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//program by prameet
// header file for two-d translation
#include<math.h>

void two_d_trans() {

  int x1, x2, x3, y1, y2, y3, nx1, nx2, nx3, ny1, ny2, ny3, c;
  int sx, sy, xt, yt, r;
  float t;
  clrscr();
  printf("\t Program for basic transformations");
  printf("\n\t Enter the points of triangle");
  printf("\nEnter the coordinates of first vertex\n");
  scanf("%d%d%", & x1, & y1);
  printf("\nEnter the coordinates of second vertex\n");
  scanf("%d%d",&x2,&y2);
  printf("\n Enter the coordinates of third vertex\n");
  scanf("%d%d",&x3,&y3);
  clrscr();
  line(x1, y1, x2, y2);
  line(x2, y2, x3, y3);
  line(x3, y3, x1, y1);
  getch();
  printf("\n 1.Translation\n 2.Rotation\n \n 4.exit");
  printf("Enter your choice:");
  scanf("%d", & c);
  switch (c) {
  case 1:
    printf("\n Enter the translation factor");
    scanf("%d %d", & xt, & yt);
    nx1 = x1 + xt;
    ny1 = y1 + yt;
    nx2 = x2 + xt;
    ny2 = y2 + yt;
    nx3 = x3 + xt;
    ny3 = y3 + yt;
    line(nx1, ny1, nx2, ny2);
    line(nx2, ny2, nx3, ny3);
    line(nx3, ny3, nx1, ny1);
    getch();
    break;

  case 2:
    printf("\n Enter the angle of rotation");
    scanf("%d", & r);
    t = 3.14 * r / 180;
    nx1 = abs(x1 * cos(t) - y1 * sin(t));
    ny1 = abs(x1 * sin(t) + y1 * cos(t));
    nx2 = abs(x2 * cos(t) - y2 * sin(t));
    ny2 = abs(x2 * sin(t) + y2 * cos(t));
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    nx3 = abs(x3 * cos(t) - y3 * sin(t));
    ny3 = abs(x3 * sin(t) + y3 * cos(t));
    line(nx1, ny1, nx2, ny2);
    line(nx2, ny2, nx3, ny3);
    line(nx3, ny3, nx1, ny1);
    getch();
    break;

  case 3:

    printf("\n Enter the scalling factor");
    scanf("%d", & sx);
    nx1 = x1 * sx;
    ny1 = y1 * sx;
    nx2 = x2 * sx;
    ny2 = y2 * sx;
    nx3 = x3 * sx;
    ny3 = y3 * sx;
    line(nx1, ny1, nx2, ny2);
    line(nx2, ny2, nx3, ny3);
    line(nx3, ny3, nx1, ny1);
    getch();
    break;

  case 4:
    break;
  default:
    printf("Enter the correct choice");
  }
  getch();

}
```