**CHAPTER-03**

**IMPLEMENTATION**

**3.1 CODE:**

#include<windows.h>

#include<stdlib.h>

#include<string.h>

#include<GL/glut.h>

#include<math.h>

char pname[] = "TSUNAMI";

char done[] = "DONE BY:-";

char sname1[] = "Shalaka";

char sname2[] = "Prashant";

char sname3[]="1BI14CS145";

char sname5[]="Press 'i' for instruction...";

char tname1[]="BEFORE-TSUNAMI";

char tname2[]="DURING-TSUNAMI";

char tname3[]="AFTER-TSUNAMI";

char i1[]="INSTRUCTIONS:-";

char i2[]="Press 'b' for Before-Tsunami";

char i3[]="Press 'd' for During-Tsunami";

char i4[]="Press 'a' for After-Tsunami";

char i6[]="Press 'e' for exit";

char i5[]="The following sequence need to be followed:-";

char s1[]="Tsunami disasters from 1980-2008:-";

char s2[]="Average no. of events:-18";

char s3[]="Average no. of people killed:-229,551";

char s4[]="Average no. of people affected:-2,481,879";

char s5[]="Average economic damage(US$\*1,000):-10,046,000";

unsigned char k;

void myinit(){

glClearColor(1.0,1.0,1.0,1.0);

glColor3f(1,1,0);

glPointSize(5.0);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(20.0,500.0,20.0,500.0);

glutPostRedisplay();}

void display\_string(int x, int y, char \*string, int font){

int len,i;

glRasterPos2f(x, y);

len = (int) strlen(string);

for (i = 0; i < len; i++){

if(font==1)

glutBitmapCharacter(GLUT\_BITMAP\_TIMES\_ROMAN\_24,string[i]);

if(font==2)

glutBitmapCharacter(GLUT\_BITMAP\_HELVETICA\_18,string[i]);

if(font==3)

glutBitmapCharacter(GLUT\_BITMAP\_HELVETICA\_12,string[i]);

if(font==4)

glutBitmapCharacter(GLUT\_BITMAP\_HELVETICA\_10,string[i]);

}}

void draw\_pixel(GLint cx,GLint cy){

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POINTS);

glPointSize(1.0);

glVertex2i(cx,cy);

glEnd();}

void plotpixels(GLint h,GLint k,GLint x,GLint y){

draw\_pixel(x+h,y+k);

draw\_pixel(-x+h,y+k);

draw\_pixel(x+h,-y+k);

draw\_pixel(-x+h,-y+k);

draw\_pixel(y+h,x+k);

draw\_pixel(-y+h,x+k);

draw\_pixel(y+h,-x+k);

draw\_pixel(-y+h,-x+k);}

void circle\_draw(GLint h,GLint k,GLint r){

GLint d=1-r,x=0,y=r;

while(y>x){

plotpixels(h,k,x,y);

if(d<0) d+=2\*x+3;

else{

d+=2\*(x-y)+5; --y;

}++x;}

plotpixels(h,k,x,y);}

void cyl(){

GLint r=4;

circle\_draw(280,40,r);

circle\_draw(310,40,r);}

void instructions(){

glClear(GL\_COLOR\_BUFFER\_BIT);

glClearColor(1.0,1.0,1.0,1.0);

glColor3f(0,0,1);

display\_string(190,300,i5,1);

glColor3f(1,0,0);

display\_string(250,400,i1,1);

glColor3f(0.5,0.6,0.1);

display\_string(190,275,i2,1);

display\_string(190,245,i3,1);

display\_string(190,215,i4,1);

display\_string(190,340,i6,1);

glFlush();

glutSwapBuffers();}

void firstpage(void){

glClear(GL\_COLOR\_BUFFER\_BIT);

glClearColor(1,1,1,1);

glBegin(GL\_QUAD\_STRIP);

glColor3f(0.35,0.6,0.25);

glVertex2f(0,0);

glVertex2f(0,150);

glVertex2f(500,0);

glVertex2f(500,150);

glEnd();

glBegin(GL\_LINE\_LOOP);

glColor3f(0,0.4,0);

glVertex2f(75,50);

glVertex2f(70,86);

glEnd();

