

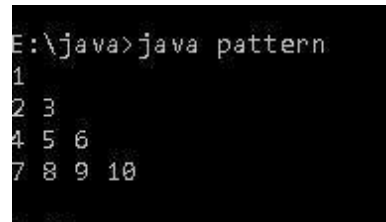
Week 2 OOI Lab

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:



```
E:\java>java pattern  
1  
2 3  
4 5 6  
7 8 9 10
```

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';

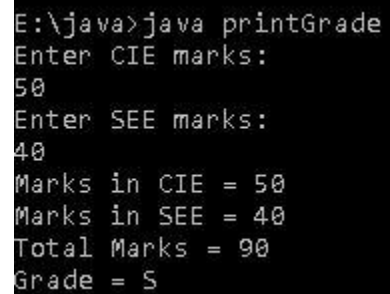
        else if((cieMarks + seeMarks) >= 40 && (cieMarks + seeMarks) < 50)

            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:



```
E:\java>java printGrade  
Enter CIE marks:  
50  
Enter SEE marks:  
40  
Marks in CIE = 50  
Marks in SEE = 40  
Total Marks = 90  
Grade = S
```

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;
```

```
            }
```

```
        }
```

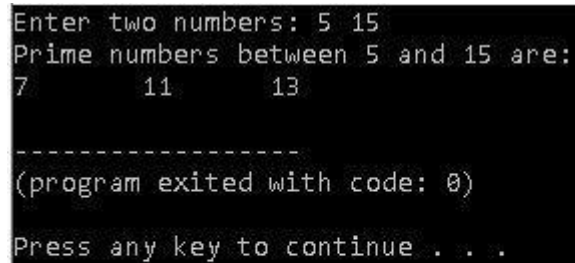
```
        if (flag == 0)
```

```
            printf("%d\t", i);
```

```
    }
```

```
    return 0;  
}
```

Output:



```
Enter two numbers: 5 15  
Prime numbers between 5 and 15 are:  
7      11      13  
  
-----  
(program exited with code: 0)  
Press any key to continue . . .
```

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:
         $A=\pi*(r)*(r+\text{sqrt}(h*h+r*r))$ ;
         $V=\pi*r*r*h/3$ ;
        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:

```
Area and volume of  
1:Cylinder  
2:Cone  
3:Sphere  
4:To Exit  
  
Enter the choice:2  
  
Enter the radius:5  
  
Enter the height:6  
AREA:201  
VOLUME:157  
Area and volume of  
1:Cylinder  
2:Cone  
3:Sphere  
4:To Exit  
  
Enter the choice:
```

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&&cn[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

```