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Section/Batch: C/C3

Subject: Web Technologies

Course Code: 2CS405

Practical: 6(A,B,C)

Question:

Java Script	
6.	<p>a. Write a JavaScript function that read an integer value and finds the factorial of the entered number.</p> <p>b. Create a JavaScript that merges two arrays without duplicating elements.</p> <p>c. Apply following validation rules to the student registration form designed in practical b</p> <ul style="list-style-type: none"> • First Name and Last Name should not be empty. • Name fields should accept letters only.

	<ul style="list-style-type: none"> • Email should be in the form of DDCCDDDD@nirmauni.ac.in, where D and C represent any digit and letter, respectively. • Password must be a minimum of eight characters long consisting of a combination of uppercase letter, lowercase letter, and digits. • Password and re-type password must be the same.
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6A]

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Factorial</title>

  <style>

    @import url('https://fonts.googleapis.com/css2?family=Poppins&display=swap');

    *
    {
      box-sizing: border-box;
      margin: 0;
      padding: 0;
      font-family: 'Poppins', sans-serif;
    }

    body
    {
      color: rgb(30, 30, 30);
      background-color: rgb(245, 245, 245);
      height: 100vh;
      display: flex;
      flex-direction: row;
      justify-content: center;
      align-items: center;
    }

    .container
    {
      height: 80%;
      width: 80%;
      display: flex;
      flex-direction: column;
      justify-content: center;
      align-items: center;
      background-color: rgb(254, 159, 50);
      border: 2px solid rgb(165, 82, 0);
      border-radius: 20px;
      filter: drop-shadow(0 0 100px rgb(255, 132, 0,0.5));
    }

    .box
    {
      display: flex;
      flex-direction: row;
```

```

        justify-content: center;
        align-items: center;
    }

    .input
    {
        background-color: white;
        border: hidden;
        padding: 20px;
        margin: 10px;
        border-radius: 20px;
        border: 2px solid rgb(255, 123, 0);
    }

    .button
    {
        background-color: rgb(237, 175, 116);
        border: hidden;
        padding: 20px;
        margin: 10px;
        border-radius: 20px;
        border: 2px solid rgb(165, 82, 0);
    }

    .button:hover
    {
        cursor: pointer;
        background-color: rgb(214, 131, 54);
    }

    #ans
    {
        color: rgba(42, 42, 42, 0.5);
    }

</style>

</head>

<body>

    <div class="container">

        <div class="box">

            <label for="fact" class="input"><b>Enter the number (Integer>=0) : </b></label>
            <input type="text" name="fact" class="input" id="number" placeholder="Eg: 5">
            <button type="submit" class="button" onclick="get_answer()">Get Answer!</button>

        </div>

```

```

<div class="box">

    <label for="answer" class="input"><b>Answer : </b></label>
    <div type="text" name="answer" class="input" id="ans" placeholder="Answer"
Here!</div>

</div>
</div>

<script>

function get_answer()
{
    let x = document.getElementById("number").value;
    x = parseInt(x);

    if(isNaN(x))
    x=0;

    let answer = 1;

    function fact(x)
    {
        if(x==0)
        {
            answer = answer*1;
            return ;
        }

        answer = x * answer;
        fact(x-1);

        return ;
    }

    fact(x);

    document.getElementById("ans").innerHTML=answer;
    document.getElementById("ans").style.color="rgba(30, 30, 30)";
    document.getElementById("ans").style.fontWeight = "800";
}
</script>