glBegin(GL\_LINE\_LOOP);

glColor3f(0,0.4,0);

glVertex2f(75,50);

glVertex2f(70,86);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.67,0.67,0.67);

glVertex2f(0.0,120.0);

glVertex2f(0,230);

glVertex2f(500,230);

glVertex2f(500,120);

glEnd();

glBegin(GL\_LINES);

glColor3f(0,0,0);

glVertex2f(0,120);

glVertex2f(500,120);

glVertex2f(0,230);

glVertex2f(500,230);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(80,173);

glVertex2f(80,177);

glVertex2f(110,173);

glVertex2f(110,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(240,173);

glVertex2f(240,177);

glVertex2f(270,173);

glVertex2f(270,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(410,173);

glVertex2f(410,177);

glVertex2f(440,173);

glVertex2f(440,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(490,173);

glVertex2f(490,177);

glVertex2f(520,173);

glVertex2f(520,177);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,1.3,1.3);

glVertex2f(0,350);

glVertex2f(0,420);

glVertex2f(180,400);

glVertex2f(200,400);

glVertex2f(220,420);

glVertex2f(240,420);

glVertex2f(440,400);

glVertex2f(460,420);

glVertex2f(480,420);

glVertex2f(500,400);

glVertex2f(520,420);

glVertex2f(540,420);

glVertex2f(540,350);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.5,0.3,0);

glVertex2f(260,430);

glVertex2f(270,410);

glVertex2f(290,410);

glVertex2f(300,430);

glEnd();

glBegin(GL\_LINES);

glColor3f(1,0,0);

glVertex2f(270,430);

glVertex2f(270,450);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1,0,0);

glVertex2f(270,450);

glVertex2f(280,445);

glVertex2f(270,438);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(130,280);

glVertex2f(145,300);

glVertex2f(160,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.255,0.0,0.255);

glVertex2f(130,275);

glVertex2f(135,275);

glVertex2f(135,280);

glVertex2f(130,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.255,0.0,0.255);

glVertex2f(136,275);

glVertex2f(141,275);

glVertex2f(141,280);

glVertex2f(136,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.255,0.0,0.255);

glVertex2f(148,275);

glVertex2f(153,275);

glVertex2f(153,280);

glVertex2f(148,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.255,0.0,0.255);

glVertex2f(154,275);

glVertex2f(160,275);

glVertex2f(160,280);

glVertex2f(154,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,1.0,0.0);

glVertex2f(330,55);

glVertex2f(400,55);

glVertex2f(400,100);

glVertex2f(330,100);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(330,100);

glVertex2f(365,130);

glVertex2f(400,100);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.7,0.8,0.0);

glVertex2f(355,55);

glVertex2f(355,65);

glVertex2f(375,65);

glVertex2f(375,55);

glEnd()

glBegin(GL\_POLYGON);

glColor3f(0.,0.0,0.8);

glVertex2f(270,45);

glVertex2f(270,60);

glVertex2f(300,70);

glVertex2f(310,60);

glVertex2f(320,60);

glVertex2f(320,45);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.53,0.25,0.12);

glVertex2f(450,20);

glVertex2f(460,25);

glVertex2f(445,80);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,0.5,0.0);

glVertex2f(445,80);

glVertex2f(430,50);

glVertex2f(435,80);

glVertex2f(410,90);

glVertex2f(433,95);

glVertex2f(425,120);

glVertex2f(445,95);

glVertex2f(455,120);

glVertex2f(445,95);

glVertex2f(480,100);

glVertex2f(460,85);

glVertex2f(475,60);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1,1,0);

glVertex2f(135,30);

glVertex2f(173,50);

glVertex2f(173,90);

glVertex2f(135,90);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1,0,0);

glVertex2f(135,76);

glVertex2f(125,100);

glVertex2f(165,110);

glVertex2f(175,90);

glEnd();

glBegin(GL\_LINES);

glColor3f(1,0,0);

glVertex2f(125,100);

glVertex2f(115,80);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0.8);

glVertex2f(125,100);

glVertex2f(115,80);

glVertex2f(115,50);

glVertex2f(135,30);

glVertex2f(135,76);

glVertex2f(125,100);

glEnd();

glBegin(GL\_LINES);

