

MICHIGAN STATE

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Alpha Presentation

Simplifying High Performance Computing

The Capstone Experience

Team Michigan State University HPCC

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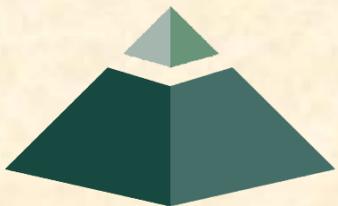
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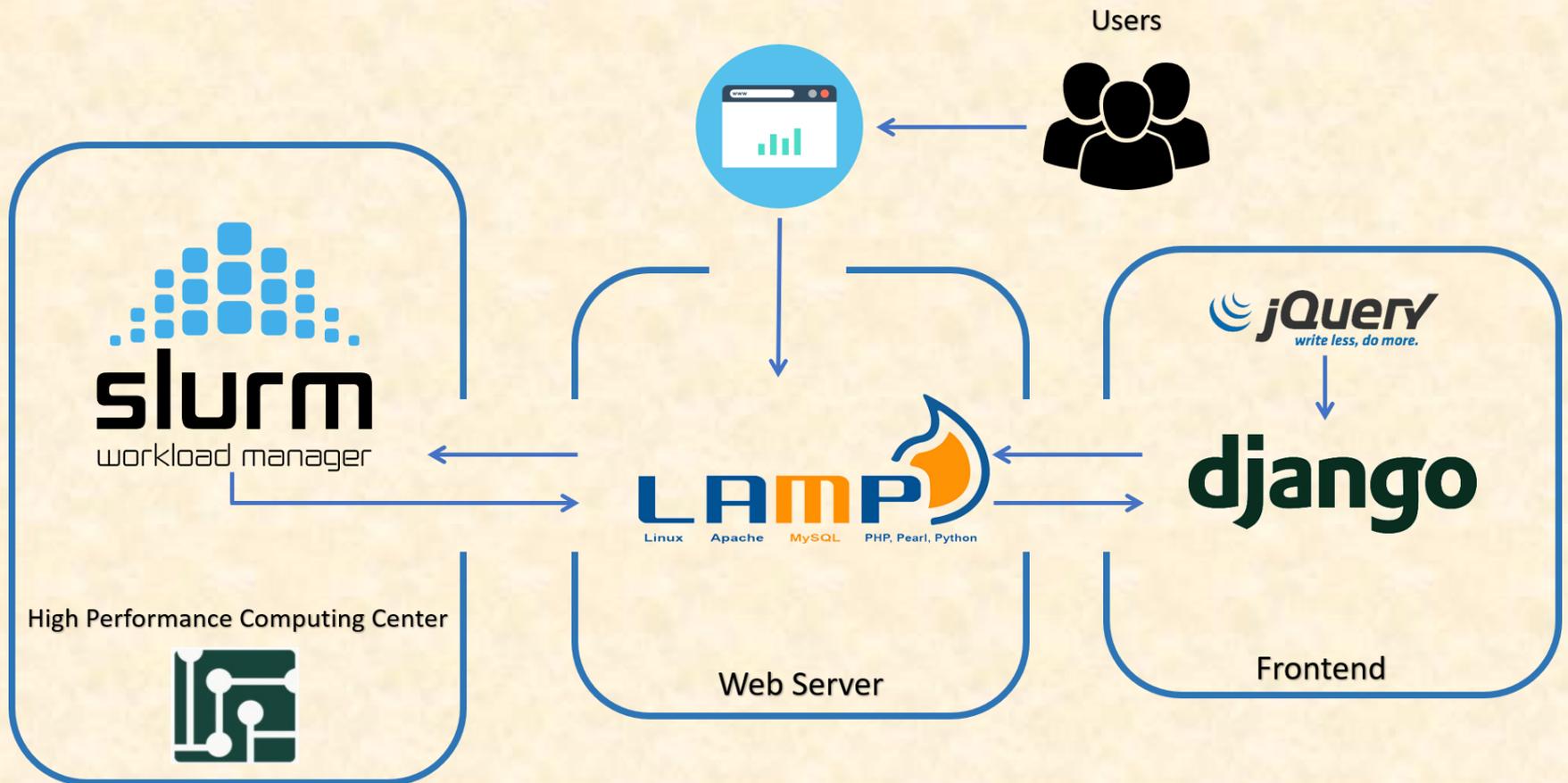
*From Students...
...to Professionals*

