Assignment-2

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U20CS110

Q1.

```c
Ans:

#include <stdio.h>

int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```

Debugging screenshots

Screenshot 1 (top) — VS Code debugging `1.c`:
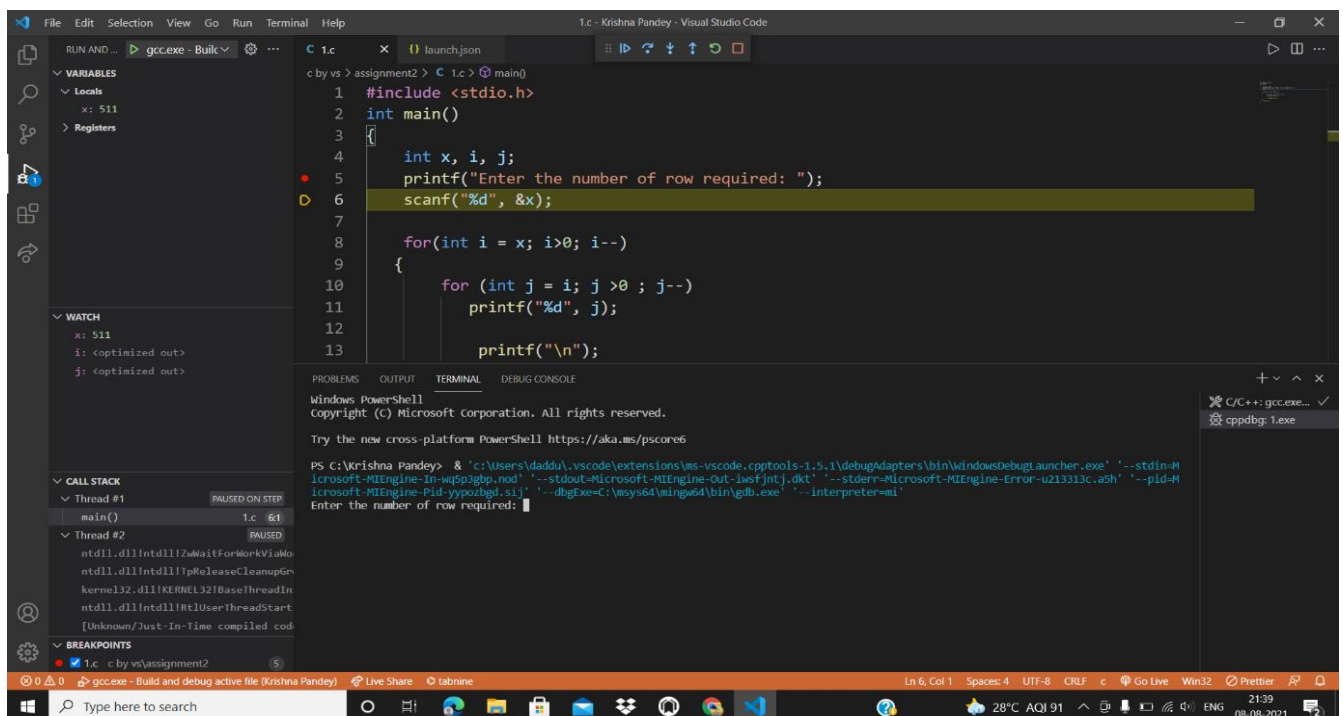
```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```

Terminal:
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey>  & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=M
icrosoft-MIEngine-In-5t40ab0y.3ol' '--stdout=Microsoft-MIEngine-Out-wt0koxlf.ui0' '--stderr=Microsoft-MIEngine-Error-votdjt2f.30u' '--pid=M
icrosoft-MIEngine-Pid-v55j1jmz.uwo' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of row required: 5
```

Screenshot 2 (bottom) — VS Code debugging `1.c`:

```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```
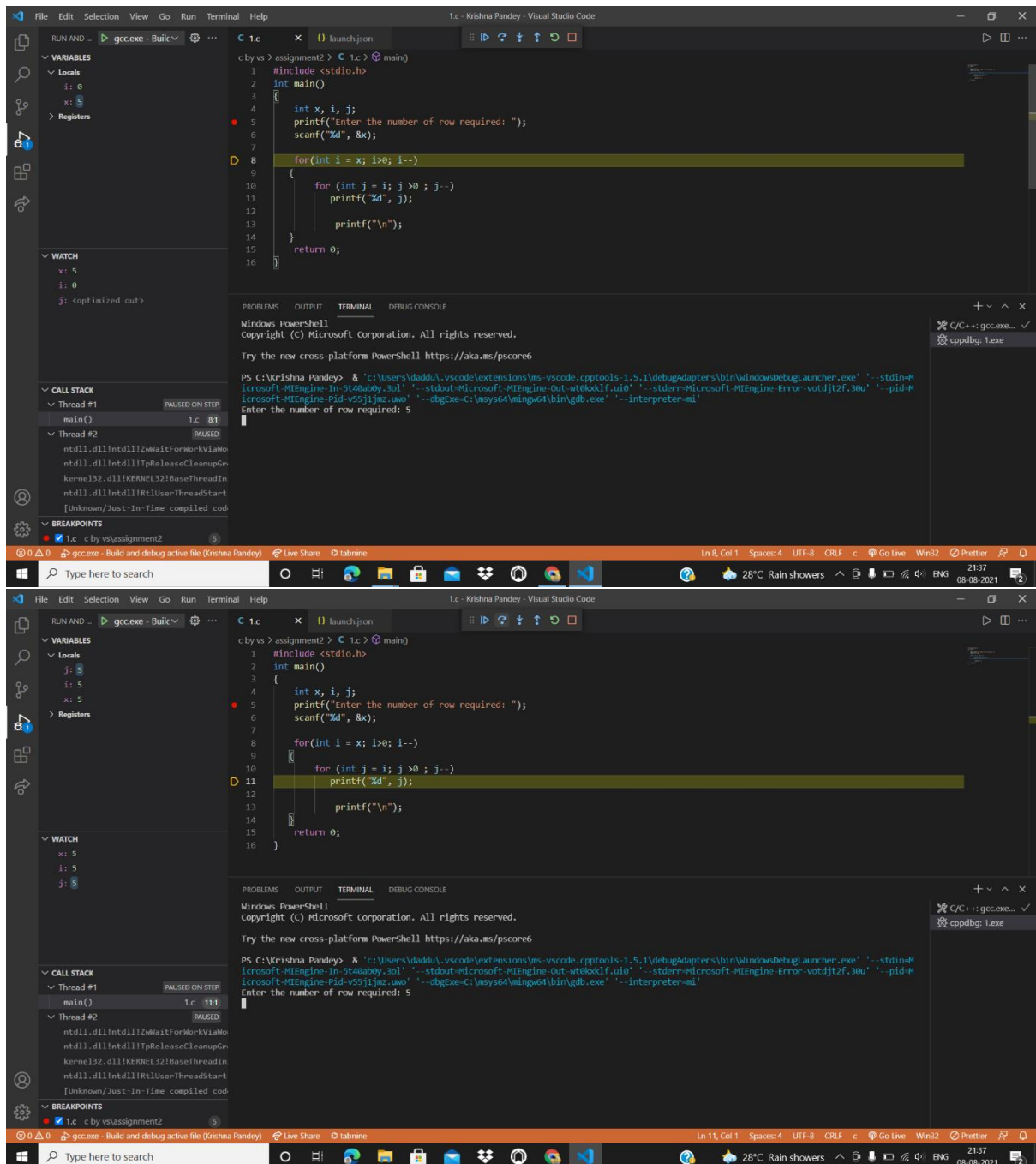
Terminal:
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey>  & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=M
icrosoft-MIEngine-In-5t40ab0y.3ol' '--stdout=Microsoft-MIEngine-Out-wt0koxlf.ui0' '--stderr=Microsoft-MIEngine-Error-votdjt2f.30u' '--pid=M
icrosoft-MIEngine-Pid-v55j1jmz.uwo' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of row required: 5
```

```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```

Terminal:

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey>  & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-5t40ab0y.3ol' '--stdout=Microsoft-MIEngine-Out-wt0koxlf.ui0' '--stderr=Microsoft-MIEngine-Error-votdjt2f.30u' '--pid=Microsoft-MIEngine-Pid-v55j1jmz.uwo' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of row required: 5
54321
```

Second screenshot:

```
Enter the number of row required: 5
54321
4321
```

```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```
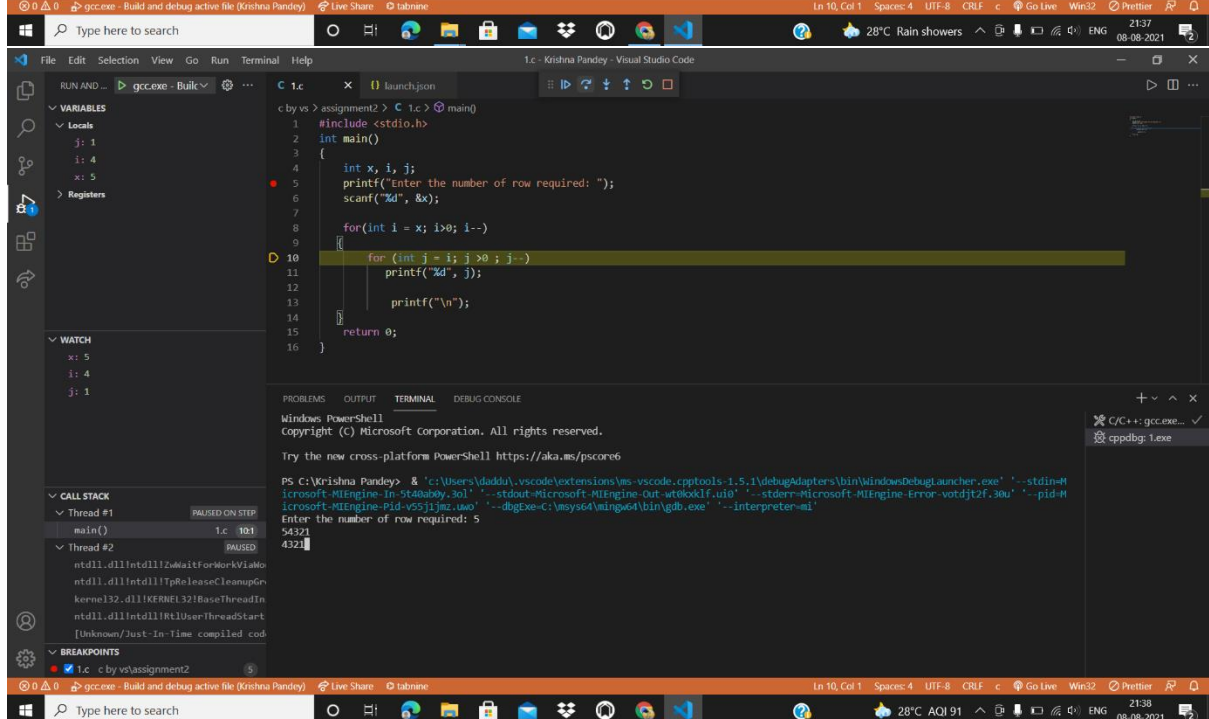
Enter the number of row required: 5
54321
4321
321


```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```

Enter the number of row required: 5
54321
4321
321
21

```c
#include <stdio.h>
int main()
{
    int x, i, j;
    printf("Enter the number of row required: ");
    scanf("%d", &x);

    for(int i = x; i>0; i--)
    {
        for (int j = i; j >0 ; j--)
            printf("%d", j);