glColor3f(0,0,0);

glVertex2f(125,100);

glVertex2f(115,80);

glEnd();

glBegin(GL\_QUADS);

glColor3f(0.5,0.3,0);

glVertex2f(145,55);

glVertex2f(145,70);

glVertex2f(160,76);

glVertex2f(160,62);

glEnd();

glBegin(GL\_LINES);

glColor3f(0,0,0);

glVertex2f(152.5,58);

glVertex2f(152.5,73);

glEnd();

glBegin(GL\_LINES);

glColor3f(0,0,0);

glVertex2f(145,62.5);

glVertex2f(160,69.5);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.4,0.2,0.3);

glVertex2f(200,40);

glVertex2f(200,80);

glVertex2f(250,80);

glVertex2f(250,40);

glEnd();

glBegin(GL\_QUADS);

glColor3f(0.5,0.3,0);

glVertex2f(220,40);

glVertex2f(220,60);

glVertex2f(230,60);

glVertex2f(230,40);

glEnd();

//bird

glLineWidth(2.0);

glBegin(GL\_LINES);

glPointSize(15.0);

glColor3f(0.0,0.0,0.0);

glVertex2f(409.2,462.9);

glVertex2f(404.1,459.3);

glVertex2f(404.1,459.3);

glVertex2f(389.5,443.2);

glVertex2f(389.5,443.2);

glVertex2f(384.4,447.6);

glVertex2f(384.4,447.6);

glVertex2f(379.3,447.6);

glVertex2f(379.3,447.6);

glVertex2f(372.7,448.3);

glVertex2f(372.7,448.3);

glEnd();

glLineWidth(2.0);

glBegin(GL\_LINES);

glPointSize(15.0);

glVertex2f(74.2,442.9);

glVertex2f(84.9,435.4);

glVertex2f(84.9,435.4);

glVertex2f(93.5,426.8);

glVertex2f(93.5,426.8);

glVertex2f(97.8,440.8);

glVertex2f(97.8,440.8);

glVertex2f(102.2,450.4);

glVertex2f(102.2,450.4);

glVertex2f(108.6,459.0);

glEnd();

glBegin(GL\_LINES);

glPointSize(15.0);

glVertex2f(141.9,471.0);

glVertex2f(150.5,471.0);

glVertex2f(150.5,471.0);

glVertex2f(158.1,464.5);

glVertex2f(158.1,464.5);

glVertex2f(165.6,457.0);

glVertex2f(165.6,457.0);

glVertex2f(168.8,465.6);

glVertex2f(168.8,465.6);

glVertex2f(171.0,475.3);

glVertex2f(171.0,475.3);

glVertex2f(175.3,479.6);

glVertex2f(175.3,479.6);

glVertex2f(186.0,483.9);

glEnd();

glBegin(GL\_LINES);

glPointSize(15.0);

glVertex2f(223.7,458.1);

glVertex2f(232.3,455.9);

glVertex2f(232.3,455.9);

glVertex2f(240.9,451.6);

glVertex2f(255.9,460.2);

glVertex2f(255.9,460.2);

glVertex2f(260.2,466.7);

glVertex2f(260.2,466.7);

glVertex2f(267.7,471.0);

glEnd();

glLineWidth(2.0);

glBegin(GL\_LINES);

glPointSize(15.0);

glVertex2f(296.8,450.5);

glVertex2f(304.3,448.4);

glVertex2f(304.3,448.5);

glVertex2f(310.8,444.1);

glVertex2f(310.8,444.1);

glVertex2f(318.3,439.8);

glVertex2f(318.3,439.8);

glVertex2f(328.0,453.8);

glVertex2f(328.0,453.8);

glVertex2f(337.6,461.3);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.7,0.35,0.8);

glVertex2f(60,240);

glVertex2f(60,280);

glVertex2f(100,280);

glVertex2f(100,240);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,0.6,0.6);

glVertex2f(60,280);

glVertex2f(45,280);

glVertex2f(60,295);

glVertex2f(100,295);

glVertex2f(115,280);

glVertex2f(100,280);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,0.3,0.7);

glVertex2f(75,240);

glVertex2f(75,255);

glVertex2f(85,255);

glVertex2f(85,240);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,0.7,0.0);

glVertex2f(440,320);

glVertex2f(430,295);

glVertex2f(435,320);

glVertex2f(420,330);

glVertex2f(435,330);

glVertex2f(438,355);

glVertex2f(440,337);

glVertex2f(450,346);

glVertex2f(441,338);

glVertex2f(449,325);

glEnd();

