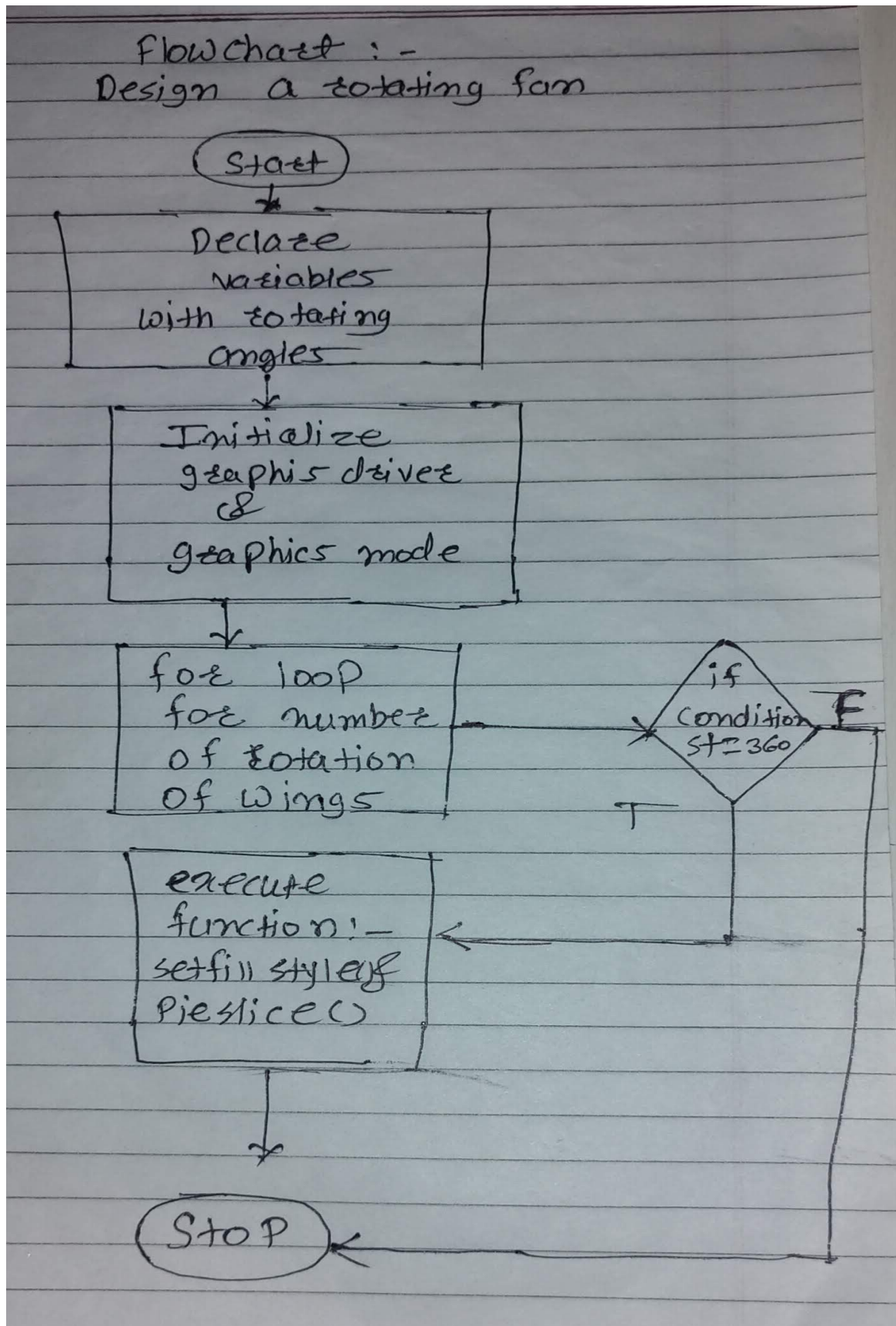
Valid expressions for initgraph function:

```
void main(void)
{
    int gdriver = DETECT, gmode;
    // Path ==>>> "C:/TURBOC3/BGI"
    initgraph(&gdriver, &gmode, "C:/TURBOC3/BGI");
    closegraph();
}
```

- **Graphics must be get closed with closegraph() function.**
 - To design rotating fan we have to use for loop to iterate.
 - To print some text on output screen we will use outtextxy() function.
 - As a base of that rotating fan we have to use rectangle() function.
 - We will use if control statement to check some conditions in our program.
 - After all we will perform some more arithmetical operations and will display the output as a rotating fan.
 - Lastly we will close the graphics with closegraph() function.

