

Note: The 3 script files are used for analyzing file **interview_data_set**, getting necessary info, converting JSON format, uploading it into server URL.

File **mac_assignment.sh** tested with URL <http://httpbin.org/post> on macOS 10.15.7

File **win_assignment.ps1** tested with URL <http://httpbin.org/post> on Windows 10

File **py_assignment.py** tested with URL <http://httpbin.org/post> on Windows 10 and macOS 10.15.7

Feel free to modify these 3 files if that is needed to meet the requirement.

Example output is below:

1. On Windows, run **powershell /path/to/win_assignment.ps1 /path/to/interview_data_set**

Example:

```
C:\Users\wadewei\Documents\assignment>powershell ./win_assignment.ps1 ./interview_data_set
Upload event info of BBAOMACBOOKAIR2 successfully!

HourlyTimeWindowandEvents : TimeWindow: 0000-0100 numberOfOccurrence: 17
                             TimeWindow: 0100-0200 numberOfOccurrence: 17
                             TimeWindow: 0200-0300 numberOfOccurrence: 19
                             TimeWindow: 0300-0400 numberOfOccurrence: 16
                             TimeWindow: 0400-0500 numberOfOccurrence: 15
                             TimeWindow: 0500-0600 numberOfOccurrence: 15
                             TimeWindow: 0600-0700 numberOfOccurrence: 15
                             TimeWindow: 0700-0800 numberOfOccurrence: 16
                             TimeWindow: 0800-0900 numberOfOccurrence: 15
                             TimeWindow: 0900-1000 numberOfOccurrence: 15
                             TimeWindow: 1000-1100 numberOfOccurrence: 17
                             TimeWindow: 1100-1200 numberOfOccurrence: 18
                             TimeWindow: 1200-1300 numberOfOccurrence: 18
                             TimeWindow: 1300-1400 numberOfOccurrence: 8
                             TimeWindow: 1400-1500 numberOfOccurrence: 11
                             TimeWindow: 1500-1600 numberOfOccurrence: 15
                             TimeWindow: 1600-1700 numberOfOccurrence: 17
                             TimeWindow: 1700-1800 numberOfOccurrence: 19
                             TimeWindow: 2200-2300 numberOfOccurrence: 2
                             TimeWindow: 2300-2400 numberOfOccurrence: 19

description                  : Could not find uid associated with service: 0: Undefined error: 0 501 Service exited with abnormal code: 78
deviceName                  : BBAOMACBOOKAIR2
processIDs                  : 12513 12535 12536 12555 12556 12560 12610 12622 12633 12636 12637 12698 12734 12738 12741 12745 12746 12765 12771 12777 12802 12822
                             12834 12844 12860 12870 12890 12945 12949 12976 12980 12982 13002 13003 13017 13021 13027 13043 13044 13080 20333 24366
                             35854 41579 48653 52293 52294 52295 52299 52305 52308 52309 52313 52323 52324 52325 52349 52366 52376 52377 52382 52410 52420 52424
                             52443 52444 52459 52463 52478 52484 52486 52503 52515 52516 52523 52561 52570 52575 52591 52606 52609 52616 52629 52635 52636 52638
                             52665 52668 52675 52677 52682 52684 52687 52704 52715 52716 52717 52721 52725 52735 52760 52761 52764 52774 52777 52781 52792 52796
                             52812 52817 52824 52825 52841 52845 52846 52851 52874 52876 52879 52881 52882 52888 52889 52915 52916 52917 52927 52928 52932 52935
                             52936 52937 52974 52990 53004 53006 53014 53019 53020 53021 53131 53136 53143 53149 53167 53184 53189 53208 53211 53221 53314 53319
                             53360 53361 53364 53365 53367 53369 53380 53396 53401 53403 53412 53414 53417 53419 53436 53452 53453 53457 53476 53480 53488 53497
                             53500 53530 53537 53541 53542 53585 53620 53648 53687 53691 53708 53714 53743 53771 53776 53788 53805 53829 53853 53898 53901 53903
                             53914 53927 53931 53937 53950 53953 53972 53999 54008 54014 54029 54043 54044 54048 54061 54064 54093 54095 54099 54113 54115 54117
                             54119 54291 54363 54365 54369 54370 54375 54385 54392 54398 54401 54404 54441 54506 54605 54610 54612 54615 54618 54620 54629 54666
                             54679 54706 54708 54709 54711 54713 54745 54808 54853 54873 54889 54897 54900 54904 54907 54921 54928 54942 54951 54970 54972 54977
                             54981 54988 54992 55000 55001 55004 55019 55024 55041 55049 55055 55059 55061 55062 55077 55079 55099 55108 55128 56066 56088 56100
                             56101 56103 56122 56147 56162 56176 56211 56220 56231 56232 56279 56300 56302 56303 56316 56340 56353 56381

processName                  : com.apple.mdworker.bundles
```