//boat

glBegin(GL\_QUAD\_STRIP);

glColor3f(0.5,0,0);

glVertex2f(230,310);

glVertex2f(280,310);

glVertex2f(220,330);

glVertex2f(290,330);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1.0,0.0,0.0);

glVertex2f(240,310);

glVertex2f(255,340);

glVertex2f(270,310);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(0,0,1);

glVertex2f(160,320);

glVertex2f(200,320);

glVertex2f(150,340);

glVertex2f(210,340);

glEnd();

cyl();

glColor3f(0.0,0.0,0.0);

display\_string(200,400,tname1,2);

glFlush();}

void car1(int i){

glClear(GL\_COLOR\_BUFFER\_BIT);

firstpage();

glBegin(GL\_POLYGON);

glColor3f(0.5,0.0,0.8);

glVertex2f(5+i,200);

glVertex2f(5+i,220);

glVertex2f(10+i,220);

glVertex2f(20+i,245);

glVertex2f(45+i,245);

glVertex2f(55+i,220);

glVertex2f(65+i,220);

glVertex2f(65+i,200);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(55+i,200);

glVertex2f(52.5+i,208);

glVertex2f(50+i,210);

glVertex2f(47.5+i,208);

glVertex2f(45+i,200);

glVertex2f(47.5+i,193);

glVertex2f(50+i,191);

glVertex2f(52.5+i,193);

glVertex2f(55+i,200);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(20+i,200);

glVertex2f(17.5+i,208);

glVertex2f(15+i,210);

glVertex2f(13.5+i,208);

glVertex2f(11+i,200);

glVertex2f(13.5+i,193);

glVertex2f(15+i,191);

glVertex2f(17.5+i,193);

glVertex2f(20+i,200);

glEnd();

glFlush();}

void bus(int i){

glClear(GL\_COLOR\_BUFFER\_BIT);

firstpage();

glBegin(GL\_POLYGON);

glColor3f(1,1,0);

glVertex2f(490-i,160);

glVertex2f(490-i,210);

glVertex2f(400-i,210);

glVertex2f(400-i,160);

glEnd();

glBegin(GL\_LINES);

glColor3f(1,0,0);

glVertex2f(490-i,185);

glVertex2f(400-i,185);

glVertex2f(490-i,185);

glVertex2f(490-i,210);

glVertex2f(460-i,185);

glVertex2f(460-i,210);

glVertex2f(450-i,185);

glVertex2f(450-i,210);

glVertex2f(430-i,185);

glVertex2f(430-i,210);

glVertex2f(420-i,185);

glVertex2f(420-i,210);

glEnd();

glBegin(GL\_LINE\_LOOP);

glColor3f(0,0,0);

glVertex2f(490-i,160);

glVertex2f(490-i,210);

glVertex2f(400-i,210);

glVertex2f(400-i,160);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(480-i,160);

glVertex2f(477.5-i,168);

glVertex2f(475-i,170);

glVertex2f(472.5-i,168);

glVertex2f(470-i,160);

glVertex2f(472.5-i,152);

glVertex2f(475-i,150);

glVertex2f(477.5-i,152);

glVertex2f(480-i,160);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(420-i,160);

glVertex2f(417.5-i,168);

glVertex2f(415-i,170);

glVertex2f(412.5-i,168);

glVertex2f(410-i,160);

glVertex2f(412.5-i,152);

glVertex2f(415-i,150);

glVertex2f(417.5-i,152);

glVertex2f(420-i,160);

glEnd();

glFlush();}

void car\_move(){

for(float i=0;i<=500;i+=3){

car1(i);

for(int k=0;k<=10000000;k++);

glutSwapBuffers();

}}

void second\_page(){

car\_move();

for(float i=0;i<=500;i+=3){

bus(i);

for(int k=0;k<=10000000;k++);

glutSwapBuffers();}}

void waves(int i)