</body>
</html>

```

Output:

Enter the number (Integer >= 0) :

6

Get Answer!

Answer :

720

6B]

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Merge Arrays</title>

  <style>

    @import url('https://fonts.googleapis.com/css2?family=Poppins&display=swap');

    *
    {
      box-sizing: border-box;
      margin: 0;
      padding: 0;
      font-family: 'Poppins', sans-serif;
    }

    body
    {
      color: rgb(30, 30, 30);
      background-color: rgb(245, 245, 245);
      height: 100vh;
      display: flex;
      flex-direction: row;
      justify-content: center;
      align-items: center;
    }

    .container
    {
      height: 80%;
      width: 80%;
      display: flex;
      flex-direction: column;
      justify-content: center;
      align-items: center;
      background-color: rgb(4, 0, 64);
      border: 2px solid rgb(0, 0, 182);
      border-radius: 20px;
      filter: drop-shadow(0 0 100px rgba(0, 110, 255, 0.5));
    }

    .box
    {
      display: flex;
      flex-direction: row;
```

```

        justify-content: center;
        align-items: center;
        width: 100%;
    }

    .input
    {
        background-color: white;
        border: hidden;
        padding: 20px;
        margin: 10px;
        border-radius: 20px;
        border: 2px solid rgb(0, 0, 182);
        width: 45%;
    }

    .button
    {
        background-color: rgb(0, 183, 255);
        border: hidden;
        padding: 20px;
        margin: 10px;
        border-radius: 20px;
        border: 2px solid rgb(0, 0, 182);
        width: 30%;
    }

    .button:hover
    {
        cursor: pointer;
        background-color: rgb(0, 138, 224);
    }

    #ans
    {
        color: rgba(42, 42, 42, 0.5);
    }

</style>

</head>
<body>

    <div class="container">

        <div class="box">

            <label for="array1" class="input"><b>Enter the Array1 : </b></label>
            <input type="text" name="array1" class="input" id="array1" placeholder="Eg: 5,-
1,2,34,900,...">

```



```

</div>

<div class="box">

    <label for="array2" class="input"><b>Enter the Array2 : </b></label>
    <input type="text" name="array2" class="input" id="array2" placeholder="Eg: 87,-
190,3,34,930,...">

</div>

<div class="box">

    <label for="answer" class="input"><b>Answer : </b></label>
    <div type="text" name="answer" class="input" id="ans" placeholder="Answer
Here!</div>

</div>

<button type="submit" class="button" onclick="get_answer()">Get Answer!</button>

</div>

<script>

function get_answer()
{
    let a1 = document.getElementById("array1").value;
    let a2 = document.getElementById("array2").value;

    if(a1==" " && a2==" ")
    {
        document.getElementById("ans").innerHTML = "---";
        document.getElementById("ans").style.color = "rgb(30, 30, 30)";
        document.getElementById("ans").style.fontWeight = "800";
        return ;
    }
    else if(a1==" ")
    {
        document.getElementById("ans").innerHTML = a2;
        document.getElementById("ans").style.color = "rgb(30, 30, 30)";
        document.getElementById("ans").style.fontWeight = "800";
        return ;
    }
    else if(a2==" ")
    {
        document.getElementById("ans").innerHTML = a1;
        document.getElementById("ans").style.color = "rgb(30, 30, 30)";
        document.getElementById("ans").style.fontWeight = "800";
        return ;
    }

    a1 = a1.split(",");

```

```
a2 = a2.split(",");

let ans = [];

for(let i=0;i<a1.length;i++)
{
    ans.push(parseInt(a1[i]));
}

for(let i=0;i<a2.length;i++)
{
    if(!ans.includes(parseInt(a2[i])))
        ans.push(parseInt(a2[i]));
}

ans.sort(function(a, b)
{
    return a-b;
});

ans = ans.join(",");

document.getElementById("ans").innerHTML = ans;
document.getElementById("ans").style.color = "rgb(30, 30, 30)";
document.getElementById("ans").style.fontWeight = "800";
}

</script>
```

```
</body>
```

```
</html>
```

Output:

Enter the Array1 :	1,2,-4,6,1000
Enter the Array2 :	0,-3,2,6,100,1,7
Answer :	-4,-3,0,1,2,6,7,100,1000
<button>Get Answer!</button>	

6C]

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Sign Up</title>

  <style>

    @import url('https://fonts.googleapis.com/css2?family=Poppins&display=swap');