2. On Windows, run **python /path/to/win_assignment.ps1 /path/to/interview_data_set**

Example:

```
C:\Users\wadewei\Documents\assignment>python ./py_assignment.py ./interview_data_set
Upload event info of BBAOMACBOOKAIR2 successfully!
{
  "description": "Could not find uid associated with service: 0: Undefined error: 0 501 Service exited with abnormal code: 78",
  "deviceName": "BBAOMACBOOKAIR2",
  "hourlyTimeWindowandEvents": "TimeWindow: 0000-0100 numberOfOccurrence: 17\nTimeWindow: 0100-0200 numberOfOccurrence: 17\nTimeWindow: 0200-0300 numberOfOccurrence: 19\nTimeWindow: 0300-0400 numberOfOccurrence: 16\nTimeWindow: 0400-0500 numberOfOccurrence: 15\nTimeWindow: 0500-0600 numberOfOccurrence: 15\nTimeWindow: 0600-0700 numberOfOccurrence: 15\nTimeWindow: 0700-0800 numberOfOccurrence: 16\nTimeWindow: 0800-0900 numberOfOccurrence: 15\nTimeWindow: 0900-1000 numberOfOccurrence: 15\nTimeWindow: 1000-1100 numberOfOccurrence: 17\nTimeWindow: 1100-1200 numberOfOccurrence: 18\nTimeWindow: 1200-1300 numberOfOccurrence: 18\nTimeWindow: 1300-1400 numberOfOccurrence: 8\nTimeWindow: 1400-1500 numberOfOccurrence: 11\nTimeWindow: 1500-1600 numberOfOccurrence: 15\nTimeWindow: 1600-1700 numberOfOccurrence: 17\nTimeWindow: 1700-1800 numberOfOccurrence: 19\nTimeWindow: 2200-2300 numberOfOccurrence: 2\nTimeWindow: 2300-2400 numberOfOccurrence: 19\n",
  "processIDs": "54392 55079 52764 12777 56162 54808 55041 24366 52882 54706 56220 56316 54970 55128 52308 12636 53136 13017 53452 52635 53401 52721 52716 52575 52561 56232 54745 55004 52928 52486 52376 53805 53999 12741 54618 54666 56353 56300 53541 53019 54951 53937 12879 52876 53367 54615 53927 53453 55001 54117 53687 52443 52668 52917 54291 54363 54375 13043 53131 54014 53853 52927 56101 52761 53542 54709 52609 53457 12802 53020 53903 12771 54404 12765 52879 53403 54506 53648 52682 54900 54981 54988 52687 54610 55019 53189 55077 12898 52444 53776 48653 54713 54928 52888 12610 52774 54365 53950 52616 12844 12556 52349 52675 12622 52735 12555 53167 52325 12633 53497 54907 54853 54605 52570 54113 12976 54904 52299 35854 12975 54043 53221 12560 12949 52420 52459 52974 53364 53004 53771 52846 54977 5389 8 55108 54992 54873 54921 55062 53620 54708 53829 54044 12860 56302 53361 54889 54115 53419 52377 52665 54612 52629 54029 52515 53931 56381 53208 56066 54369 54099 53014 12698 52717 56231 12745 52881 52916 52777 53691 52932 52305 52845 54398 52990 53788 55055 53412 54711 54093 56103 52760 53360 52796 52463 52889 54629 54441 53417 52636 56211 52725 41579 52419 53310 54064 12536 55000 53953 52478 52366 52825 52715 12746 20333 53537 53585 12080 52484 53184 13044 52812 52824 52323 53006 52436 54370 52294 54042 56100 56340 54679 53306 53708 12834 12074 52313 12738 52781 53143 52309 52606 52841 55059 53743 13080 12535 54110 55024 54008 53914 52503 56088 52684 53476 52293 54620 13003 55099 12513 52677 54401 52424 54897 53369 54972 52792 54861 12992 53314 52817 52851 53211 52936 53149 53365 52382 53500 53021 53414 53488 53530 53972 55049 12637 56176 12945 52937 13002 52704 52516 52591 12734 54385 12822 52295 52915 52935 53901 55061 52874 13021 52523 53380 56279 52638 5348 0 52324 53714 56303 56147 56122 54095 54048 13027",
  "processName": "com.apple.mdworker.bundles"
}
```

