**Q. Write an Algorithm and Program for generating the following pattern: Pattern1**

**#**

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Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = 1

Repeat

Print “#”

**column\_counter** += 1

Until **column\_counter** <= **row\_counter**

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the height of the pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0:  
 print()  
else:  
 for row\_counter in range(1,Height+1):  
 for column\_counter in range(1,row\_counter+1):  
 print(**"#"**, end=**" "**)  
 print()

**Q. Write an Algorithm and Program for generating the following pattern: Pattern2**

**1**

**1 2**

**1 2 3**

**1 2 3 4**

Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = 1

Repeat

Print **column\_counter**

**column\_counter** += 1

Until **column\_counter** <= **row\_counter**

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the height of the pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0:  
 print()  
else:  
 for row\_counter in range(1,Height+1):  
 for column\_counter in range(1,row\_counter+1):  
 print(column\_counter, end=**" "**)  
 print()

**Q. Write an Algorithm and Program for generating the following pattern: Pattern3**

**a**

**a b**

**a b c**

**a b c d**

Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = 1

Repeat

Print chr(96+**column\_counter**)

**column\_counter** += 1

Until **column\_counter** <= **row\_counter**

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the height of the pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0:  
 print()  
else:  
 for row\_counter in range(1,Height+1):  
 for column\_counter in range(1,row\_counter+1):  
 print(chr(96 + column\_counter), end=**" "**)  
 print()

**Q. Write an Algorithm and Program for generating the following pattern: Pattern4**

**1**

**2 1**

**3 2 1**

**4 3 2 1**

Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = **row\_counter**

Repeat

Print **column\_counter**

**column\_counter** -= 1

Until **column\_counter** >= 1

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the height of the pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0:  
 print()  
else:  
 for row\_counter in range(1,Height+1):  
 column\_counter = row\_counter  
 for column\_counter in range(row\_counter,0,-1):  
 print(column\_counter, end=**" "**)  
 print()

**Q. Write an Algorithm and Program for generating the following pattern: Pattern5**

**1 1 1 1**

**2 2 2**

**3 3**

**4**

Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = (**Height** + 1) – **row\_counter**

Repeat

Print **row\_counter**

**column\_counter** -= 1

Until **column\_counter** >= 1

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the height of the pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0:  
 print()  
else:  
 for row\_counter in range(1,Height+1):   
 for column\_counter in range((Height + 1) - row\_counter,0,-1):  
 print(row\_counter, end=**" "**)  
 print()

**Q. Write an Algorithm and Program for generating the following pattern: Pattern6**

**\***

**\* \***

**\* \* \***

**\* \***

**\***

Algorithm

* Start
* Use variable **Height**, **row\_counter**, **column\_counter**
* Read **Height**
* if **Height** > 0:

**row\_counter** = 1

Repeat

**column\_counter** = 1

Repeat

Print **\***

**column\_counter** += 1

Until **column\_counter** <= **row\_counter**

**row\_counter** += 1

Until **row\_counter** <= **Height**

**row\_counter** = 1

Repeat

**column\_counter** = **Height** - **row\_counter**

Repeat

Print \*

**column\_counter** -= 1

Until **column\_counter** <= 1

**row\_counter** += 1

Until **row\_counter** <= **Height**

else

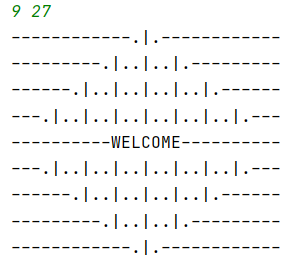
Print “Invalid Input”

* Stop

Python Program

Height = int(input(**"Enter the Height of the pyramid pattern : "**))  
if Height < 0:  
 print(**"Invalid Input"**)  
elif Height == 0 :  
 print()  
else:  
 for row\_counter in range(1, Height+1):  
 for column\_counter in range(1, row\_counter+1):  
 print(**"\*"**, end=**" "**)  
 print()  
 for row\_counter in range(1, Height+1):  
 for column\_counter in range(Height-row\_counter, 0, -1):  
 print(**"\*"**, end=**" "**)  
 print()

**Q. Write a Program for generating the following pattern: Pattern7**

****

Python Program

temp = list(map(int, input().split(**" "**)))  
n = temp[0]  
m = temp[1]  
for row\_counter in range(n // 2):  
 for column\_counter1 in range(((m - 1) // 2) - (3 \* row\_counter + 1)):  
 print(**"-"**, end=**""**)  
 for counter\_counter2 in range(2 \* row\_counter + 1):  
 print(**".|."**, end=**""**)  
 for column\_counter3 in range(((m - 1) // 2) - (3 \* row\_counter + 1)):  
 print(**"-"**, end=**""**)  
 print()  
for counter in range((m-7)//2):  
 print(**"-"**, end=**""**)  
print(**"WELCOME"**, end=**""**)  
for counter in range((m-7)//2):  
 print(**"-"**, end=**""**)  
print()  
for row\_counter in range(n // 2):  
 for column\_counter1 in range(3\*(row\_counter+1)):  
 print(**"-"**, end=**""**)  
 for counter\_counter2 in range(n - (2 \* row\_counter + 2)):  
 print(**".|."**, end=**""**)  
 for column\_counter3 in range(3\*(row\_counter+1)):  
 print(**"-"**, end=**""**)  
 print()