    *
    {
      box-sizing: border-box;
      margin: 0;
      padding: 0;
      font-family: 'Poppins', sans-serif;
    }

    body
    {
      background-color: rgb(30, 30, 30);
      height: auto;
      display: flex;
      flex-direction: row;
      align-items: center;
      justify-content: center;
      background:
        linear-gradient(230deg, #00ffff 20%, #08d9d600 0%) repeat scroll 0% 0%,
          linear-gradient(200deg, rgb(255, 0, 60) 50%, #cc2a5000 50%) repeat
scroll 100% 0%,
          linear-gradient(300deg, #ff9900 50%, #08d9d600 50%) repeat scroll
100% 0%,
          linear-gradient(110deg, #ffffff 20%, #08d9d600 0%) repeat scroll 100%
0%,
          linear-gradient(0deg, #f200ff 100%, #08d9d100 0%) repeat scroll 100%
0%;
    }

    .form-container
    {
      background-color: rgb(245, 245, 245);

      /* background: linear-gradient(45deg, #08D9D6 0%, #08d9d600 20%) repeat scroll 0%
0%,
          linear-gradient(200deg, #FF2E63 0%, #08d9d600 60%) repeat scroll 100%
0%,

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```
0%,
    linear-gradient(300deg, #FF9A00 0%, #08d9d600 20%) repeat scroll 100%
0%,
    linear-gradient(90deg, #ffffff 0%, #08d9d600 100%) repeat scroll 100%
0%,
    linear-gradient(0deg, #f200ff 0%, #08d9d600 100%) repeat scroll 100%
0%; */

width: 80%;
padding: 50px;
margin: 45px 0px;
border-radius: 20px;
filter: drop-shadow(0 0 1000px rgb(8, 217, 214,0.7));
}

.input
{
    background-color: rgb(30, 30, 30);
    color: rgb(245, 245, 245);
    padding: 20px 20px;
    border-radius: 20px;
    width: 100%;
    border: hidden;
}

::-webkit-calendar-picker-indicator
{
    background-color: white;
    padding: 5px;
    border-radius: 20px;
}

.icon
{
    font-size: 20px;
}

.three
{
    display: grid;
    grid-template-columns: 30px 1fr 1fr;
    gap: 10px;
    align-items: center;
    justify-content: center;
}

.two
{
    display: grid;
    grid-template-columns: 30px 1fr;
    gap: 10px;
    align-items: center;
    justify-content: center;
}
```

```
.two-equal
{
  display: grid;
  grid-template-columns: 30px 1fr 1fr;
  gap: 10px;
  align-items: center;
  justify-content: center;
}

.four
{
  display: grid;
  grid-template-columns: 20px 1fr 20px 1fr;
  gap: 20px;
  align-items: center;
  justify-content: center;
}

.four-gender
{
  display: grid;
  grid-template-columns: 30px 1fr 1fr 1fr;
  gap: 20px;
  align-items: center;
  justify-content: center;
}

.form
{
  display: grid;
  grid-template-columns: 1fr;
  gap: 10px;
}

a
{
  color: white;
  text-decoration: none;
}

a:hover
{
  text-decoration: underline;
}

.button1
{
  background-color: #f10175;
}
```

```

.button1:hover
{
    background-color: #d60168;
    cursor: pointer;
}

.button2
{
    background-color: #fa9922;
}

.button2:hover
{
    background-color: #e98203;
    cursor: pointer;
}

.point:hover
{
    cursor: pointer;
}

.error
{
    height: auto;
    color: rgb(189, 0, 0);
    /* padding and margin */
}

</style>

</head>
<body>

    <div class="form-container">

        <form action="https://www.google.com/" method="post" class="form" name="signup-form"
onsubmit="return validate_form()">

            <div class="three">
                <span class="icon"><ion-icon name="person-circle"></ion-icon></span>
                <span>
                    <input type="text" class="input" id="fname" name="fname"
placeholder="First Name*">
                </span>
                <span>
                    <input type="text" class="input" id="lname" name="lname"
placeholder="Last Name*">
                </span>
            </div>

            <div class="error" id="ename"></div>

```

```

        <div class="two">
            <span class="icon"><ion-icon name="mail"></ion-icon></span>
            <input type="email" name="email" id="email" class="input"
placeholder="Email*">
        </div>