{

glClearColor(1,1,1,1);

glBegin(GL\_POLYGON);

glColor3f(0.0,1.3,1.3);

glVertex2f(6.5,374.2+i);

glVertex2f(16.1,386.0+i);

glVertex2f(20.4,397.8+i);

glVertex2f(32.2,465.6+i);

glVertex2f(21.5,475.1+i);

glVertex2f(40.9,475.1+i);

glVertex2f(62.4,472.0+i);

glVertex2f(76.3,471.0+i);

glVertex2f(86.0,467.7+i);

glVertex2f(101.1,463.4+i);

glVertex2f(114.0,454.8+i);

glVertex2f(153.8,431.2+i);

glVertex2f(153.8,416.1+i);

glVertex2f(163.4,368.8+i);

glVertex2f(169.9,377.4+i);

glVertex2f(175.3,386.6+i);

glVertex2f(181.7,392.5+i);

glVertex2f(188.2,400.0+i);

glVertex2f(195.7,409.7+i);

glVertex2f(201.1,418.3+i);

glVertex2f(205.4,425.8+i);

glVertex2f(210.8,434.4+i);

glVertex2f(217.2,446.2+i);

glVertex2f(218.3,458.1+i);

glVertex2f(220.4,472.0+i);

glVertex2f(236.9,477.4+i);

glVertex2f(235.5,476.3+i);

glVertex2f(244.1,476.3+i);

glVertex2f(251.6,477.4+i);

glVertex2f(261.3,480.6+i);

glVertex2f(307.5,476.3+i);

glVertex2f(314.0,464.5+i);

glVertex2f(332.3,390.3+i);

glVertex2f(331.2,381.7+i);

glVertex2f(323.7,371.0+i);

glVertex2f(336.6,378.5+i);

glVertex2f(347.3,389.2+i);

glVertex2f(359.1,395.7+i);

glVertex2f(368.8,402.2+i);

glVertex2f(379.6,406.5+i);

glVertex2f(390.3,417.2+i);

glVertex2f(401.1,423.7+i);

glVertex2f(403.2,441.7+i);

glVertex2f(401.1,460.2+i);

glVertex2f(394.6,468.8+i);

glVertex2f(406.5,469.9+i);

glVertex2f(419.4,464.5+i);

glVertex2f(489.2,420.4+i);

glVertex2f(493.5,402.2+i);

glVertex2f(496.8,405.0+i);

glVertex2f(497.8,402.2+i);

glVertex2f(487.1,404.2+i);

glVertex2f(481.7,403.9+i);

glVertex2f(467.7,401.7+i);

glVertex2f(454.8,400.0+i);

glVertex2f(479.0,402.8+i);

glVertex2f(415.1,397.8+i);

glVertex2f(397.8,387.8+i);

glVertex2f(381.7,381.7+i);

glVertex2f(366.7,375.1+i);

glVertex2f(350.5,368.8+i);

glVertex2f(334.4,369.5+i);

glVertex2f(322.6,367.7+i);

glVertex2f(305.4,375.3+i);

glVertex2f(292.5,383.9+i);

glVertex2f(274.2,395.7+i);

glVertex2f(259.1,401.1+i);

glVertex2f(241.9,396.8+i);

glVertex2f(221.5,393.5+i);

glVertex2f(197.8,378.5+i);

glVertex2f(186.0,374.8+i);

glVertex2f(67.7,392.5+i);

glVertex2f(51.6,388.2+i);

glVertex2f(33.3,380.6+i);

glVertex2f(18.3,374.2+i);

glVertex2f(5.4,371.0+i);

glEnd();

glFlush();

glutSwapBuffers();}

void waves1(int i){

glClearColor(1,1,1,1);

glBegin(GL\_POLYGON);

glColor3f(0.0,1.3,1.3);

glVertex2f(0,500-i);

glVertex2f(5.4,492.8-i);

glVertex2f(10,485.2-i);

glVertex2f(12,453.9-i);

glVertex2f(14,428.3-i);

glVertex2f(15.1,300.9-i);

glVertex2f(32.3,336.0-i);

glVertex2f(50.5,318-i);

glVertex2f(59.5,343.9-i);