3. On macOS, run **bash /path/to/mac_assignment.sh /path/to/interview_data_set**

Example:

```
wadewei:assignment mac$ ./mac_assignment.sh interview_data_set
Upload event info of BBAOMACBOOKAIR2 successfully!
{
  "json": {
    "Description": "Could not find uid associated with service: 0: Undefined error: 0 501 Service exited with abnormal code: 78",
    "DeviceName": "BBAOMACBOOKAIR2",
    "HourlyTimeWindowEvents": "TimeWindow: 0000-0100 numberOfOccurrence: 17\nTimeWindow: 0100-0200 numberOfOccurrence: 17\nTimeWindow: 0200-0300 numberOfOccurrence: 19\nTimeWindow: 0300-0400 numberOfOccurrence: 16\nTimeWindow: 0400-0500 numberOfOccurrence: 15\nTimeWindow: 0500-0600 numberOfOccurrence: 15\nTimeWindow: 0600-0700 numberOfOccurrence: 15\nTimeWindow: 0700-0800 numberOfOccurrence: 16\nTimeWindow: 0800-0900 numberOfOccurrence: 15\nTimeWindow: 0900-1000 numberOfOccurrence: 15\nTimeWindow: 1000-1100 numberOfOccurrence: 8\nTimeWindow: 1100-1200 numberOfOccurrence: 18\nTimeWindow: 1200-1300 numberOfOccurrence: 18\nTimeWindow: 1300-1400 numberOfOccurrence: 11\nTimeWindow: 1400-1500 numberOfOccurrence: 15\nTimeWindow: 1500-1600 numberOfOccurrence: 15\nTimeWindow: 1600-1700 numberOfOccurrence: 17\nTimeWindow: 1700-1800 numberOfOccurrence: 19\nTimeWindow: 2200-2300 numberOfOccurrence: 2\nTimeWindow: 2300-2400 numberOfOccurrence: 19\n",
    "ProcessIDs": "12513 12535 12536 12555 12556 12560 12610 12622 12633 12636 12637 12698 12734 12738 12741 12745 12746 12765 12771 12777 12802 12822 12834 12844 12860 12879 12898 12945 12949 12974 12975 12976 12980 12992 13002 13003 13017 13021 13027 13043 13044 13080 20333 24366 35854 41579 48653 52293 52294 52295 52299 52305 52308 52309 52313 52323 52324 52325 52349 52366 52376 52377 52382 52419 52420 52424 52443 52444 52459 52463 52478 52484 52486 52503 52515 52516 52523 52561 52570 52575 52591 52606 52609 52616 52629 52635 52636 52638 52665 52668 52675 52677 52682 52684 52687 52704 52715 52716 52717 52721 52725 52735 52760 52761 52764 52774 52777 52781 52792 52796 52812 52817 52824 52825 52841 52845 52846 52851 52874 52876 52879 52881 52882 52888 52889 52915 52916 52917 52927 52928 52932 52935 52936 52937 52974 52990 53004 53006 53014 53019 53020 53021 53131 53136 53143 53149 53167 53184 53189 53208 53211 53221 53314 53319 53360 53361 53364 53365 53367 53369 53380 53396 53401 53403 53412 53414 53417 53419 53436 53452 53453 53457 53476 53480 53488 53497 53500 53530 53537 53541 53542 53585 53620 53648 53687 53691 53708 53714 53743 53771 53776 53788 53805 53829 53853 53898 53901 53903 53914 53927 53931 53937 53950 53953 53972 53999 54008 54014 54029 54043 54044 54048 54061 54064 54093 54095 54099 54113 54115 54117 54119 54291 54363 54365 54369 54370 54375 54385 54392 54398 54401 54404 54441 54506 54605 54610 54612 54615 54618 54620 54629 54666 54679 54706 54708 54709 54711 54713 54745 54808 54853 54873 54889 54897 54900 54904 54907 54921 54922 54942 54951 54970 54972 54977 54981 54988 54992 55000 55001 55004 55019 55024 55041 55049 55055 55059 55061 55062 55077 55079 55099 55108 55128 56066 56088 56100 56101 56103 56122 56147 56162 56176 56211 56220 56231 56232 56279 56300 56302 56303 56316 56340 56353 56381",
    "processName": "com.apple.mdworker.bundles"
  }
}
wadewei:assignment mac$
```