        <div class="error" id="email"></div>

        <div class="three">
            <span class="icon"><ion-icon name="eye-off"></ion-icon></span>
            <span><input type="password" placeholder="Password*" class="input" id="pw"
name="pw"></span>
            <span><input type="password" placeholder="Retype Password*" class="input"
id="rpw" name="rpw"></span>
        </div>

        <div class="error" id="epw"></div>

        <div class="four">
            <span class="icon"><ion-icon name="balloon"></ion-icon></span>
            <span><input type="date" placeholder="Date of Birth" class="input point"
id="dob" name="dob"></span>
            <span class="icon"><ion-icon name="library"></ion-icon></span>
            <span>
                <select name="cyos" id="current-year" class="input point" id="cyos">
                    <option value="None" selected class="input">Select Year of
Study*</option>
                    <option value="1st Year">1st Year</option>
                    <option value="2nd Year">2nd Year</option>
                    <option value="3rd Year">3rd Year</option>
                    <option value="4th Year">4th Year</option>
                </select>
            </span>
        </div>

        <div class="error" id="ecyos"></div>

        <div class="four-gender">
            <span class="icon"><ion-icon name="transgender"></ion-icon></span>

            <div class="input">
                <input type="radio" id="male" class="point" name="Gender" value="Male">
                <label for="male">Male</label>
            </div>

            <div class="input">
                <input type="radio" id="female" class="point" name="Gender"
value="Female">
                <label for="female">Female</label>
            </div>

```



```

        <div class="input">
            <input type="radio" id="other" class="point" name="Gender" value="Other"
checked>
            <label for="other">Other</label>
        </div>
    </div>

    <div class="error" id="egender"></div>

    <div class="three">
        <span></span>
        <span class="left input link"><input type="checkbox" name="remember"
id="remember" class="point"> Remember Me</span>
        <span class="right input link"><a href="https://www.google.com/">Forgot
Password?</a></span>
    </div>

    <div class="error" id="elinks"></div>

    <div class="three">
        <span></span>
        <button type="reset" class="button1 input" id="reset">Reset</button>
        <button type="submit" class="button2 input" id="signup">Signup</button>
    </div>

</form>

</div>

<script type="module"
src="https://unpkg.com/ionicons@7.1.0/dist/ionicons/ionicons.esm.js"></script>
<script nomodule
src="https://unpkg.com/ionicons@7.1.0/dist/ionicons/ionicons.js"></script>

<script>

    let isokay = true;

    function seterror(id,error)
    {
        let error_box = document.getElementById(id);
        error_box.innerHTML = error;
        error_box.style.padding = "10px";
        error_box.style.margin = "5px 5px 5px 40px";

        if(id=="ecyos")
            error_box.style.marginLeft = "auto";

        isokay = false;
    }

```

```

function removeerror(id,error)
{
    let error_box = document.getElementById(id);
    error_box.innerHTML = error;
    error_box.style.padding = "0px";
    error_box.style.margin = "0";

    if(id=="ecyos")
    error_box.style.marginLeft = "0";

    isokay = false;
}

function validate_form()
{
    let form = document.forms['signup-form'];

    let fname = form['fname'].value;
    let lname = form['lname'].value;
    let email = form['email'].value;
    let pw = form['pw'].value;
    let rpw = form['rpw'].value;
    let dob = form['dob'].value;
    let cyos = form['cyos'].value;
    let gender = form['Gender'].value;

    removeerror("ename","")
    removeerror("email","")
    removeerror("epw","")
    removeerror("ecyos","")

    //check fname
    {
        let len = fname.length;

        if(len==0)
        {
            seterror("ename","*First Name and Last Name should not be empty and only
contain letters!");
            ename = 1;
        }

        for(let i=0;i<len;i++)
        {
            let c = fname.charCodeAt(i);

            if(!((c>=65 && c<=90) || (c>=97 && c<=122)))
            seterror("ename","*First Name and Last Name should not be empty and only
contain letters!")
        }
    }
}

```