            printf("\n");
    }
    return 0;
}
```
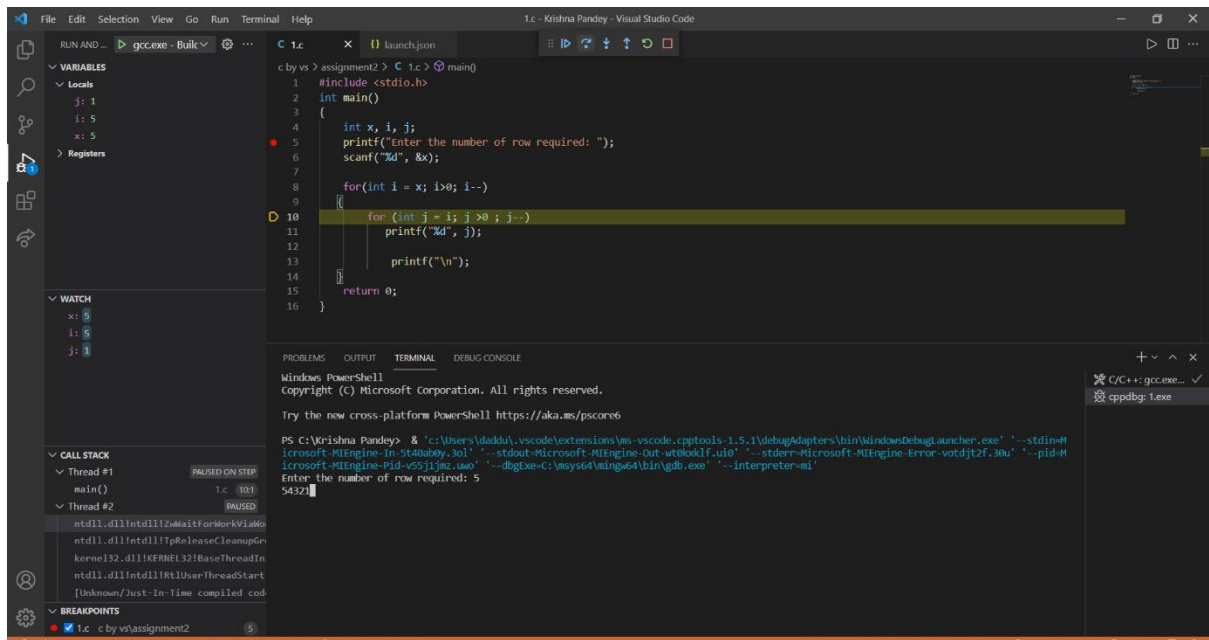
Terminal output:

```
Enter the number of row required: 5
54321
4321
321
21
1
```

Q2.

```
Ans:

#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```
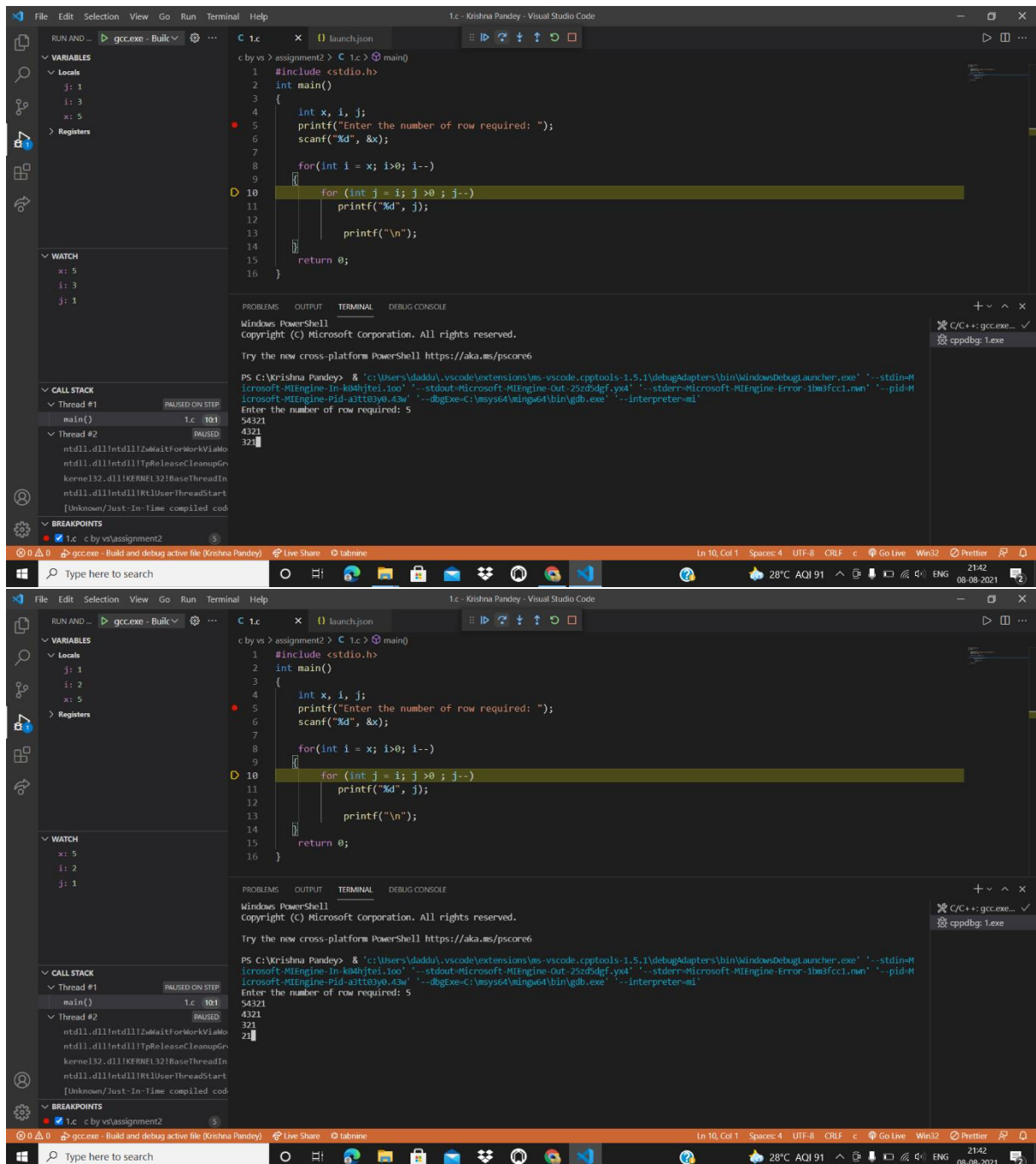
Screenshot 1 (top):