glVertex2f(71.0,387.8-i);

glVertex2f(81.7,407.5-i);

glVertex2f(100,380.6-i);

glVertex2f(115.1,428.0-i);

glVertex2f(146.2,416.1-i);

glVertex2f(168.8,402.2-i);

glVertex2f(372.0,443.0-i);

glVertex2f(397.8,424.7-i);

glVertex2f(417.2,388.2-i);

glVertex2f(441.9,377.4-i);

glVertex2f(473.1,389.0-i);

glVertex2f(494.6,405.4-i);

glVertex2f(512,500-i);

glEnd();

glFlush();

glutSwapBuffers();

glColor3f(0.0,0.0,0.0);

display\_string(200,150,tname2,2);

glEnd();

glFlush();

glutSwapBuffers();}

void third\_page(){

int j=30;

for(int i=0;i<=60;i+=1){

if(k=='f')break;

else{

i=i+5;

waves(i);

glFlush();

for(int k=0;k<=10000000;k++);

waves1(j);

j=j+30;

glFlush();

for(int l=0;l<=80000000;l++);

}}}

void fourth\_page(){

GLint r=4;

glClear(GL\_COLOR\_BUFFER\_BIT);

glClearColor(1,1,1,1);

glColor3f(1,1,1);

glBegin(GL\_QUAD\_STRIP);

glColor3f(0.35,0.6,0.25);

glVertex2f(0,0);

glVertex2f(0,150);

glVertex2f(500,0);

glVertex2f(500,150);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,1.3,1.3);

glVertex2f(0,300);

glVertex2f(0,500);

glVertex2f(500,500);

glVertex2f(500,250);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.7,0.7,0.7);

glVertex2f(225,455);

glVertex2f(240,470);

glVertex2f(252,480);

glVertex2f(270,485);

glVertex2f(280,480);

glVertex2f(290,470);

glVertex2f(300,460);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.7,0.7,0.7);

glVertex2f(400,460);

glVertex2f(410,470);

glVertex2f(420,479);

glVertex2f(430,480);

glVertex2f(440,473);

glVertex2f(450,470);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.75,0.6,0.2);

glVertex2f(0,230);

glVertex2f(0,300);

glVertex2f(500,250);

glVertex2f(500,120);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.67,0.67,0.67);

glVertex2f(0.0,120.0);

glVertex2f(0,230);

glVertex2f(500,230);

glVertex2f(500,120);

glEnd();

glBegin(GL\_LINES);

glColor3f(0,0,0);

glVertex2f(0,120);

glVertex2f(500,120);

glVertex2f(0,230);

glVertex2f(500,230);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(80,173);

glVertex2f(80,177);

glVertex2f(110,173);

glVertex2f(110,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(160,173);

glVertex2f(160,177);

glVertex2f(190,173);

glVertex2f(190,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(240,173);

glVertex2f(240,177);

glVertex2f(270,173);

glVertex2f(270,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(330,173);

glVertex2f(330,177);

glVertex2f(360,173);

glVertex2f(360,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(410,173);

glVertex2f(410,177);

glVertex2f(440,173);

glVertex2f(440,177);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(1,1,1);

glVertex2f(490,173);

glVertex2f(490,177);

glVertex2f(520,173);

glVertex2f(520,177);

glEnd();

glColor3f(0,0,0);

glBegin(GL\_POINTS);

glPointSize(0.3);

glVertex2f(55,352);

glEnd();

glBegin(GL\_QUAD\_STRIP);

glColor3f(0.5,0,0);

glVertex2f(230,310);

glVertex2f(265,310);

glVertex2f(220,330);

glVertex2f(280,320);

glVertex2f(265,325);

glVertex2f(265,310);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,1.3,1.3);

glVertex2f(240,310);

glVertex2f(237,320);

glVertex2f(260,350);

glVertex2f(240,320);

glVertex2f(243,310);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(150,35);

glVertex2f(155,35);

glVertex2f(155,30);

glVertex2f(150,30);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(160,40);

glVertex2f(165,40);

glVertex2f(165,35);

glVertex2f(160,35);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(167,42);

glVertex2f(172,42);

glVertex2f(172,37);

glVertex2f(167,37);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(165,45);