Project Overview

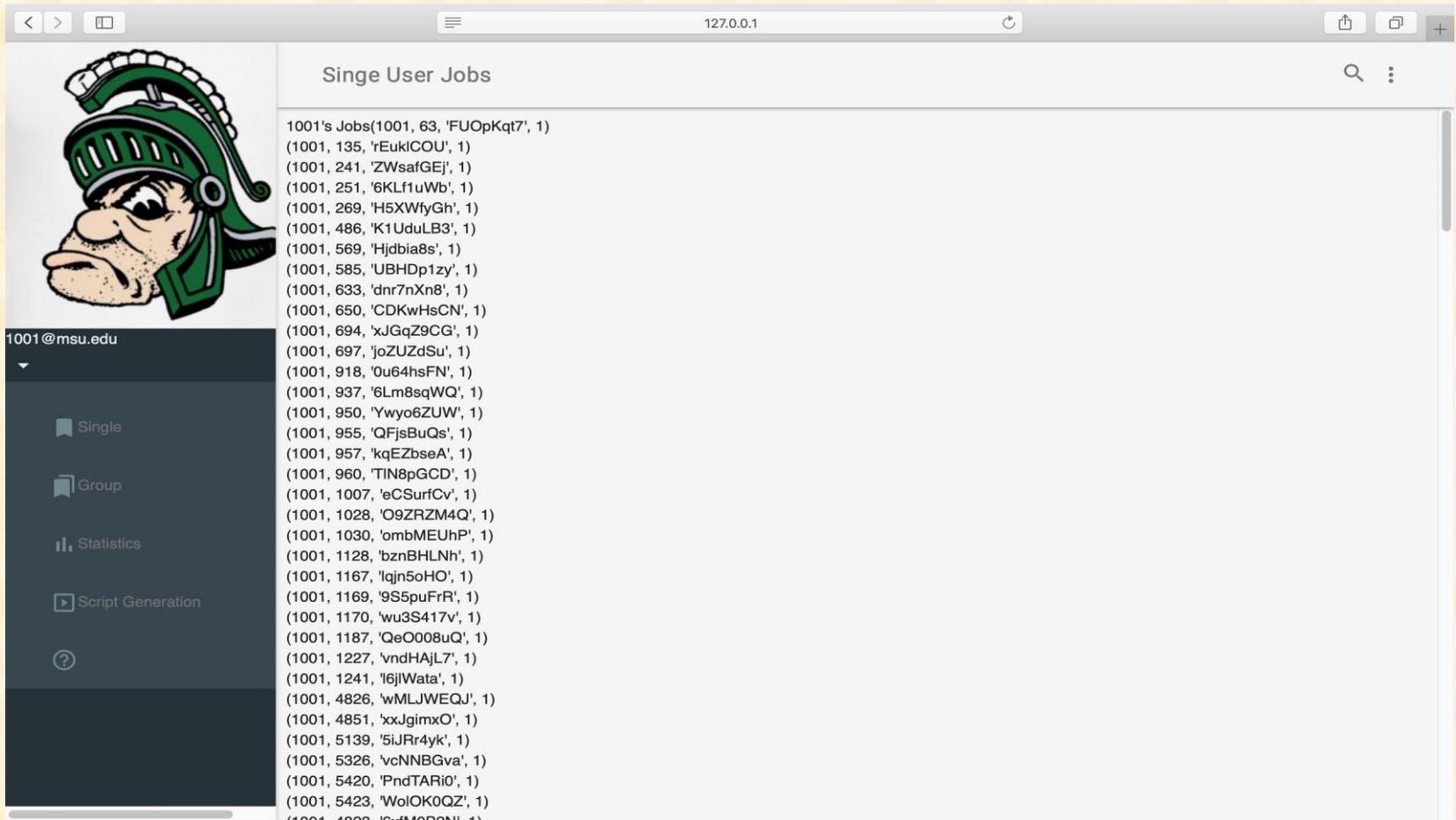
- Simplifies the Process of Using the HPCC
- Works Through a Simple Web App
- Provides Script Generation
- Job Monitoring
- Job Statistics
- Job Submission
- Etc...