- On macOS run **python /path/to/py_assignment.py /path/to/interview_data_set** (you may need to install **requests** module first)

Example:

```
wadewei:assignment mac$ python3 ./py_assignment.py ./interview_data_set
Upload event info of BBAOMACBOOKAIR2 successfully!
{
  "description": "Service exited with abnormal code: 78 Could not find uid associated with service: 0: Undefined error: 0 501",
  "deviceName": "BBAOMACBOOKAIR2",
  "hourlyTimeWindowEvents": "TimeWindow: 0000-0100 numberOfOccurrence: 17\nTimeWindow: 0100-0200 numberOfOccurrence: 17\nTimeWindow: 0200-0300 numberOfOccurrence: 19\nTimeWindow: 0300-0400 numberOfOccurrence: 16\nTimeWindow: 0400-0500 numberOfOccurrence: 15\nTimeWindow: 0500-0600 numberOfOccurrence: 15\nTimeWindow: 0600-0700 numberOfOccurrence: 15\nTimeWindow: 0700-0800 numberOfOccurrence: 16\nTimeWindow: 0800-0900 numberOfOccurrence: 15\nTimeWindow: 0900-1000 numberOfOccurrence: 15\nTimeWindow: 1000-1100 numberOfOccurrence: 8\nTimeWindow: 1100-1200 numberOfOccurrence: 18\nTimeWindow: 1200-1300 numberOfOccurrence: 18\nTimeWindow: 1300-1400 numberOfOccurrence: 11\nTimeWindow: 1400-1500 numberOfOccurrence: 15\nTimeWindow: 1500-1600 numberOfOccurrence: 15\nTimeWindow: 1600-1700 numberOfOccurrence: 17\nTimeWindow: 1700-1800 numberOfOccurrence: 19\nTimeWindow: 2200-2300 numberOfOccurrence: 2\nTimeWindow: 2300-2400 numberOfOccurrence: 19\n",
  "processIDs": "13021 53314 52570 53019 52932 54099 54853 52324 13043 56100 52575 53776 53788 12513 53898 52937 55061 52812 52561 54711 53488 54808 54029 55099 56088 56101 12633 35854 55049 54709 55059 53401 56302 52424 52774 53542 54629 52735 53500 52463 52478 12610 20333 53004 54615 52675 52591 53396 24366 52516 54014 54404 54972 56122 54401 12746 48653 52523 54921 52845 41579 52928 53360 53221 54900 56176 52325 52684 12771 13002 53953 12560 52420 53927 53367 54043 54873 54612 55000 12898 52294 12949 52716 54398 53361 53014 52916 52721 53419 53903 52817 55055 12765 54610 52888 53972 13027 52764 52313 54620 53211 53585 12536 55077 53620 53805 52936 52841 12555 52927 54942 52459 12945 53530 52717 53189 56211 52715 53131 54951 52917 53541 53931 53771 52635 52851 12802 53901 56066 53167 55024 53937 53853 54095 54981 54048 55128 12622 53476 54618 12556 12860 52881 52761 53369 53691 54291 54745 53452 53914 54977 53143 52323 55062 56279 54907 12741 52638 53648 53184 52882 53403 53436 52760 54363 54679 56231 52935 54115 53708 54365 54928 52349 12974 52682 53006 52825 52846 54375 54061 52616 52668 52382 52443 52974 53687 54392 52305 52515 54904 54988 54506 56220 52299 53149 53414 54706 13003 56103 52665 12698 53412 54369 12844 56147 54370 53021 52293 53380 54117 12637 53020 52484 52725 54970 52889 56300 12975 56303 52687 56232 52444 52824 54008 52636 13044 52629 53714 12745 52876 53829 12879 54064 12636 12822 52308 52792 56316 56353 52874 54605 53950 54441 52486 52796 53136 52677 55079 13017 55001 53537 12734 52990 53457 52295 55019 54897 12980 55004 53743 12535 52419 52609 54385 52376 53417 12992 54713 53208 53319 54708 12777 54113 52366 53999 52606 54889 54093 54666 52503 53364 52777 52781 54992 52915 53365 53480 13080 52879 12738 52704 53497 56162 12976 52377 55108 56381 56340 54119 12834 55041 52309 53453 54044",
  "processName": "com.apple.mdworker.bundles"
}
wadewei:assignment mac$
```

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Final modification on 2022-02-13