Lab Report

ECPE 170 – Computer Systems and Networks – Fall 2021

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Lab Topic: Lab 8: Network Socket Programming (Basic) (Lab #: 08)

(1) What is first line of the python script that starts with #! doing? Where in ECPE 170 have you seen this before?
This is the shebang, it denotes the location of the interpreter. We have seen this when using bash as it does the same thing.

(2) Document the HTTP request and the server response when you manually download the HTML file at http://spaceref.com via Netcat.

```
netcat -C www.spaceref.com 80
GET / HTTP/1.1
Host: www.spaceref.com
Connection: close

HTTP/1.1 200 OK
Date: Thu, 21 Oct 2021 17:38:56 GMT
Server: Apache/2.2.22 (Ubuntu)
X-Powered-By: PHP/5.3.10-1ubuntu3.13
Vary: Accept-Encoding
Connection: close
Transfer-Encoding: chunked
Content-Type: text/html

3250
<!DOCTYPE html>
<html lang="en">
<head>
   <title>SpaceRef</title>
   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

   <!-- description -->
   <meta name="generator" content="JetBrains PhpStorm/Intercat/Movable Type Pro" />
   <META NAME="description" content="SpaceRef is a space news and reference site. This includes space exploration and missions, a space calendar of events, interactive space news and a space directory and search engine.">
   <META NAME="keywords" content="space,space exploration,nasa watch,astrobiology,mars,space search engine">
   <META NAME="subject" CONTENT="Science:Space">

   <!-- scripts -->
   <script type="text/javascript">var _sf_startpt=(new Date()).getTime()</script>
   <script src="js/main.js" type="text/javascript"></script>
   <!--[if lt IE 9]>
   <script src="js/html5shiv.js"></script>
   <![endif]-->

   <meta http-equiv="Content-Script-Type" content="text/javascript" />
```

```
<!-- styles -->
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link href="css/bootstrap-mod.css" rel="stylesheet">
<link href="css/bootstrap-responsive.css" rel="stylesheet">
<link rel="alternate" type="application/atom+xml" title="Atom"
href="http://feeds.feedburner.com/spaceref/jext">
<link rel="apple-touch-icon" href="http://images.spaceref.com/logos/apple-touch-icon.png" />
<link rel="icon" type="http://spaceref.com/ico" href="http://spaceref.com/favicon.ico">

<script type='text/javascript'>
    var googletag = googletag || {};
    googletag.cmd = googletag.cmd || [];
    (function() {
        var gads = document.createElement('script');
        gads.async = true;
        gads.type = 'text/javascript';
        var useSSL = 'https:' == document.location.protocol;
        gads.src = (useSSL ? 'https:' : 'http:') +
                '//www.googletagservices.com/tag/js/gpt.js';
        var node = document.getElementsByTagName('script')[0];
        node.parentNode.insertBefore(gads, node);
    })();
</script>

<script type='text/javascript'>
    googletag.cmd.push(function() {
        googletag.defineSlot('/1017648/FullBanner', [468, 60],
'div-gpt-ad-1380219597036-0').addService(googletag.pubads());
        googletag.defineSlot('/1017648/HalfPageAd', [300, 600],
'div-gpt-ad-1380219597036-1').addService(googletag.pubads());


googletag.defineSlot('/1017648/Large_Leaderboard', [970, 90],
'div-gpt-ad-1485098226474-0').addService(googletag.pubads());

        googletag.defineSlot('/1017648/Leaderboard', [728, 90],
'div-gpt-ad-1380219597036-3').addService(googletag.pubads());
        googletag.defineSlot('/1017648/MediumRectangle', [300, 250],
'div-gpt-ad-1380219597036-4').addService(googletag.pubads());
        googletag.defineSlot('/1017648/Skyscraper', [120, 600],
'div-gpt-ad-1380219597036-5').addService(googletag.pubads());
        googletag.defineSlot('/1017648/300by100_SR_banner', [300, 100],
'div-gpt-ad-1459520066155-0').addService(googletag.pubads());
        googletag.pubads().enableSingleRequest();
        googletag.enableServices();
    });
```

(3) Document the HTTP request and the server response when you manually download the HTML file at http://neverssl.com/ via Netcat

```
netcat -C  www.neverssl.com 80
GET / HTTP/1.1
Host: www.neverssl.com
Connection: close

HTTP/1.1 200 OK
Content-Type: text/html
Content-Length: 2536
Connection: close
Last-Modified: Thu, 19 Nov 2020 22:29:21 GMT
Accept-Ranges: bytes
Server: AmazonS3
Date: Thu, 21 Oct 2021 15:48:06 GMT
ETag: "e8bb9152091d61caa9d69fed8c4aebc6"
Vary: Accept-Encoding
X-Cache: Hit from cloudfront
Via: 1.1 a2165b66922b78c24eb18ccc5d845335.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: SFO53-C1
X-Amz-Cf-Id: ZWIwKZrvROyHizfbNtc3rU_e62B9Vxd_sRnM2vGgG1XKn1CkfPeGaA==
Age: 7239

<html>
   <head>
      <title>NeverSSL - helping you get online</title>

      <style>
      body {
           font-family: Montserrat, helvetica, arial, sans-serif;
           font-size: 16x;
           color: #444444;
           margin: 0;
      }
      h2 {
          font-weight: 700;
          font-size: 1.6em;
          margin-top: 30px;
      }
      p {
          line-height: 1.6em;
      }
      .container {
          max-width: 650px;
```

```
        margin: 20px auto 20px auto;
        padding-left: 15px;
        padding-right: 15px
    }
    .header {
        background-color: #42C0FD;
        color: #FFFFFF;
        padding: 10px 0 10px 0;
```

(4) Document the HTTP request and the server response when you manually download the PNG image file at http://spaceref.com/img/logo_320red.png via Netcat

Note: Is there a good reason why it doesn't make sense to include the server response (at least, the data portion) in your lab report? On a related note, if your Terminal window hangs during this step, at least you'll know why!

```
netcat -C  www.spaceref.com 80
GET /img/logo_320red.png
Host: www.neverssl.com
Connection: close
```


```
PNG
IHDR
tEXtSoftwareAdobe ImageReadyq<
IDATx^Ů x{~{
IEND
```