//Pascals Triangle

#include<stdio.h>

#include<conio.h>

void main()

{

int i,j,space,rows,coef=1;

clrscr();

printf("PLEASE ENTER NUMBER OF ROWS:");

scanf("%d",&rows);

for(i=0;i<rows;i++)

{

for(space=1;space<rows-i;space++)

printf(" ");

for(j=0;j<=i;j++)

{

if(i==0||j==0)

coef=1;

else

coef=coef\*(i-j+1)/j;

printf("%4d",coef);

}

printf("\n");

}

getch();

}

IT1 //rows =4

for(i=0;i<rows;i++) //i=0,rows=4, 0<4 true

{

IIT1

for(space=1;space<rows-i;space++)

//space=1,rows=4,i=0 space(1)<4-0=4,true

{

printf(" "); //one blank space printed

//space++=space+1=1+1=2

}

IIT2

for(space=1;space<rows-i;space++)

//space=2,rows=4, space(2)<4-0=4,true

{

printf(" "); //one+one blank space printed

//space++=space+1=2+1=3

}

IIT3

for(space=1;space<rows-i;space++)

//space=3,rows=4, space(3)<4-0=4,true

{

printf(" "); //one+one+one blank space printed

//space++=space+1=3+1=4

}

IIT4

for(space=1;space<rows-i;space++)

//space=4,rows=4, space()<4-0=4,false

//it will go out of loop to next statement

SIIT1

for(j=0;j<=i;j++) //j=0,i=0, 0<=0 true

{

if(i==0||j==0) //i=j=0, true

coef=1; //coef=1

else

coef=coef\*(i-j+1)/j; //else part not visited

printf("%4d",coef); //3 spaces followed by 1

//j++=0+1=1

}

SIIT2

for(j=0;j<=i;j++) //j=1,i=0, 1<=0 false

//control goes to next statement

printf("\n"); //cursor moves to next line

//outer loop ends here i++ will take place

//i=i+1=0+1=1

}

IT2 //rows =4

for(i=0;i<rows;i++) //i=1,rows=4, 1<4 true

{

IIT1

for(space=1;space<rows-i;space++)

//space=1,rows=4,i=1 space(1)<4-1=3,true

{

printf(" "); //one blank space printed

//space++=space+1=1+1=2

}

IIT2

for(space=1;space<rows-i;space++)

//space=2,rows=4, space(2)<4-1=3,true

{

printf(" "); //one+one blank space printed

//space++=space+1=2+1=3

}

IIT3

for(space=1;space<rows-i;space++)

//space=3,rows=4, space(3)<4-0=3,false

//it will go out of loop to next statement

SIIT1

for(j=0;j<=i;j++) //j=0,i=1, 0<=1 true

{

if(i==0||j==0) //i=1,j=0, true

coef=1; //coef=1

else

coef=coef\*(i-j+1)/j; //else part not visited

printf("%4d",coef); //2 spaces followed by 1

//j++=0+1=1

}

SIIT2

for(j=0;j<=i;j++) //j=1,i=1, 1<=1 true

{

if(i==0||j==0) //i=1,j=1, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=1(defined at start of program),i=j=1

//coef=1 \* (1-1+1)/1=1

printf("%4d",coef); //2 spaces followed by 1, and other 1

//j++=1+1=2

}

SIIT3

for(j=0;j<=i;j++) //j=2,i=1, 2<=1 false

//control goes to next statement

printf("\n"); //cursor moves to next line

//outer loop ends here i++ will take place

//i=i+1=1+1=2

}

IT3 //rows =4

for(i=0;i<rows;i++) //i=2,rows=4, 2<4 true

{

IIT1

for(space=1;space<rows-i;space++)

//space=1,rows=4,i=2 space(1)<4-2=2,true

{

printf(" "); //one blank space printed

//space++=space+1=1+1=2

}

IIT2

for(space=1;space<rows-i;space++)

//space=2,rows=4, space(2)<4-2=2,false

//it will go out of loop to next statement

SIIT1

for(j=0;j<=i;j++) //j=0,i=2, 0<=2 true

{

if(i==0||j==0) //i=2,j=0, true

coef=1; //coef=1

else

coef=coef\*(i-j+1)/j; //else part not visited

printf("%4d",coef); //1 space followed by 1

//j++=0+1=1

}

SIIT2

for(j=0;j<=i;j++) //j=1,i=2, 1<=2 true

{

if(i==0||j==0) //i=2,j=1, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=1(defined at start of program),i=2,j=1

//coef=1 \* (2-1+1)/1=2

printf("%4d",coef); //1 spaces followed by 1, and then 2

//j++=1+1=2

}

SIIT3

for(j=0;j<=i;j++) //j=2,i=2, 2<=2 true

{

if(i==0||j==0) //i=2,j=2, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=2,i=2,j=2

//coef=2 \* (2-2+1)/2=1

printf("%4d",coef); //1 spaces followed by 1, then 2, again 1

//j++=2+1=3

}

SIIT4

for(j=0;j<=i;j++) //j=3,i=2, 3<=2 false

//next statement control will go to

printf("\n"); //cursor moves to next line

//outer loop ends here i++ will take place

//i=i+1=2+1=3

}

IT4 //rows =4

for(i=0;i<rows;i++) //i=3,rows=4, 3<4 true

{

IIT1

for(space=1;space<rows-i;space++)

//space=1,rows=4,i=3 space(1)<4-3=1,false

//it will go out of loop to next statement

SIIT1

for(j=0;j<=i;j++) //j=0,i=3, 0<=3 true

{

if(i==0||j==0) //i=3,j=0, true

coef=1; //coef=1

else

coef=coef\*(i-j+1)/j; //else part not visited

printf("%4d",coef); //no space followed by 1

//j++=0+1=1

}

SIIT2

for(j=0;j<=i;j++) //j=1,i=3, 1<=3 true

{

if(i==0||j==0) //i=3,j=1, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=1(defined at start of program),i=3,j=1

//coef=1 \* (3-1+1)/1=3

printf("%4d",coef); //1, and then 3

//j++=1+1=2

}

SIIT3

for(j=0;j<=i;j++) //j=2,i=3, 2<=3 true

{

if(i==0||j==0) //i=3,j=2, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=3,i=3,j=2

//coef=3 \* (3-2+1)/2=3

printf("%4d",coef); //1, then 3, again 3

//j++=2+1=3

}

SIIT4

for(j=0;j<=i;j++) //j=3,i=3, 3<=3 true

{

if(i==0||j==0) //i=3,j=3, false

coef=1; // else part is visited

else

coef=coef\*(i-j+1)/j; //coef=3,i=3,j=3

//coef=3 \* (3-3+1)/3=1

printf("%4d",coef); //1, then 3, again 3,followd by 1

//j++=3+1=4

}

SIIT5

for(j=0;j<=i;j++) //j=4,i=3, 4<=3 false

//next statement control will go to

printf("\n"); //cursor moves to next line

//outer loop ends here i++ will take place

//i=i+1=3+1=4

}

IT4 //rows =4

for(i=0;i<rows;i++) //i=4,rows=4, 4<4 false

program will terminate here