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Terminal:
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey> & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=M
icrosoft-MIEngine-In-nqspvagu.bto' '--stdout=Microsoft-MIEngine-Out-i1fncgvz.oxa' '--stderr=Microsoft-MIEngine-Error-teice1zz.quk' '--pid=M
icrosoft-MIEngine-Pid-ioqw4mjq.1su' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of rows: 6
```
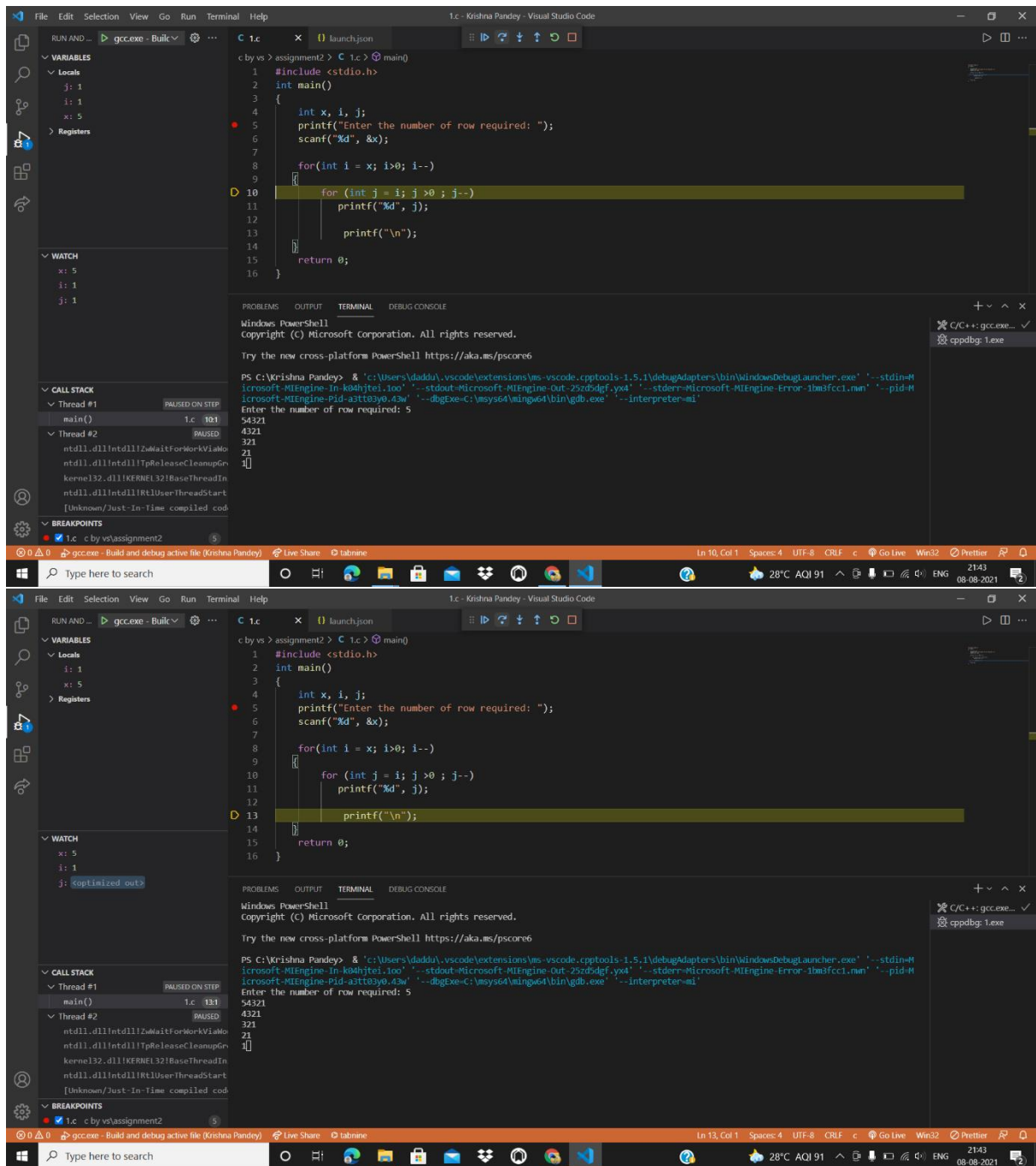
Screenshot 2 (bottom): same code

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Terminal:
```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey> & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=M
icrosoft-MIEngine-In-nqspvagu.bto' '--stdout=Microsoft-MIEngine-Out-i1fncgvz.oxa' '--stderr=Microsoft-MIEngine-Error-teice1zz.quk' '--pid=M
icrosoft-MIEngine-Pid-ioqw4mjq.1su' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of rows: 6
                1
```

The following C source code is shown in both editor windows:

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```
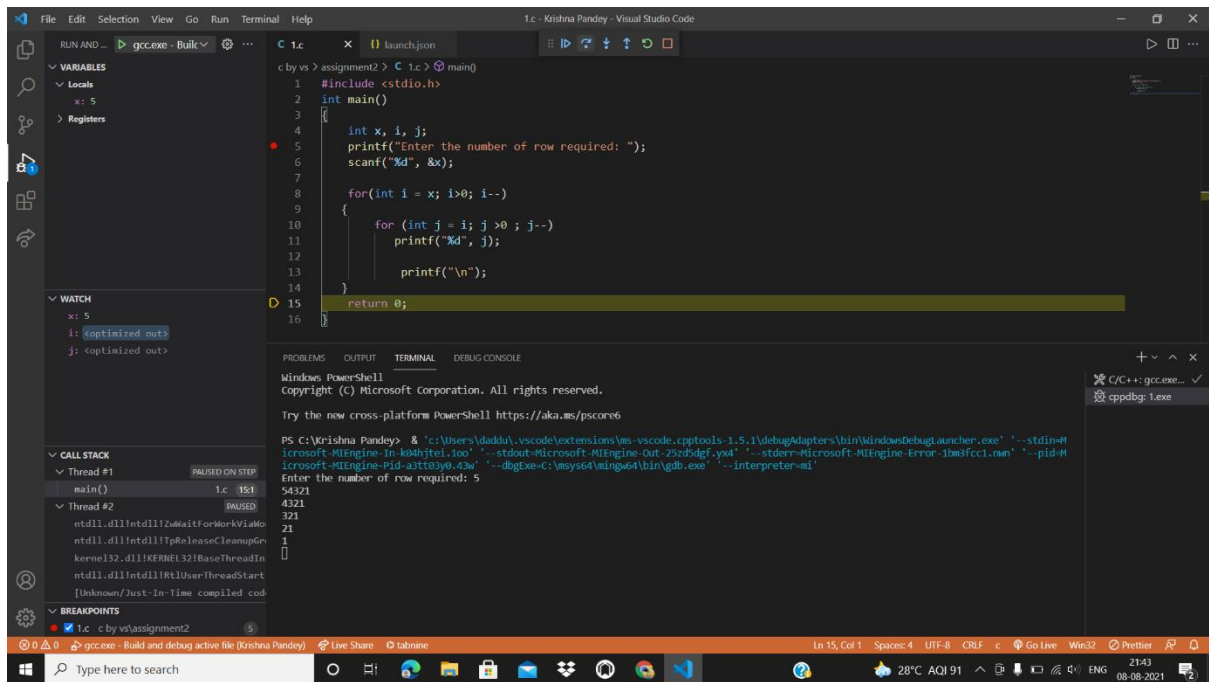
```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 0; i < rows; i++)
    {
        for (space = 1; space <= rows - i; space++)
            printf("  ");
        for (j = 0; j <= i; j++)
        {
            if (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Screenshot 1 (top):