System Architecture



Single User Jobs



The screenshot shows a web browser window with the address bar displaying '127.0.0.1'. The page title is 'Single User Jobs'. On the left side, there is a navigation sidebar for the user '1001@msu.edu' with the following options: Single, Group, Statistics, and Script Generation. The main content area displays a list of job entries, each consisting of a job ID in parentheses followed by a user ID in single quotes and a count in parentheses. The list starts with '(1001, 135, 'rEuklCOU', 1)' and continues down to '(1001, 5423, 'WolOK0QZ', 1)'. A search icon and a menu icon are visible in the top right corner of the page content area.

Job ID	User ID	Count
(1001, 135, 'rEuklCOU', 1)	'rEuklCOU'	1
(1001, 241, 'ZWsafGEj', 1)	'ZWsafGEj'	1
(1001, 251, '6KLF1uWb', 1)	'6KLF1uWb'	1
(1001, 269, 'H5XWfyGh', 1)	'H5XWfyGh'	1
(1001, 486, 'K1UduLB3', 1)	'K1UduLB3'	1
(1001, 569, 'Hjdbia8s', 1)	'Hjdbia8s'	1
(1001, 585, 'UBHDp1zy', 1)	'UBHDp1zy'	1
(1001, 633, 'dnr7nXn8', 1)	'dnr7nXn8'	1
(1001, 650, 'CDKwHsCN', 1)	'CDKwHsCN'	1
(1001, 694, 'xJGqZ9CG', 1)	'xJGqZ9CG'	1
(1001, 697, 'joZUZdSu', 1)	'joZUZdSu'	1
(1001, 918, 'Ou64hsFN', 1)	'Ou64hsFN'	1
(1001, 937, '6Lm8sqWQ', 1)	'6Lm8sqWQ'	1
(1001, 950, 'Ywyo6ZUW', 1)	'Ywyo6ZUW'	1
(1001, 955, 'QFjsBuQs', 1)	'QFjsBuQs'	1
(1001, 957, 'kqEZbseA', 1)	'kqEZbseA'	1
(1001, 960, 'TIN8pGCD', 1)	'TIN8pGCD'	1
(1001, 1007, 'eCSurfCv', 1)	'eCSurfCv'	1
(1001, 1028, 'O9ZRZM4Q', 1)	'O9ZRZM4Q'	1
(1001, 1030, 'ombMEUhP', 1)	'ombMEUhP'	1
(1001, 1128, 'bznBHLNh', 1)	'bznBHLNh'	1
(1001, 1167, 'lqjn5oHO', 1)	'lqjn5oHO'	1
(1001, 1169, '9S5puFrR', 1)	'9S5puFrR'	1
(1001, 1170, 'wu3S417v', 1)	'wu3S417v'	1
(1001, 1187, 'QeO008uQ', 1)	'QeO008uQ'	1
(1001, 1227, 'vndHAJL7', 1)	'vndHAJL7'	1
(1001, 1241, 'l6jWata', 1)	'l6jWata'	1
(1001, 4826, 'wMLJWEQJ', 1)	'wMLJWEQJ'	1
(1001, 4851, 'xxJgimxO', 1)	'xxJgimxO'	1
(1001, 5139, '5iJRr4yk', 1)	'5iJRr4yk'	1
(1001, 5326, 'vcNNBGva', 1)	'vcNNBGva'	1
(1001, 5420, 'PndTARi0', 1)	'PndTARi0'	1
(1001, 5423, 'WolOK0QZ', 1)	'WolOK0QZ'	1



Group User Jobs

MSU HPCC - Mozilla Firefox

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Single Group Statistics Script Generation
[help_outlineHelp](#)

