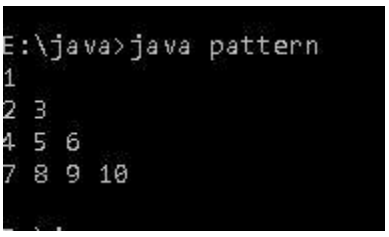
Week 2 OOJ Lab

Q3. Pattern of Numbers

Code:

```
public class pattern {


   public static void main(String[] args) {
      int rows = 4, number = 1;


      for(int i = 1; i <= rows; i++) {


         for(int j = 1; j <= i; j++) {
            System.out.print(number + " ");
            ++number;
         }


         System.out.println();
      }
   }
}
```

Output:



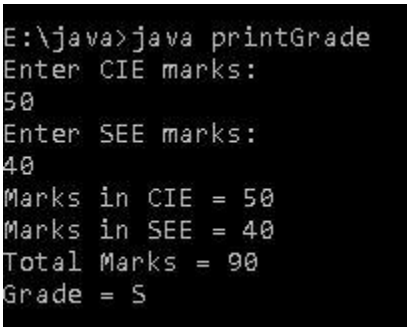
Q4. SEE & CIE

CODE:

```
import java.util.Scanner;
class printGrade{
	public static void main(String[] args){
		Scanner s = new Scanner(System.in);
		int cieMarks;
		int seeMarks;
		char grade;
		System.out.println("Enter CIE marks: ");
		cieMarks = s.nextInt();
		System.out.println("Enter SEE marks: ");
		seeMarks = s.nextInt();
		if((cieMarks + seeMarks) >= 90)
			grade = 'S';
		else if((cieMarks + seeMarks) >= 80 && (cieMarks + seeMarks) < 90)
			grade = 'A';
		else if((cieMarks + seeMarks) >= 70 && (cieMarks + seeMarks) < 80)
			grade = 'B';
	  else if((cieMarks + seeMarks) >= 60 && (cieMarks + seeMarks) < 70)
			grade = 'C';
		else if((cieMarks + seeMarks) >= 50 && (cieMarks + seeMarks) < 60)
			grade = 'D';
		else if((cieMarks + seeMarks) >= 40 && (cieMarks + seeMarks) < 50)
			grade = 'E';
		else if((cieMarks + seeMarks) < 40)
```

```
                grade = 'F';
            else
                grade = 'O';
            System.out.println("Marks in CIE = "+ cieMarks);
            System.out.println("Marks in SEE = "+ seeMarks);
          System.out.println("Total Marks = " + (cieMarks+seeMarks));
            System.out.println("Grade = "+ grade);
        }
}
```

Output:



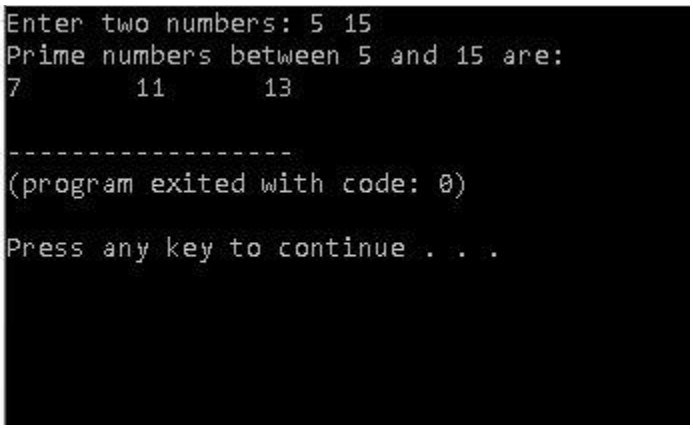
Q5. Prime Numbers

CODE:

```
#include <stdio.h>

int main ()
{
  int num1, num2, i, j, flag;

  printf("Enter two numbers: ");
  scanf("%d %d", &num1, &num2);

  printf("Prime numbers between %d and %d are:\n", num1, num2);

  for (i = num1 + 1; i < num2; ++i)
  {
    flag = 0;
    for (j = 2; j <= i/2; ++j)
    {
      if (i % j == 0)
      {
        flag = 1;
        break;
      }
    }
    if (flag == 0)
       printf("%d\t", i);
  }
```

```
  return 0;
}
```

Output:



Q6. Area and Volume

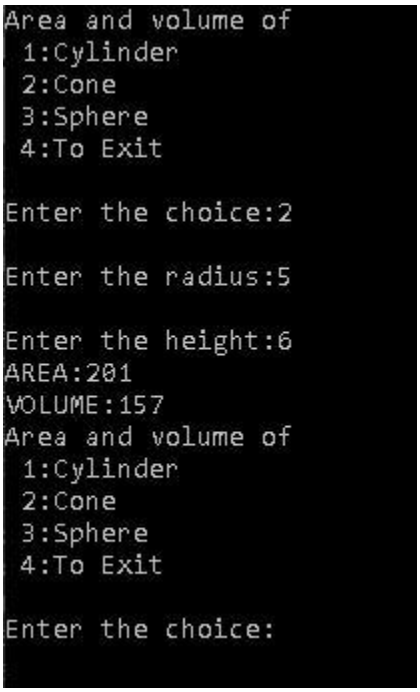
CODE:

```
#include <stdio.h>
#include <math.h>
#include <stdlib.h>
 int main()
 {
    int z,r,h;
    float pi=3.14;
    while(z)
    {
       printf("Area and volume of \n 1:Cylinder\n 2:Cone\n 3:Sphere\n 4:To Exit");
       printf("\n\nEnter the choice:");
       scanf("%d",&z);
       printf("\nEnter the radius:");
```

```
scanf("%d",&r);
printf("\nEnter the height:");
scanf("%d",&h);
switch(z)
{
   int A,V;
   case 1:
   A=2*pi*r*h+2*pi*r*r;
   V=pi*r*r*h;
   printf("AREA:%d\n",A);
   printf("VOLUME:%d\n",V);
   break;
   case 2:
   A=pi*(r)*(r+sqrt(h*h+r*r));
   V=pi*r*r*h/3;
   printf("AREA:%d\n",A);
   printf("VOLUME:%d\n",V);
   break;
   case 3:
   A=4*pi*r*r;
   V=(4/3)*pi*r*r*r;
   printf("AREA:%d\n",A);
   printf("VOLUME:%d\n",V);
   break;
   case 4:
   exit(0);
   break;
```

```
    }
  }
}
```

Output:



Q7. Courses

CODE:

```
#include <stdio.h>
struct course
{
   char name[20];
};
int main()
```

```
{
struct course s[3][100];
int n,i,j,c[3]={0,0,0},choice;
char cn[3][10]={"IOT","JAVA","DS"};
printf("Enter number of students:\n");
scanf("%d",&n);
printf("Enter student details:\n");
for(i=0;i<n;i++)
{
printf("-----------------\n");
printf("Press code to select course:\n1.INTERNET OF THINGS\n2.ADVANCED JAVA AND J2EE\n3.ADVANCED DATA STRUCTURES\n");
scanf("%d",&choice);
if(choice<0||choice>3)
{
printf("Invalid choice!\n");
continue;
}
printf("Enter name of the student %d\n",i+1);
scanf("%s",&s[choice-1][c[choice-1]].name);
c[choice-1]++;
}
disp:
for(i=0;i<3;i++)
{
   if(c[i]>=0)
   {
```

```
        printf("List of students of course %s:\n",cn[i]);
        for(j=0;j<c[i];j++)
        {
            printf("%d) %s \n",j+1,s[i][j].name);
        }
        printf("Number of students in the course %s is %d\n",cn[i],j);
    }
}


for(i=0;i<3;i++)
{
    if(c[i]<3&&c[i]!=-1)
    {
        printf("Number of people less than 3 in course %s,so the students in the course %s please change the course:\n",cn[i],cn[i]);
        for(j=0;j<c[i];j++)
        {
            printf("Enter course code:\n");
            scanf("%d",&choice);
            if(choice==i+1){
                printf("Enter other course!\n");
                continue;
            }
            printf("Enter name:\n");
            scanf("%s",&s[choice-1][c[choice-1]].name);
            c[choice-1]++;
```

```
      }

      n=c[i];
      c[i]=-1;
      goto disp;
    }
}

return 0;
}
```

Output:

```
Enter number of students:
2
Enter student details:
-----------------
Press code to select course:
1.INTERNET OF THINGS
2.ADVANCED JAVA AND J2EE
3.ADVANCED DATA STRUCTURES
2
Enter name of the student 1
Ram
-----------------
Press code to select course:
1.INTERNET OF THINGS
2.ADVANCED JAVA AND J2EE
3.ADVANCED DATA STRUCTURES
3
Enter name of the student 2
Shyam
List of students of course IOT:
Number of students in the course IOT is 0
List of students of course JAVA:
1) Ram
Number of students in the course JAVA is 1
List of students of course DS:
1) Shyam
Number of students in the course DS is 1
```