

Component C. Personalized Project Reference.**Procedure:**

i.

```
function calculate(equationList, startingIndex, endingIndex) {
  var calcAns;
  for (var e = startingIndex; e < endingIndex; e++) {
    if (equationList[e] == "^") {
      calcAns = Math.pow(equationList[e-1], equationList[e+1]);
      for (var remE = 0; remE < 3; remE++) {
        removeItem(equationList, e-1);
      }
      insertItem(equationList, e-1, calcAns);
      e = 0;
    }
  }
  for (var md = startingIndex; md < endingIndex; md++) {
    if (equationList[md] == "x") {
      calcAns = (equationList[md-1])*(equationList[md+1]);
      for (var rem1Md = 0; rem1Md < 3; rem1Md++) {
        removeItem(equationList, md-1);
      }
      insertItem(equationList, md-1, calcAns);
      md = 0;
    } else if (equationList[md] == "/") {
      calcAns = (equationList[md-1])/(equationList[md+1]);
      for (var rem2Md = 0; rem2Md < 3; rem2Md++) {
        removeItem(equationList, md-1);
      }
      insertItem(equationList, md-1, calcAns);
      md = 0;
    }
  }
}
```

```

for (var md = startingIndex; md < endingIndex; md++) {
    if (equationList[md] == "x") {
        calcAns = (equationList[md-1])*(equationList[md+1]);
        for (var rem1Md = 0; rem1Md < 3; rem1Md++) {
            removeItem(equationList,md-1);
        }
        insertItem(equationList,md-1,calcAns);
        md = 0;
    } else if (equationList[md] == "/") {
        calcAns = (equationList[md-1])/(equationList[md+1]);
        for (var rem2Md = 0; rem2Md < 3; rem2Md++) {
            removeItem(equationList,md-1);
        }
        insertItem(equationList,md-1,calcAns);
        md = 0;
    }
}
for (var as = startingIndex; as < endingIndex; as++) {
    if (equationList[as] == "+") {
        calcAns = (equationList[as-1]) + (equationList[as+1]);
        for (var rem1As = 0; rem1As < 3; rem1As++) {
            removeItem(equationList,as-1);
        }
        insertItem(equationList,as-1,calcAns);
        as = 0;
    } else if (equationList[as] == "-") {
        calcAns = (equationList[as-1]) - (equationList[as+1]);
        for (var rem2As = 0; rem2As < 3; rem2As++) {
            removeItem(equationList,as-1);
        }
        insertItem(equationList,as-1,calcAns);
        as = 0;
    }
}
calcAns = Math.round(calcAns*1000000)/1000000;
return calcAns;
}

```

ii.

```

for (var c = 0; c < eqnList.length; c++) {
    var item = eqnList[c];
    var temp;
    for (var d = 0; d < num.length-1; d++) {
        if (item.substring(0,1) == (num[d])) {
            temp = item*1;
            removeItem(eqnList,c);
            insertItem(eqnList,c,temp);
        } else if (item.substring(0,1) == "-") {
            temp = item.substring(1,item.length)*1;
            temp = 0 - temp;
            removeItem(eqnList,c);
            insertItem(eqnList,c,temp);
        }
    }
}
ans = calculate(eqnList,0,eqnList.length);

```

List:

i.

```
var ogEquation = equation;
var eqnList = [];
var index = 0;
var ans;
```

ii.

```
function organize(equation) {
  var ogEquation = equation;
  var eqnList = [];
  var index = 0;
  var ans;
  for (var a = 1; a <= equation.length+1; a++) {
    for (var b = 0; b < num.length; b++) {
      if (equation.substring(index,a).includes(num[b])) {
        if (!(equation.substring(a,a+1) == "0" || equation.substring(a,a+1) == "1" || equation.substring(a,a+1) == "2" ||
        equation.substring(a,a+1) == "3" || equation.substring(a,a+1) == "4" || equation.substring(a,a+1) == "5" ||
        equation.substring(a,a+1) == "6" || equation.substring(a,a+1) == "7" || equation.substring(a,a+1) == "8" ||
        equation.substring(a,a+1) == "9" || equation.substring(a,a+1) == "." || equation.substring(a,a+1) == "-")) {
          && equation.substring(index,a) != "" {
            appendItem(eqnList,ogEquation.substring(index,a));
            index = a;
          }
        } else if (equation.substring(index,a).includes(operators[b]) && !equation.substring(a,a+1).includes(operators[b])) {
          appendItem(eqnList,ogEquation.substring(index,a));
          index = a;
        }
      }
    }
  }
}
```

```
if (eqnList.length == 1) {
  ans = eqnList[0];
  return ans;
}
for (var c = 0; c < eqnList.length; c++) {
  var item = eqnList[c];
  var temp;
  for (var d = 0; d < num.length-1; d++) {
    if (item.substring(0,1) == (num[d])) {
      temp = item*1;
      removeItem(eqnList,c);
      insertItem(eqnList,c,temp);
    } else if (item.substring(0,1) == "-") {
      temp = item.substring(1,item.length)*1;
      temp = 0 - temp;
      removeItem(eqnList,c);
      insertItem(eqnList,c,temp);
    }
  }
}
ans = calculate(eqnList,0,eqnList.length);
if (ans == "Infinity") {
  ans = "Number too large";
}
return ans;
}
```