user01's Group Jobs

job_db_inx	mod_time	job_name	ld_job	ld_user	ld_group	kill_requid	mem_req	nodeлист	nodes_alloc	node_inx	state	timelimit	time_submit	time_eligible	time_start	time_end	time_suspended	work_dir
55	1550172365	fAcQcQdv	29	1000	0	-1	9223372036854776308	c2	1	1	3	7200	1550172364	1550172364	1550172365	1550172365	0	/tmp
171	1550172366	ihIZDYQy	88	1000	0	-1	9223372036854776308	c2	1	1	3	7200	1550172365	1550172365	1550172365	1550172365	0	/tmp
445	1550172388	3QsBvIBV	225	1000	0	-1	9223372036854776308	c3	1	2	3	7200	1550172388	1550172388	1550172388	1550172388	0	/tmp
461	1550172442	MJMJobo	235	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172426	1550172426	1550172427	1550172442	0	/tmp
500	1550172507	soKdoBil	274	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172426	1550172426	1550172427	1550172506	0	/tmp
531	1550172551	QVazRxl9	305	1000	0	-1	9223372036854776308	c1	1	0	3	7200	1550172427	1550172427	1550172536	1550172551	0	/tmp
559	1550172593	frAsq3C6	333	1000	0	-1	9223372036854776308	e9	1	8	3	7200	1550172427	1550172427	1550172578	1550172593	0	/tmp
575	1550172624	zdu1BYbK	349	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172427	1550172427	1550172605	1550172624	0	/tmp
696	1550172798	rPdAvDWT	470	1000	0	-1	9223372036854776308	c10	1	9	3	7200	1550172429	1550172429	1550172786	1550172798	0	/tmp
701	1550172816	9uZnPmpO	475	1000	0	-1	9223372036854776308	c1	1	0	3	7200	1550172429	1550172429	1550172798	1550172816	0	/tmp
724	1550172845	Y0sasPJU	498	1000	0	-1	9223372036854776308	c1	1	0	3	7200	1550172429	1550172429	1550172830	1550172845	0	/tmp
741	1550172872	Nlkcje1B	515	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172429	1550172429	1550172858	1550172872	0	/tmp
769	1550172915	668FLBHL	543	1000	0	-1	9223372036854776308	c6	1	5	3	7200	1550172429	1550172429	1550172899	1550172915	0	/tmp
770	1550172914	8z9k54IE	544	1000	0	-1	9223372036854776308	e9	1	8	3	7200	1550172429	1550172429	1550172899	1550172914	0	/tmp
853	1550173045	E25vChZ4	627	1000	0	-1	9223372036854776308	c2	1	1	3	7200	1550172430	1550172430	1550173026	1550173044	0	/tmp
891	1550173099	bcjIT205	665	1000	0	-1	9223372036854776308	e5	1	4	3	7200	1550172431	1550172431	1550173080	1550173098	0	/tmp
998	1550173262	ITXjis20	772	1000	0	-1	9223372036854776308	c1	1	0	3	7200	1550172432	1550172432	1550173244	1550173261	0	/tmp
999	1550173258	fgCLq5x2	773	1000	0	-1	9223372036854776308	c10	1	9	3	7200	1550172432	1550172432	1550173245	1550173258	0	/tmp
