

NAME –KASYAP VARANASI

REGISTRATION NUMBER –20BCE7315

Q1. Write a program to display a number in words using stack.

CODE-

```
import java.util.Scanner;
```

```
public class q1 {
```

```
    public static void main(String[] args) {
```

```
        Scanner kb = new Scanner(System.in);
```

```
        System.out.println("Enter a 4 digit number.");
```

```
        int number = kb.nextInt();
```

```
        //Seperate number into digits.
```

```
        int digit4 = number%10;
```

```
        number = number/10;
```

```
        int digit3 = number%10;
```

```
number = number/10;
```

```
int digit2 = number%10;
```

```
number = number/10;
```

```
int digit1 = number%10;
```

```
number = number/10;
```

```
switch (digit1)
```

```
{
```

```
case 1: System.out.print("One ");break;
```

```
case 2: System.out.print("Two "); break;
```

```
case 3: System.out.print("Three "); break;
```

```
case 4: System.out.print("Four "); break;
```

```
case 5: System.out.print("Five "); break;
```

```
case 6: System.out.print("Six "); break;
```

```
case 7: System.out.print("Seven "); break;
```

```
case 8: System.out.print("Eight "); break;
```

```
case 9: System.out.print("Nine "); break;
```

```
case 0: System.out.print("Zero "); break;
```

```
default: System.out.print(""); break;
```

```
}
```

```
switch (digit2)
```

```
{
```

```
case 1: System.out.print("One ");break;
```

```
case 2: System.out.print("Two "); break;
case 3: System.out.print("Three "); break;
case 4: System.out.print("Four "); break;
case 5: System.out.print("Five "); break;
case 6: System.out.print("Six "); break;
case 7: System.out.print("Seven "); break;
case 8: System.out.print("Eight "); break;
case 9: System.out.print("Nine "); break;
case 0: System.out.print("Zero "); break;
default: System.out.print(""); break;
}
```

```
switch (digit3)
```

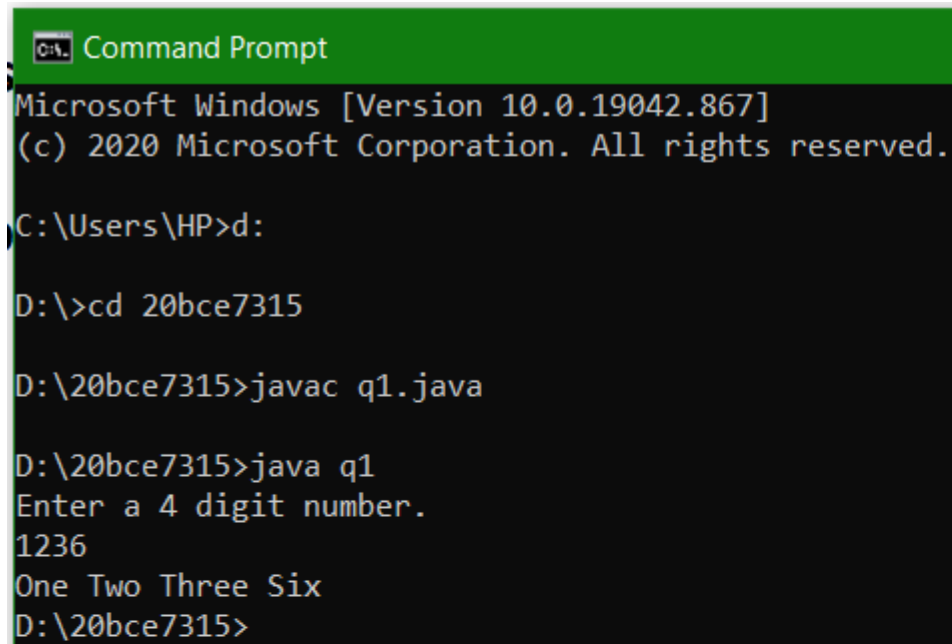
```
{
case 1: System.out.print("One ");break;
case 2: System.out.print("Two "); break;
case 3: System.out.print("Three "); break;
case 4: System.out.print("Four "); break;
case 5: System.out.print("Five "); break;
case 6: System.out.print("Six "); break;
case 7: System.out.print("Seven "); break;
case 8: System.out.print("Eight "); break;
case 9: System.out.print("Nine "); break;
case 0: System.out.print("Zero "); break;
```

```
        default: System.out.print(""); break;
    }

    switch (digit4)
    {
        case 1: System.out.print("One ");break;
        case 2: System.out.print("Two "); break;
        case 3: System.out.print("Three "); break;
        case 4: System.out.print("Four "); break;
        case 5: System.out.print("Five "); break;
        case 6: System.out.print("Six "); break;
        case 7: System.out.print("Seven "); break;
        case 8: System.out.print("Eight "); break;
        case 9: System.out.print("Nine "); break;
        case 0: System.out.print("Zero "); break;
        default: System.out.print(""); break;
    }
}

}
```

Output-



```
C:\> Command Prompt
Microsoft Windows [Version 10.0.19042.867]
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C:\Users\HP>d:

D:\>cd 20bce7315

D:\20bce7315>javac q1.java

D:\20bce7315>java q1
Enter a 4 digit number.
1236
One Two Three Six
D:\20bce7315>
```

Q2. Write a program to convert infix to postfix expression. It may be noted that your program should validate the infix expression.

```
import java.util.*;
```

```
class InfixtoPostfix
```

```
{
static char stack[] = new char[20];
static int top=-1;
static Scanner sc=new Scanner(System.in);
static void push(char ch)
{
top++;
stack[top]=ch;
}
static char pop()
{
char ch=stack[top];
top--;
return ch;
}
static int op(char ch)
{
switch(ch)
{
case'+':
case'-':return 1;
case'/':
```

```
case '*':  
case '%':return 2;  
}  
return 0;  
}  
static boolean isalpha(char ch)  
{  
if((ch>=65&&ch<=90) || (ch>=97&&ch<=122))  
return true;  
else  
return false;  
}  
public static void main(String args[])  
{  
String post=" ",infix;  
System.out.println("enter a infix string");  
infix=sc.nextLine();  
int i=0;  
while(i<infix.length())  
{  
if(isalpha(infix.charAt(i)))  
post+=infix.charAt(i);
```

```
else if(infix.charAt(i)=='(')
push(infix.charAt(i));
else if(infix.charAt(i)=='')
{
while(stack[top]!='(')
{
post+=pop();
}
pop();
}
else
{
if(top==-1 || stack[top]=='(')
push(infix.charAt(i));
else
{
while(op(infix.charAt(i))<=op(stack[top])&&stack[top]!='(')
{
post+=pop();
if(top==-1)
break;
}
}
```



```
push(infix.charAt(i));
```

```
}
```

```
}
```

```
i++;
```

```
}
```

```
while(top!=-1)
```

```
post+=pop();
```

```
System.out.println("The equivalent postfix expression of infix  
expression is: "+post);
```

```
}
```

```
}
```

OUTPUT-

Command Prompt

Microsoft Windows [Version 10.0.19042.867]

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C:\Users\HP>d:

D:\>cd 20bce7315

D:\20bce7315>javac InfixtoPostfix.java

D:\20bce7315>java InfixtoPostfix

enter a infix string

a+b+c*(d-f)*f+z*(l+g)

The equivalent postfix expression of infix expression is: ab+cdf-*f*+zlg+*+

D:\20bce7315>