5. Actual Methodology Followed:

5.1 Flow Chart



5.2 Source Code

“Design a Rotating Fan”

```
#include <graphics.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
#include <dos.h>
int main(void)
{
    /* request auto detection */
    int gdriver = DETECT, gmode;
    // int errorcode;
    int i, midx, midy;
    int stangle1 = -45, endangle1 = 0, radius = 100;
    int stangle2 = 135, endangle2 = 180;

    /* initialize graphics and local variables */
    // Graphics initialization For Turbo CPP With BGI Path.
    initgraph(&gdriver, &gmode, "C:/TURBOC3/BGI");

    // Graphics initialization For VS Code With Null argument.
    // initgraph(&gdriver, &gmode, NULL);

    /* mid position of x in x-axis */
    midx = getmaxx() / 2;
    /* mid position of y in y-axis */
    midy = getmaxy() / 2;

    for (i = 0; i < 400; i++)
    {
        /* start and end angle of fan's first wing */
        if (endangle1 == 360)
        {
            stangle1 = -45;
            endangle1 = 0;
        }
    }
}
```

```

        if (endangle2 == 360)
        {
            stangle2 = -45;
            endangle2 = 0;
        }
        /* clears graphic device */
        cleardevice();

        // Our Names And Enrollment Numbers.
        outtextxy(150, 8, "Computer Graphics Micro-Project By C03I Students Of VAPM ==>>>");
        outtextxy(230, 30, "Subject:=>>> Design a Rotating Fan");
        outtextxy(200, 53, "i]    2110950050            Omanand Prashant Swami");
        outtextxy(200, 76, "ii]   2110950088            Amay Nitin Devshatwar");
        outtextxy(200, 100, "iii] 2110950103            Somesh Mahadev Bharbade");

        // Arithmetic calculation for generating angles.
        stangle1 = stangle1 + 45;
        stangle2 = stangle2 + 45;
        endangle1 = endangle1 + 45;
        endangle2 = endangle2 + 45;

        /* fan stand */
        rectangle(midx - 5, midy - 5, midx + 5, midy + 150);

        /* draws first wing of fan */
        setfillstyle(SLASH_FILL, i % 10);
        pieslice(midx, midy, stangle1, endangle1, radius);

        /* draws second wing of fan */
        setfillstyle(BKSLASH_FILL, i % 10);
        pieslice(midx, midy, stangle2, endangle2, radius);
        /* sleep for 40 millisecond */
        delay(100);
    }
    /* clean up */
    getch();
    /* deallocate memory allocated for graphic screen */
    // closegraph();

return 0; }

```


C++ CGR_mproject.cpp X



C++ CGR_mproject.cpp > ...

```

1  #include <graphics.h>
2  #include <stdlib.h>
3  #include <stdio.h>
4  #include <conio.h>
5  #include <dos.h>
6
7  int main(void)
8  {
9      /* request auto detection */
10     int gdriver = DETECT, gmode;
11     // int errorcode;
12     int i, midx, midy;
13     int stangle1 = -45, endangle1 = 0, radius = 100;
14     int stangle2 = 135, endangle2 = 180;
15
16     /* initialize graphics and local variables */
17     // Graphics initialization For Turbo CPP With BGI Path.
18     initgraph(&gdriver, &gmode, "C:/TURBOC3/BGI");
19     // Graphics initialization For VS Code With Null argument.
20     // initgraph(&gdriver, &gmode, NULL);
21
22     /* read result of initialization */
23     // errorcode = graphresult();
24     // if (errorcode != grOk) {
25     //     /* an error occurred */
26     //     printf("Graphics error: %s\n", grapherrormsg(errorcode));
27     //     printf("Press any key to halt:");
28     //     getch();
29     //     exit(1); /* terminate with an error code */
30     // }
31
32     /* mid position of x in x-axis */
33     midx = getmaxx() / 2;
34     /* mid position of y in y-axis */
35     midy = getmaxy() / 2;
36

