**Assignment - 7**

**(Loops And Pattern Programming)**

1. **Write a program to print the Alphabets (A, B, C, D, E, F, G, H) using pattern programming logic?**

Ans: public class Question\_1 {

public static void main(String[] args) {

int n = 11;

// Code for A

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

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j > 0 && j < (n - 1) / 2 || j == 0 && i > 0 || j == (n - 1) / 2 && i > 0 || i == (n - 1) / 2 && j <= (n - 1) / 2) {

System.*out*.print("\* ");

}else {

System.*out*.print(" ");

}

}

// Code for B

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j < (n - 1) / 2 ||

j == 0 ||

i == (n - 1) / 2 && j < (n - 1) / 2 ||

i == (n - 1) && j < (n - 1) / 2 ||

j == (n - 1) / 2 && i > 0 && i < (n - 1) && j != i) {

System.*out*.print("\* ");

}else {

System.*out*.print(" ");

}

}

// Code for C

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j > 0 && j <= (n-1)/2 ||

j == 0 && i >0 && i != (n-1)||

i == (n-1) && j > 0 && j <= (n-1)/2) {

System.*out*.print("\* ");

} else{

System.*out*.print(" ");

}

}

// Code for D

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j < (n - 1) / 2 || j == 0 || j == (n - 1)/2 && i > 0 && i < n-1 || i == n - 1 && j < (n - 1)/2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

// Code for E

for(int j = 0; j <= n-1; j++){

if(i == 0 && j <= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 ||

i == (n - 1) && j <= (n-1)/2 ||

j == 0){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// Code for F

for(int j = 0; j <= n-1; j++ ){

if(i == 0 && j <= (n-1)/2 ||

j == 0 ||

i == (n-1)/2 && j <= (n-1)/2){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// Code for G

for(int j = 0; j <= n-1; j++){

if(i == 0 && j <= (n-1)/2 ||

j == 0 ||

j == 2 && i >= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 && j > 1 ||

j == (n-1)/2 && i >= (n-1)/2 ||

i == n-1 && j <= 2){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// Code for H

for(int j = 0; j <= n-1; j++){

if(i == (n-1)/2 && j <= (n-1)/2||

j == 0 ||

j == (n-1)/2 ) {

System.*out*.print("\* ");

} else{

System.*out*.print(" ");

}

}

System.*out*.println();

}

}

}

**2. Write a program to print Triangle using star pattern programming logic?**

Ans: public class Question\_2 {

public static void main(String [] args){

int n = 11;

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

for(int j = 0; j <= n-1; j++){

if(i+j == (n-1)/2 ||

j-i == (n-1)/2 || i == (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

System.*out*.println();

}

}

}

**3. Write a program to print the following pattern?**

**/\***   **\* \* \* \* \* \* \* \* \* \* \***

**\* \* \* \* \* \* \* \* \* \***

**\* \* \* \* \* \* \* \***

**\* \* \* \* \* \***

**\* \* \* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \***

**\* \* \* \* \* \* \* \* \* \* \***

**\*/**

Ans: public class Question\_3 {

public static void main(String [] args){

int n = 11;

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

for(int j = 0; j <= n-1; j++){

if(i == 0 || i == n-1 || j == 0 || j == n-1 ||

i+j <= (n-1)/2 ||

j-i >= (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

System.*out*.println();

}

}

}

**4. Write a program to print PW skills using pattern programming?**

Ans: public class Question\_4 {

public static void main(String [] args){

int n = 11;