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Terminal output:
```
Enter the number of rows: 6
          1
        1  1
      1  2  1
    1  3  3  1
  1  4  6  4  1
1  5 10 10  5  1
```


Screenshot 2 (bottom):

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Terminal output:
```
Enter the number of rows: 6
          1
        1  1
      1  2  1
    1  3  3  1
  1  4  6  4  1
1  5 10 10  5  1
```

File   Edit   Selection   View   Go   Run   Terminal   Help

RUN AND ...   gcc.exe - Build

C 2.c

c by vs > assignment2 > C 2.c > ⊗ main()

```c
#include <stdio.h>
int main()
{
    int rows, space, i, j, coef = 1;
    printf("Enter the 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 (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

VARIABLES
Locals
  rows: 6
  space: 2
  i: 6
  j: 6
  coef: 1
Registers

WATCH
  rows: 6
  space: 2
  i: 6
  j: 6
  coef: 1

CALL STACK
Thread #1   PAUSED ON STEP
  main()   2.c   21:1
Thread #2   PAUSED
  ntdll.dll!ntdll!ZwWaitForWorkViaWo
  ntdll.dll!ntdll!TpReleaseCleanupGr
  kernel32.dll!KERNEL32!BaseThreadIn
  ntdll.dll!ntdll!RtlUserThreadStart

BREAKPOINTS
  ☑ 1.c   c by vs\assignment2   4
  ☑ 2.c   c by vs\assignment2   4

PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Krishna Pandey> & 'c:\Users\daddu\.vscode\extensions\ms-vscode.cpptools-1.5.1\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=M
icrosoft-MIEngine-In-m0uhnjb3.3fj' '--stdout=Microsoft-MIEngine-Out-ragi0wq5.gap' '--stderr=Microsoft-MIEngine-Error-vcd23oik.4bh' '--pid=M
icrosoft-MIEngine-Pid-pwdslne3.d42' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Enter the number of rows: 6
          1
        1   1
      1   2   1
    1   3   3   1
  1   4   6   4   1
1   5 10 10   5   1

C/C++: gcc.exe... ✓
cppdbg: 2.exe

⊗ 0 ⚠ 0   gcc.exe - Build and debug active file (Krishna Pandey)   Live Share   tabnine   Ln 21, Col 1   Spaces: 4   UTF-8   CRLF   c   Go Live   Win32   Prettier