1005	1550173268	LvIvPMFY	779	1000	0	-1	9223372036854776308	e8	1	7	3	7200	1550172432	1550172432	1550173255	1550173268	0	/tmp
1022	1550173298	zjBwZgdS	796	1000	0	-1	9223372036854776308	e5	1	4	3	7200	1550172432	1550172432	1550173279	1550173298	0	/tmp
1034	1550173309	oNOMzIAd	808	1000	0	-1	9223372036854776308	e6	1	5	3	7200	1550172433	1550172433	1550173298	1550173309	0	/tmp
1124	1550173448	RISepmX	898	1000	0	-1	9223372036854776308	e9	1	8	3	7200	1550172434	1550172434	1550173431	1550173448	0	/tmp
1174	1550173524	ziPMoIj	948	1000	0	-1	9223372036854776308	c10	1	9	3	7200	1550172434	1550172434	1550173505	1550173523	0	/tmp
1198	1550173562	IGRCOp3l	972	1000	0	-1	9223372036854776308	c2	1	1	3	7200	1550172434	1550172434	1550173547	1550173562	0	/tmp
1255	1550173652	ckZYchdh	1029	1000	0	-1	9223372036854776308	c3	1	2	3	7200	1550172435	1550172435	1550173638	1550173652	0	/tmp
1258	1550173657	Ujtw3zRK	1032	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172435	1550172435	1550173640	1550173657	0	/tmp
1316	1550173745	d68grCAQ	1090	1000	0	-1	9223372036854776308	c5	1	4	3	7200	1550172436	1550172436	1550173730	1550173745	0	/tmp
1435	1550173919	s8SredGm	1209	1000	0	-1	9223372036854776308	e7	1	6	3	7200	1550172437	1550172437	1550173905	1550173919	0	/tmp
1467	1550173968	wEXBt5vV	1241	1000	0	-1	9223372036854776308	e9	1	8	3	7200	1550172438	1550172438	1550173955	1550173968	0	/tmp
1481	1550173986	Edz7Wbs9	1255	1000	0	-1	9223372036854776308	c8	1	7	3	7200	1550172438	1550172438	1550173974	1550173986	0	/tmp
1483	1550173992	KvF56vZ	1257	1000	0	-1	9223372036854776308	c10	1	9	3	7200	1550172438	1550172438	1550173975	1550173992	0	/tmp
1552	1550174091	IFxwAlb3	1326	1000	0	-1	9223372036854776308	e8	1	7	3	7200	1550172439	1550172439	1550174077	1550174091	0	/tmp
1645	1550174236	4utzPN7b	1419	1000	0	-1	9223372036854776308	c7	1	6	3	7200	1550172440	1550172440	1550174217	1550174236	0	/tmp
1651	1550174241	CPB3mzin	1425	1000	0	-1	9223372036854776308	c10	1	9	3	7200	1550172440	1550172440	1550174223	1550174241	0	/tmp
1665	1550174262	LjDJHsh	1439	1000	0	-1	9223372036854776308	e4	1	3	3	7200	1550172440	1550172440	1550174247	1550174262	0	/tmp
1692	1550174299	9uUVQ3pQ	1466	1000	0	-1	9223372036854776308	c9	1	8	3	7200	1550172440	1550172440	1550174287	1550174299	0	/tmp
1693	1550174310	Qx3LvlVF	1467	1000	0	-1	9223372036854776308	e8	1	7	3	7200	1550172440	1550172440	1550174291	1550174310	0	/tmp