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

// for P

for(int j = 0; j <= n-1; j++){

if(i == 0 && j <= (n-1)/2 || j == 0 ||

i == (n-1)/2 && j <= (n-1)/2 ||

j == (n-1)/2 && i <= (n-1)/2){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for W

for(int j = 0; j <= n-1; j++){

if(j == 0 && i <= (n-1)/2 ||

i + j == (n-1)/2 || j-i == (n-1)/2 || j == n-1 && i <= (n-1) / 2){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for S

for(int j = 0; j <= n-1; j++){

if(i == 0 && j >0 && j <= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 ||

i == n-1 && j < (n-1)/2 ||

j == 0 && i > 0 && i <= (n-1)/2 ||

j == (n-1)/2 && i >= (n-1)/2 && i < n-1){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for K

for(int j = 0; j <= n-1; j++){

if( j == 0 ||

i + j == (n-1)/2 ||

i - j == (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for I

for(int j = 0; j <= n-1; j++){

if(i == 0 ||

i == (n-1) || j == (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for L

for(int j = 0; j <= n-1; j++){

if(j == 0 ||

i == (n-1) && j <= (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for L

for(int j = 0; j <= n-1; j++){

if(j == 0 ||

i == (n-1) && j <= (n-1)/2 ){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for S

for(int j = 0; j <= n-1; j++){

if(i == 0 && j >0 && j <= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 ||

i == n-1 && j < (n-1)/2 ||

j == 0 && i > 0 && i <= (n-1)/2 ||

j == (n-1)/2 && i >= (n-1)/2 && i < n-1){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

System.*out*.println();

}

}

}

**5. Write a program to print your full name using pattern programming logic.**

**// Name is ANURAG VERMA:**

Ans: public class Question\_5 {

public static void main(String[] args) {

int n = 11;

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

// for A

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j > 0 && j < (n - 1) / 2 || j == 0 && i > 0 || j == (n - 1) / 2 && i > 0 || i == (n - 1) / 2 && j <= (n - 1) / 2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

// for N

for (int j = 0; j <= n - 1; j++) {

if (j == 0 || j == n - 1 || i == j) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for U

for (int j = 0; j <= n - 1; j++) {

if (j == 0 || j == n - 1 || i == n - 1) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for R

for (int j = 0; j <= n - 1; j++) {

if (j == 0 ||

i == 0 && j < (n - 1) / 2 ||

j == (n - 1) / 2 && i < (n - 1) / 2 ||

i == (n - 1) / 2 && j <= (n - 1) / 2 ||

i - j == (n - 1) / 2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

// for A

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j > 0 && j < (n - 1) / 2 || j == 0 && i > 0 || j == (n - 1) / 2 && i > 0 || i == (n - 1) / 2 && j <= (n - 1) / 2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

// for G

for(int j = 0; j <= n-1; j++){

if(i == 0 && j <= (n-1)/2 ||

j == 0 ||

j == 2 && i >= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 && j > 1 ||

j == (n-1)/2 && i >= (n-1)/2 ||

i == n-1 && j <= 2){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for V

for (int j = 0; j <= n - 1; j++) {

if (i == j && j < (n - 1) / 2 || i + j == n-1 && i <= (n-1)/2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for E

for(int j = 0; j <= n-1; j++){

if(i == 0 && j <= (n-1)/2 ||

i == (n-1)/2 && j <= (n-1)/2 ||

i == (n - 1) && j <= (n-1)/2 ||

j == 0){

System.*out*.print("\* ");

}else{

System.*out*.print(" ");

}

}

// for R

for (int j = 0; j <= n - 1; j++) {

if (j == 0 ||

i == 0 && j < (n - 1) / 2 ||

j == (n - 1) / 2 && i < (n - 1) / 2 ||

i == (n - 1) / 2 && j <= (n - 1) / 2 ||

i - j == (n - 1) / 2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

// for M

for (int j = 0; j <= n - 1; j++) {

if (j == 0 || j == n-1 || i == j && j < (n - 1) / 2 || i + j == n-1 && i <= (n-1)/2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

System.*out*.print(" ");

// for A

for (int j = 0; j <= n - 1; j++) {

if (i == 0 && j > 0 && j < (n - 1) / 2 || j == 0 && i > 0 || j == (n - 1) / 2 && i > 0 || i == (n - 1) / 2 && j <= (n - 1) / 2) {

System.*out*.print("\* ");

} else {

System.*out*.print(" ");

}

}

System.*out*.println();

}

}

}