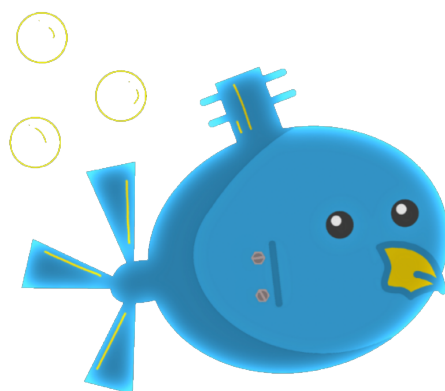


CALIFORNIA STATE UNIVERSITY, LOS
ANGELES

**Module Level Outcome 2: *Discrete
Mathematics and Automata Theory***



ROBOSUB

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Question 3: Valid Parentheses

Problem: <https://leetcode.com/problems/valid-parentheses/>

Pseudocode

```
function ISVALID(s)                                ▷ Valid parentheses in string s
  A ← []                                           ▷ Create Stack
  for i ← 0, s.length - 1 do
    if s[i] = ( or s[i] = [ or s[i] = { then
      A.push(s[i])
    else if s[i] = ) or s[i] = ] or s[i] = } then
      if A.top ≠ ( or A.top ≠ [ or A.top ≠ { then
        break
      else
        A.pop()
      end if
    end if
  end for
  if A.empty() then
    return true
  else
    return false
  end if
end function
```

Code

```
class Solution {
public:
    bool isValid(std::string s) {
        std::stack<char> a;
        for (char c : s) {
            switch (c) {
                case '('):
                case '['):
                case '{':
                    a.push(c);
                    break;
                case ')':
```

```

        if (a.empty() || a.top() != '(') { return false; }
        a.pop();
        break;
    case (']'):
        if (a.empty() || a.top() != '[') { return false; }
        a.pop();
        break;
    case ('}'):
        if (a.empty() || a.top() != '{') { return false; }
        a.pop();
        break;
    }
}
return a.empty();
};

```

Question 4: Regular Expression Matching

Problem: <https://leetcode.com/problems/regular-expression-matching/>

Pseudocode

Code