Admin Job Viewer

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[Single Group Statistics Script Generation](#)
[help_outlinehelp](#)

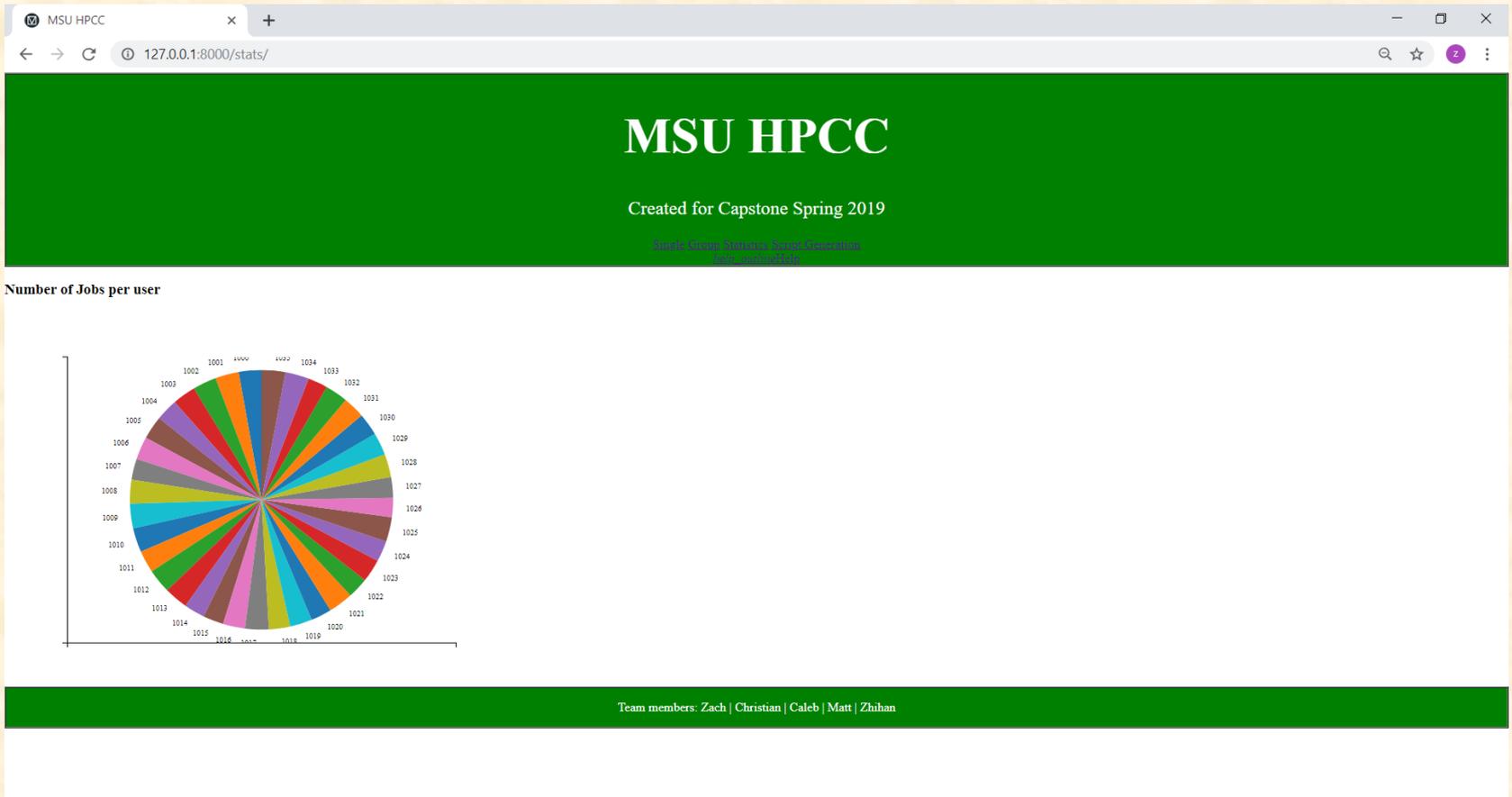
Enter userID

1025's Jobs

id_user	job_db_inx	job_name	cpus_req
1025	31	5H1YXNA	1
1025	59	iq8ipbwf	1
1025	67	9s4TZftY	1
1025	103	FWWBJJFN	1
1025	245	EbiOpQ3m	1
1025	278	TOzMKKSp	1
1025	399	JFM9gKOR	1
1025	455	ZtkITZT1	1
1025	457	7zK4UaI	1
1025	536	CSOqCFpl	1
1025	623	dHvq2FH8	1
1025	675	pYJLS0L	1
1025	677	J98Jw0gj	1
1025	684	dVhdLvNK	1
1025	715	Ef6Z8nhH	1
1025	740	IJHTV7OW	1
1025	753	z3uMwRrW	1
1025	761	LKQY7IU	1
1025	818	JpA39sCa	1
1025	821	xA7teDKa	1
1025	830	8sZ5AVTc	1
1025	828	8DfDdJ5	1
1025	845	Yl1xrZsQ	1
1025	886	nxzSVdKF	1
1025	917	ri7nv6z7	1
1025	945	sTmbCVuU	1
1025	990	dS7fgf40	1
1025	1044	avMJonIO	1
1025	1069	VLzANswl	1
1025	1071	WZekGWdK	1
1025	1100	evps4zo7	1
1025	1103	JB0ADvrD	1
1025	1122	zQEoGtcw	1
1025	1145	8ba2mqDa	1
1025	1149	hNTVeBEf	1
1025	1181	nAmD4mBG	1



Statistics



Bash Script Generator

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Single Group Statistics Script Generation
[View Job/JobID](#)

Wall time:	10:00:00
Job name:	ML Task
CodeDirectory:	/CodePath/HPCC/
Nodes:	2
CPUs:	33
MemoryPerCPU:	2 Gb
Tasks:	2
ExecutableName:	Classifier.py

Submit

```
#!/bin/bash

##SBATCH Lines for Resource Request ##

#SBATCH --time=10:00:00
#SBATCH --nodes=2
#SBATCH --tasks=2
#SBATCH --mem-per-cpu=2 Gb
#SBATCH --job-name ML Task
##Command Lines to Run ##

cd /CodePath/HPCC/
srun -n 2 Classifier.py
```

[Download Bash File](#)

Team members: Zach | Christian | Caleb | Matt | Zihan



What's left to do?

- Connect SlurmDBD
- Create Admin Tools
- Add More Job Stats
- Implement Access Control
- Groups
- Job Submission
- Etc



Questions?

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