```



C++ CGR_mproject.cpp X



C++ CGR_mproject.cpp > ...

```

36
37  for (i = 0; i < 400; i++)
38  {
39      /* start and end angle of fan's first wing */
40      if (endangle1 == 360)
41      {
42          stangle1 = -45;
43          endangle1 = 0;
44      }
45
46      /* start and end angle of fan's second wing */
47      if (endangle2 == 360)
48      {
49          stangle2 = -45;
50          endangle2 = 0;
51      }
52
53      /* clears graphic device */
54      cleardevice();
55
56      // Our Names And Enrollment Numbers.
57      outtextxy(150, 8, "Computer Graphics Micro-Project By C03I Students Of VAPM ==>>>");
58      outtextxy(230, 30, "Subject:==>>> Design a Rotating Fan");
59      outtextxy(200, 53, "i] 2110950050      Omanand Prashant Swami");
60      outtextxy(200, 76, "ii] 2110950088      Amay Nitin Devshatwar");
61      outtextxy(200, 100, "iii] 2110950103      Somesh Mahadev Bharbade");
62
63      // Arithmetic calculation for generating angles.
64      stangle1 = stangle1 + 45;
65      stangle2 = stangle2 + 45;
66      endangle1 = endangle1 + 45;
67      endangle2 = endangle2 + 45;
68
69      /* fan stand */
70      rectangle(midx - 5, midy - 5, midx + 5, midy + 150);
71
72      /* draws first wing of fan */
73      setfillstyle(SLASH_FILL, i % 10);
74      pieslice(midx, midy, stangle1, endangle1, radius);
75

```



```

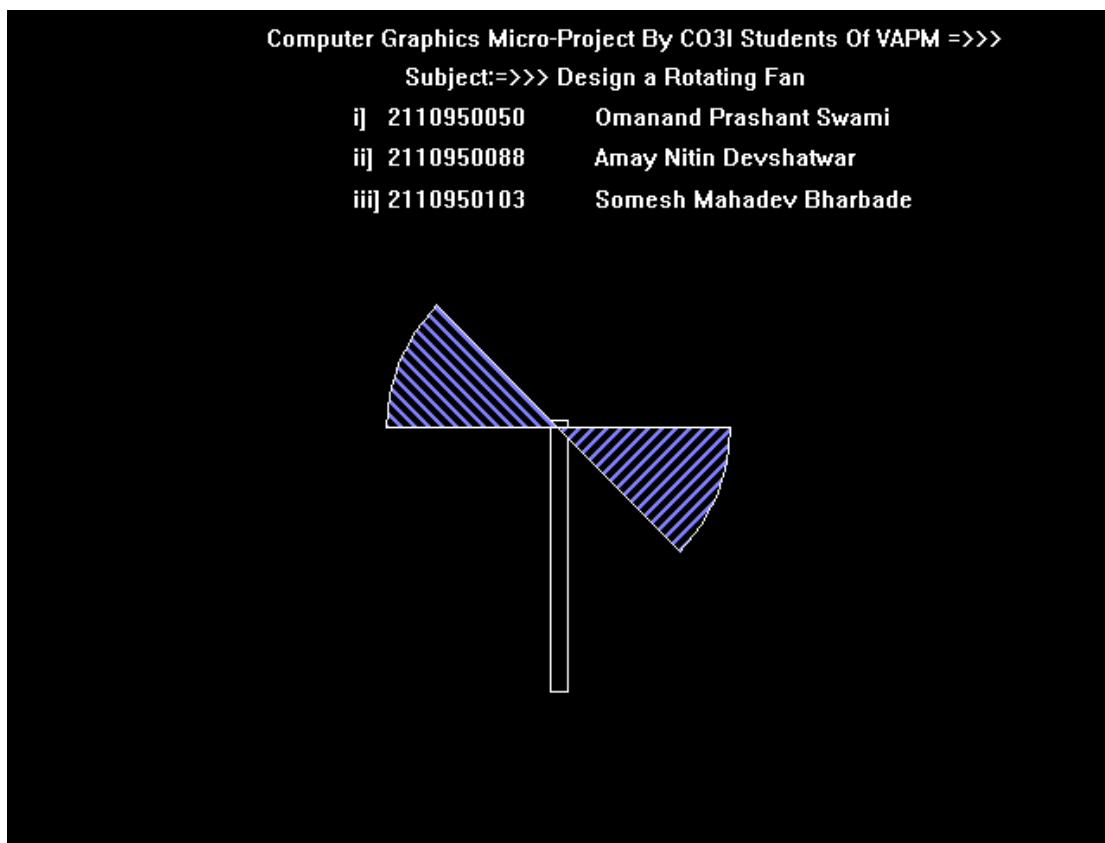
75
76     /* draws second wing of fan */
77     setfillstyle(BKSLASH_FILL, i % 10);
78     pieslice(midx, midy, stangle2, endangle2, radius);
79     /* sleep for 40 millisecond */
80     delay(100);
81 }
82
83 /* clean up */
84 getch();
85
86 /* deallocate memory allocated for graphic screen */
87 // closegraph();
88
89 return 0;
90 }

