**TUTORIAL 4 Solutions**

**Question 1**

#include <stdio.h>

int isEven(int X);

int main()

{

int IN,OUT,ite;

for (ite = 1; ite <= 10; ite++)

{

printf("Enter an integer: ");

scanf("%d", &IN);

OUT = isEven(IN);

if (OUT == 1)

{

printf("This is an Even integer\n");

}

else

{

printf("This is an Odd integer\n");

}

}

return 0;

}

int isEven(int X)

{

int remainder;

remainder = X % 2;

if (remainder == 0)

{

return 1;

}

else

{

return 0;

}

}

**Question 2**

#include <stdio.h>

void RecDisp(int width,int height);

int main()

{

int side1,side2;

printf("Enter the width of the rectangle: ");

scanf("%d", &side1);

printf("Enter the height of the rectangle: ");

scanf("%d", &side2);

RecDisp(side1, side2);

return 0;

}

void RecDisp(int width, int height)

{

int row, col;

for (row = 1; row <= height; row++)

{

for (col = 1; col <= width; col++)

{

printf("\*");

}

printf("\n");

}

}

**Question 3**

#include <stdio.h>

float Largest(float,float,float,float);

int main()

{

float P, Q, R, S, Max;

printf("Enter the 1st float value: ");

scanf("%f", &P);

printf("Enter the 2nd float value: ");

scanf("%f", &Q);

printf("Enter the 3rd float value: ");

scanf("%f", &R);

printf("Enter the 4th float value: ");

scanf("%f", &S);

Max=Largest(P, Q, R, S);

printf("The largest float value is %f\n", Max);

return 0;

}

float Largest(float A, float B, float C, float D)

{

if (A > B && A > C && A > D)

{

return A;

}

else if (B > A && B > C && B > D)

{

return B;

}

else if (C > A && C > B && C > D)

{

return C;

}

else if (D > A && D > B && D > C)

{

return D;

}

}

**Question 4**

#include <stdio.h>

#include <math.h>

double Distance(double x1, double y1, double x2, double y2);

int main()

{

double x1, x2, y1, y2, dist;

printf("Enther the x coordinate of the first point: ");

scanf("%lf", &x1);

printf("Enther the y coordinate of the first point: ");

scanf("%lf", &y1);

printf("Enther the x coordinate of the second point: ");

scanf("%lf", &x2);

printf("Enther the y coordinate of the second point: ");

scanf("%lf", &y2);

dist = Distance(x1, y1, x2, y2);

printf("The distance between the 2 points is %.2f\n", dist);

return 0;

}

double Distance(double x1, double y1, double x2, double y2)

{

double TD;

TD = sqrt(pow((x2 - x1), 2) + pow((y2 - y1), 2));

return TD;

}

**Question 5**

#define \_CRT\_SECURE\_NO\_WARNINGS

#include <stdio.h>

#include <math.h>

float Charges(float h);

int main()

{

float h1, h2, h3, p1, p2, p3, totalh, totalp;

printf("Enter the number of hours parked for car 1: ");

scanf("%f", &h1);

p1 = Charges(h1);

printf("Enter the number of hours parked for car 2: ");

scanf("%f", &h2);

p2 = Charges(h2);

printf("Enter the number of hours parked for car 3: ");

scanf("%f", &h3);

p3 = Charges(h3);

totalh = h1 + h2 + h3;

totalp = p1 + p2 + p3;

printf("\nCar\tHours\tCharge\n");

printf("1\t%.1f\t%.2f\n", h1, p1);

printf("2\t%.1f\t%.2f\n", h2, p2);

printf("3\t%.1f\t%.2f\n", h3, p3);

printf("TOTAL\t%.1f\t%.2f\n", totalh, totalp);

return 0;

}

float Charges(float h)

{

//Calculation of charge per day

float ChargePerCar;

if (h <= 3)

{

ChargePerCar = 2.0;

}

else if (h <= 24)

{

ChargePerCar = 2.0 + 0.5 \* ceil(h - 3.0);

}

// Maximum charge per day cap at $10

if (ChargePerCar > 10)

{

ChargePerCar = 10;

}

return ChargePerCar;

}

**Question 6**

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int Decision(int X, int guess);

int main()

{

int X, guess, YN;

srand(time(NULL));

X = 1 + rand() % 1000;

printf("I have a number between 1 and 1000.\nCan you guess my number?\nPlease type your first guess:\n");

scanf("%d", &guess);

while (1)

{

YN = Decision(X, guess);

if (YN == 0)

{

break;

}

else

{

X = 1 + rand() % 1000;

printf("I have a number between 1 and 1000.\nCan you guess my number?\nPlease type your first guess:\n");

scanf("%d", &guess);

}

}

return 0;

}

int Decision(int X, int guess)

{

int YN;

while (1)

{

if (guess == X)

{

printf("Excellent! You guessed the number which is %d!\nWould you like to play again (Press 1 to continue and 0 to exit)? ", X);

scanf("%d", &YN);

break;

}

else if (guess < X)

{

printf("Too low. Try again.\n");

scanf("%d", &guess);

}

else if (guess > X)

{

printf("Too high. Try again.\n");

scanf("%d", &guess);

}

}

return YN;

}