

# Vejledende løsning til eksamen, DSDS, efterår 2007

## Introduktion til Scripting, Databaser og Systemarkitektur

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### Opgave 1 (15 procent) - HTML

#### Opgave 1.1 (7 procent)

```
<table>
  <tr>
    <th>Kilometer</th>
    <th>Arbejdsplads</th>
  </tr>
  <tr>
    <td>92.5</td>
    <td><a href='company.php?cid=2'>DTU</a></td>
  </tr>
  <tr>
    <td>53.8</td>
    <td><a href='company.php?cid=1'>ITU</a></td>
  </tr>
  <tr>
    <td>2.7</td>
    <td><a href='company.php?cid=3'>KUA</a></td>
  </tr>
</table>
```

#### Opgave 1.2 (8 procent)

```
<form action='insert_trip.php' method='post'>
```

---

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```

<input type='hidden' name='cid' value='2' />
<input type='text' name='email' />
<input type='password' name='passwd' />
<input type='text' name='km' />
<input type='submit' value='Tilføj tur' />
</form>

```

## Opgave 2 (15 procent) - PHP

### Opgave 2.1 (7 procent)

```

function array_max($array){
    $max = 0;
    for ( $i = 0 ; $i < count( $array ) ; $i++ ) {
        if ( $array[ $i ] > $max )
            $max = $array[ $i ];
    }
    return $max;
}

```

### Opgave 2.2 (8 procent)

```

function array_avg($array){
    if ( count($array) > 0 )
        return array_total($array) / count($array);
    else
        return 0;
}

```

## Opgave 3 (15 procent) - Regulære Udtryk

### Opgave 3.1 (5 procent)

$(0|[1-9][0-9]^*)$

### Opgave 3.2 (5 procent)

$(0|[1-9][0-9]^*)\.[0-9]^+$

**Opgave 3.3 (5 procent)**

```
function chk_kommatal ( $s ) {
  if (!ereg('^([0-9][0-9]*)\.[0-9]+$', $s) ){
    error ('fejl i kommatal');
  }
  return;
}
```

**Opgave 4 (25 procent) - SQL / Datamodel****Opgave 4.1 (5 procent)**

u.name	c.name
Lars	ITU
Egon	ITU
Marie	DTU
Ulla	DTU
Bent	KUA

**Opgave 4.2 (5 procent)**

```
CREATE TABLE trips (
  tid      INT      NOT NULL PRIMARY KEY AUTO_INCREMENT,
  uid      INT      NOT NULL REFERENCES users(uid),
  distance DOUBLE NOT NULL,
  tripdate DATE     NOT NULL
) ENGINE=InnoDB;
```

**Opgave 4.3 (5 procent)**

```
INSERT INTO trips (uid,distance,tripdate)
VALUES (1, 3.1, now()),
       (4, 20.0, now()),
       (3, 5.7, now());
```

**Opgave 4.4 (5 procent)**

```
SELECT users.uid, users.name, SUM(distance) as total
```

```

FROM users LEFT JOIN trips ON users.uid = trips.uid
WHERE cid = 2
GROUP BY users.uid, users.name
ORDER BY total DESC

```

### Opgave 4.5 (5 procent)

```

SELECT users.uid, users.name, SUM(distance) as total
FROM users, trips
WHERE users.uid = trips.uid
GROUP BY users.uid
HAVING SUM(distance) > 1000
ORDER BY total DESC

```

## Opgave 5 (30 procent) - Web Service

### Opgave 5.1 (7 procent)

```

function html_header($title){
    echo "<html>
        <head>
            <title>$title</title>
        </head>
        <body>
            <h2>$title</h2>";
}

```

### Opgave 5.2 (7 procent)

```

<?php
/*****
* Siden modtager username, passwd, km og cid
* inkluderer filer, tjeck, fetch/insert, redirect
*****/
include("mylib.php");

$email=$_REQUEST['email'];
$passwd=$_REQUEST['passwd'];
$km=$_REQUEST['km'];
$cid=$_REQUEST['cid'];

```

```

chk_heltal($cid);
chk_kommatal($km);
chk_email($email);
chk_passwd($passwd);

mydb_connect();

$res = mysql_query("SELECT uid FROM users WHERE email='$email' AND passwd='$passwd'");
if($row=mysql_fetch_array($res)){
    $uid=$row[0];
    mysql_query("INSERT INTO trips VALUES ('', $uid, $km, NOW())");
    header("Location: company.php?cid=$cid");
} else {
    error("Forkert brugernavn / adgangskode");
}
?>

```

### Opgave 5.3 (7 procent)

```

include("mylib.php");
$cid=$_REQUEST['cid'];
chk_heltal($cid);

mydb_connect();

$res = mysql_query(
    "SELECT name
    FROM companies
    WHERE cid=$cid"
);
$work=mysql_fetch_array($res);

html_header("Kilometer per ansat på arbejdspladsen $work[0]");

$result = mysql_query(
    "SELECT users.uid, users.name, SUM(distance) as total
    FROM users LEFT JOIN trips ON users.uid = trips.uid
    WHERE cid = $cid
    GROUP BY users.uid, users.name
    ORDER BY total DESC"
);
?>
<table>
<tr>
<th>Kilometer</th>

```

```
        <th>Navn</th>
    </tr>
<?php
while($row = mysql_fetch_array($result)){
    echo "<tr>
        <td>$row[1]</td>
        <td>$row[0]</td>
    </tr>";
}
?></table>
<p><a href='addTrip.php?cid=?php echo $cid;?'>Tilføj tur</a>
<?php
footer();
?>
```

#### Opgave 5.4 (8 procent)

Det skal fremgå af besvarelsen at et stærkt typet sprog giver bedre muligheder for at fange fejl tidligt i udviklingsfasen. Herudover skal det fremgå at udviklingscyklusen er mere omfattende når der benyttes et stærkt typet sprog.