```

6. Actual Resources Used:

Sr. No.	Name of resource / material	Specification	Quantity	Remarks
1	Computer	WINDOWS 11,8GB RAM, 256GB SSD	1	
2	Operating System	WINDOWS 11	1	
3	Compiler	Turbo C/GCC/VS code	1	
4	Browser	Chrome	1	

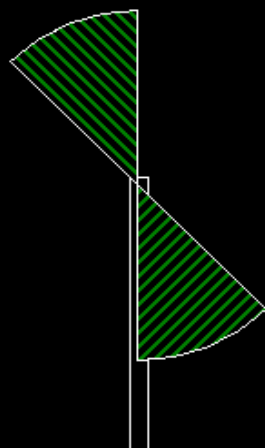
7.Outputs of Micro-Projects:



Computer Graphics Micro-Project By C03I Students Of VAPM ==>>>

Subject:==>>> Design a Rotating Fan

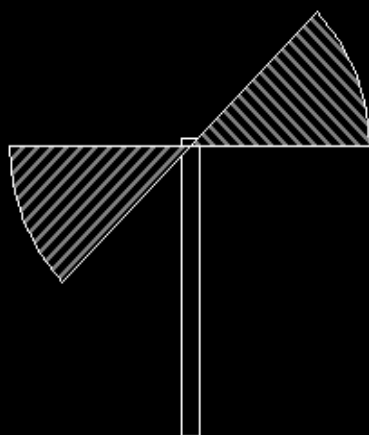
- | | |
|-----------------|------------------------|
| i] 2110950050 | Omanand Prashant Swami |
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Computer Graphics Micro-Project By C03I Students Of VAPM ==>>>

Subject:==>>> Design a Rotating Fan

- | | |
|-----------------|------------------------|
| i] 2110950050 | Omanand Prashant Swami |
| ii] 2110950088 | Amay Nitin Devshatwar |
| iii] 2110950103 | Somesh Mahadev Bhabade |



8.Skill developed / Learning out of this Micro-Project:

There are so many thing that we learn from this project :==>>>

1. We learn that how to make the project in c programming.
2. How to design computer graphics in 'C' Language.
3. How to collect the information and how to make the presentation that we learn from this project.
4. We develop our logic implementation for programming and coding as well as for designing graphics.
5. We learn to use vary functions of graphics.
6. We learn how to create different designs and shapes with different graphical function.
7. We learn some keywords and funtions from 'dos.h' & 'stdlib.h' header file.
8. We learnt lot more things like logic building and enhancement from this project.

9. Applications of this Micro-Project:

1. also be used to design graphics with implimenting this project on large scale.It can be used to understand computer graphics.
2. It can
3. It can also be used to make animations UI development , Game development Etc.....
