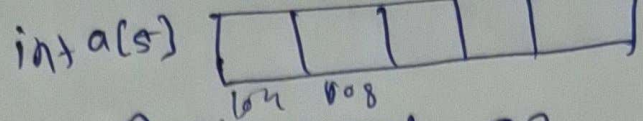

Assignment-03

1) Implement a stack using an array.

```
public class stack1 {

    psvm static final int MAX=10;
         int top;

         int a[] = new int[MAX];

    stack {
            top = -1; → underflow [means stack empty]
    }

    boolean isEmpty() {
            return (top<0);
    }

    // insertion in stack

boolean push(int x)
{
    if(top >=(MAX-1))
    {
      s.o.pln("stack overflow");
      return false;
    }
a[++top] = x;
return true;
}
```

Q.2)

opening → Push in stack
closing → Check in with top

```
public class Parenthesischeck {

    P svm(String[] args) {

        String str = "{()}[]";
```

It store character object.

```
// Stack<Character> st = new Stack<>();

for (int i=0 ; i < str.length() ; i++){

if(str.charAt(i) == '{' || str.charAt(i) == '[' ||
str.charAt(i) == '('){

        st.push(str.charAt(i));
}
```

checks stack is not empty

```
else if (!st.empty() && (

(str.charAt(i) == ']' && st.peek() == '[') ||

(str.charAt(i) == '}' && st.peek() == '{') ||

(str.charAt(i) == ')' && st.peek() == '('))){

    st.pop();
}
else{ st.push(str.charAt(i));
}
```

```
if (st.isEmpty())
    S.o.pln("Balanced");
} else
    S.o.pln("Not Balanced");
}
}
```

st.push(str.charAt(i));

st.pop();

Str → String

Q.3) Reverse a string using stack

Program →

```
import java.util.stack;
public class Reversestring<
public static void main (string arg[]){
        String str = "hello";
    Steck <character> st = new Stack<>();
//Push all characters of the string into the stack
    for(int i=0; i<str.length(); i++){
        st.push(str.charAt(i);
    }
//Create new array to store revesed string
    Char[] reversed = new Char[str.length()];
    int j=0;
for character from the start to reverse the string
    while (!st.isEmpty()){
        reversedStr[j++] =st.pop();
    } // Print the reverse string
    S.o.pln("Reversed String: " + new String(revesed));
}
}
```

Imp often

// S.o.pln(reversedstr) not use directly, bcoz arrays in java don't have toString() method.

To print the content of the char[] properly, u need to convert it to string.