glVertex2f(170,45);

glVertex2f(170,42);

glVertex2f(165,42);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(165,70);

glVertex2f(170,70);

glVertex2f(170,65);

glVertex2f(165,65);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(163,75);

glVertex2f(167,75);

glVertex2f(167,71);

glVertex2f(163,71);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(160,70);

glVertex2f(164,70);

glVertex2f(164,65);

glVertex2f(160,65);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,0.0,0.0);

glVertex2f(157,75);

glVertex2f(162,75);

glVertex2f(162,71);

glVertex2f(157,71);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.255,0.192,0.203);

glVertex2f(400,50);

glVertex2f(400,75);

glVertex2f(475,75);

glVertex2f(475,50);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.7,0.35,0.8);

glVertex2f(415,75);

glVertex2f(430,85);

glVertex2f(440,85);

glVertex2f(455,75);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.210,0.106,0.30);

glVertex2f(375,35);

glVertex2f(400,75);

glVertex2f(415,95);

glVertex2f(400,100);

glVertex2f(360,40);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.210,0.106,0.30);

glVertex2f(385,70);

glVertex2f(380,73);

glVertex2f(370,88);

glVertex2f(395,90);

glEnd();

circle\_draw(420,50,r);

circle\_draw(465,50,r);

glVertex2f(135,90);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(1.0,1.0,0.0);

glVertex2f(173,50);

glVertex2f(135,30);

glVertex2f(135,90);

glVertex2f(173,55);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.5,0.3,0.0);

glVertex2f(118,37);

glVertex2f(120,55);

glVertex2f(128,53);

glVertex2f(125,33);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.5,0.3,0.0);

glVertex2f(145,55);

glVertex2f(145,70);

glVertex2f(160,62);

glEnd();

//door

glBegin(GL\_POLYGON);

glColor3f(0.5,0.3,0);

glVertex2f(220,40);

glVertex2f(220,60);

glVertex2f(230,60);

glVertex2f(230,40);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(200,80);

glVertex2f(225,100);

glVertex2f(220,95);

glVertex2f(227,90);

glVertex2f(222,85);

glVertex2f(223,75);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0,0,0);

glVertex2f(250,80);

glVertex2f(235,98);

glVertex2f(230,95);

glVertex2f(233,90);

glVertex2f(229,85);

glVertex2f(235,80);

glVertex2f(223,75);

glEnd();

//broken tree

glBegin(GL\_POLYGON);

glColor3f(0.53,0.25,0.12);

glVertex2f(470,230);

glVertex2f(400,215);

glVertex2f(470,210);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.0,1.0,0.0);

glVertex2f(400,215);

glVertex2f(435,250);

glVertex2f(390,245);

glVertex2f(380,210);

glVertex2f(390,180);

glEnd();

glColor3f(0.0,0.0,0.0);

display\_string(200,150,tname3,2);

display\_string(30,490,s1,2);

display\_string(30,480,s2,3);

display\_string(30,470,s3,3);

display\_string(30,460,s4,3);

display\_string(30,430,s5,3);

glEnd();

glFlush();

glutSwapBuffers();}

void key(unsigned char k,int x,int y)

{switch(k){

case 'i':instructions();

break;

case 'b':second\_page();

break;

case 'd':third\_page();

break;

case 'a':fourth\_page();

break;

case 'e':exit(0);

}}

void display(void){

glClearColor(0.8, 0.8, 0.8, 0.8);

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(1.0,0.0,0.0);

display\_string(230,400,pname,1);

display\_string(230,300,done,1);

glColor3f(0,0,1);

display\_string(180,200,sname1,1);

display\_string(200,200,sname2,1);

display\_string(215,150,sname3,1);

glColor3f(0.1,0.1,0.1);

display\_string(220,50,sname5,1);

glColor3f(0.5,.6,.1);

display\_string(280,180,sname5,1);

glFlush();

glutSwapBuffers();}

int main(int argc,char \*\*argv)

{

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_DOUBLE|GLUT\_RGB);

glutInitWindowSize(500,500);

glutCreateWindow("Tsunami");

glutKeyboardFunc(key);

glutDisplayFunc(display);

myinit();

glutMainLoop();

}