```

//check lname
{
    let len = lname.length;

    if(len==0)
        seterror("ename","*First Name and Last Name should not be empty and only
contain letters!");

    for(let i=0;i<len;i++)
    {
        let c = lname.charCodeAt(i);

        if(!((c>=65 && c<=90) || (c>=97 && c<=122)))
            seterror("ename","*First Name and Last Name should not be empty and only
contain letters!");
    }
}

let eemail = false;

//check email
{
    let len = email.length;

    if(len==0)
    {
        seterror("eemail","*Email should not be empty!");
        eemail = true;
    }
    else if(len>23 || len<23)
    {
        seterror("eemail","*Email should be in the form of
DDCCCDDD@nirmauni.ac.in, D=any digit, C=any letter!");
        eemail = true;
    }

    let rollno = email.slice(0,8);
    let domain = email.slice(8);

    if(!(domain == "@nirmauni.ac.in" || domain == "@NIRMAUNI.AC.IN") &&
eemail==false)
    {
        seterror("eemail","*Email should be in the form of
DDCCCDDD@nirmauni.ac.in, D=any digit, C=any letter!");
        eemail=true;
    }

    if(eemail==false)
    {

```

```

        for(let i=0;i<rollno.length;i++)
        {
            let c = rollno.charCodeAt(i);
            console.log(c,i);

            if(i>=2 && i<=4)
            {
                if(!((c>=65 && c<=90) || (c>=97 && c<=122)))
                    seterror("email","*Email should be in the form of
DDCCCDDD@nirmauni.ac.in, D=any digit, C=any letter!");
            }
            else
            {
                if(!(c>=48 && c<=57))
                    seterror("email","*Email should be in the form of
DDCCCDDD@nirmauni.ac.in, D=any digit, C=any letter!");
            }
        }
    }
}

let epw = false;

//check password and rpw
{
    let lenpw = pw.length;

    if(lenpw==0)
    {
        seterror("epw","*Password should not be empty!");
        epw=true;
    }

    if(lenpw<8 && epw==false)
    {
        seterror("epw","*Password should be atleast 8 characters long!");
        epw=true;
    }

    let ul=false,ll=false,d=false,sc=false;

    let scl = "@#$$%&" // regular expression to match special characters

    if(epw==false)
    {
        for(let i=0;i<lenpw;i++)
        {
            let c = pw.charCodeAt(i);

            console.log(c);

```

```

        if((c>=65 && c<=90))
            ul=true;
        else if((c>=97 && c<=122))
            ll=true;
        else if((c>=48 && c<=57))
            d=true;
        else if(scl.includes(String.fromCharCode(c)))
            sc=true;
        else
        {
            seterror("epw","*Password should contain atleast one uppercase
letter, lowercase letter, digit and special character(@,#,$,%,&!");
            console.log("hey");
            break;
        }
    }

    console.log(ul,ll,d,sc);

    if(!ul || !ll || !d || !sc)
    {
        seterror("epw","*Password should contain atleast one uppercase
letter, lowercase letter, digit and special character(@,#,$,%,&!");
    }
}

let lenrpw = rpw.length;

if(lenrpw==0 && epw==false)
{
    seterror("epw","*Retype Password should not be empty!");
    epw=true;
}

if(pw!=rpw && epw==false)
    seterror("epw","*Password and Retype Password must be identical!");
}

//check cyos
{
    if(cyos=="None")
        seterror("ecyos","*Please choose current year of study!");
}

return isokay;
}

</script>

</body>
</html>

```

Output:

First Name*

Last Name*

Email*

Password*

Retype Password*

dd-mm-yyyy

Select Year of Study*

☐ Male

☐ Female

☒ Other

☐ Remember Me

Forgot Password?

Reset

Signup



First Name*

Last Name*

*First Name and Last Name should not be empty and only contain letters!



Email*

*Email should not be empty!



Password*

Retype Password*

*Password should not be empty!



dd-mm-yyyy



Select Year of Study*



*Please choose current year of study!

☐ Male☐ Female☒ Other☐ Remember Me

Forgot Password?

Reset

Signup