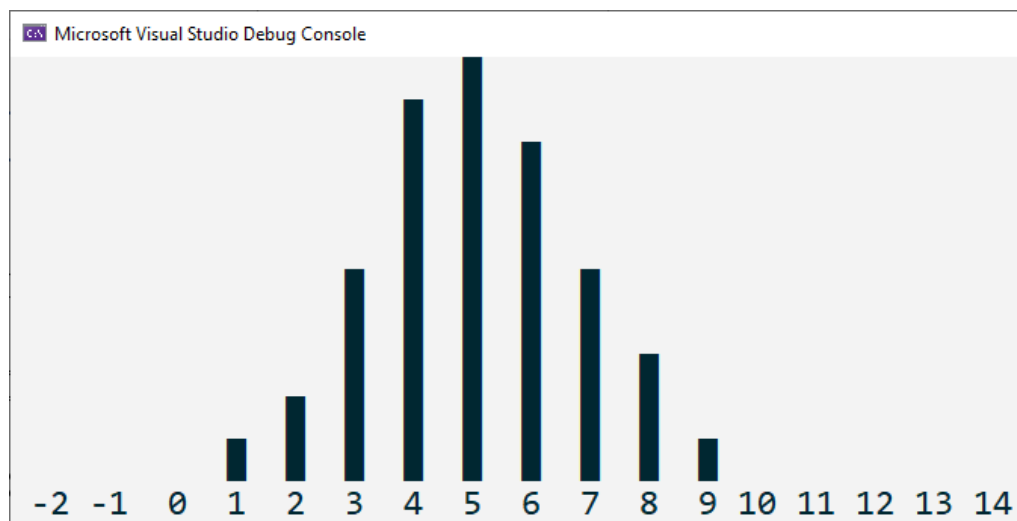
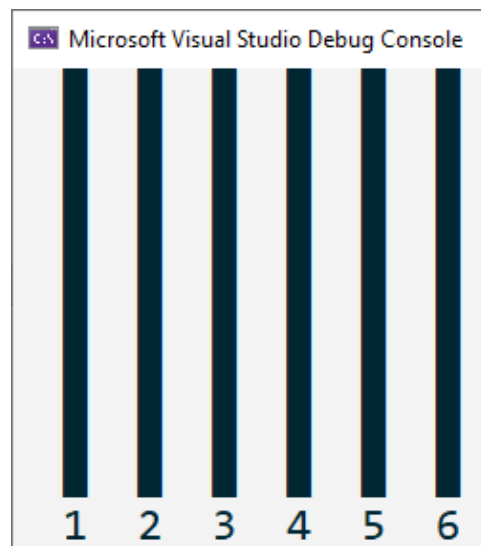


## Chapter 02: Working with Numbers and Strings



```
Microsoft Visual Studio Debug Console

JOHN.DOE@DOMAIN.COM : valid
    local=JOHN.DOE;domain=DOMAIN;dns=COM
JOHNDOE@DOMAIL.CO.UK : valid
    local=JOHNDOE;domain=DOMAIL.CO;dns=UK
JOHNDOE@DOMAIL.INFO : valid
    local=JOHNDOE;domain=DOMAIL;dns=INFO
J.O.H.N_D.O.E@DOMAIN.INFO : valid
    local=J.O.H.N_D.O.E;domain=DOMAIN;dns=INFO
ROOT@LOCALHOST : invalid
    local=;domain=;dns=
john.doe@domain.com : valid
    local=john.doe;domain=domain;dns=com
```

```
Microsoft Visual Studio Debug Console


timeout=120
```

```
Microsoft Visual Studio Debug Console


'timeout'='120'
'server'='127.0.0.1'
```

```
Microsoft Visual Studio Debug Console

timeout=120
server = 127.0.0.1
```

 Microsoft Visual Studio Debug Console

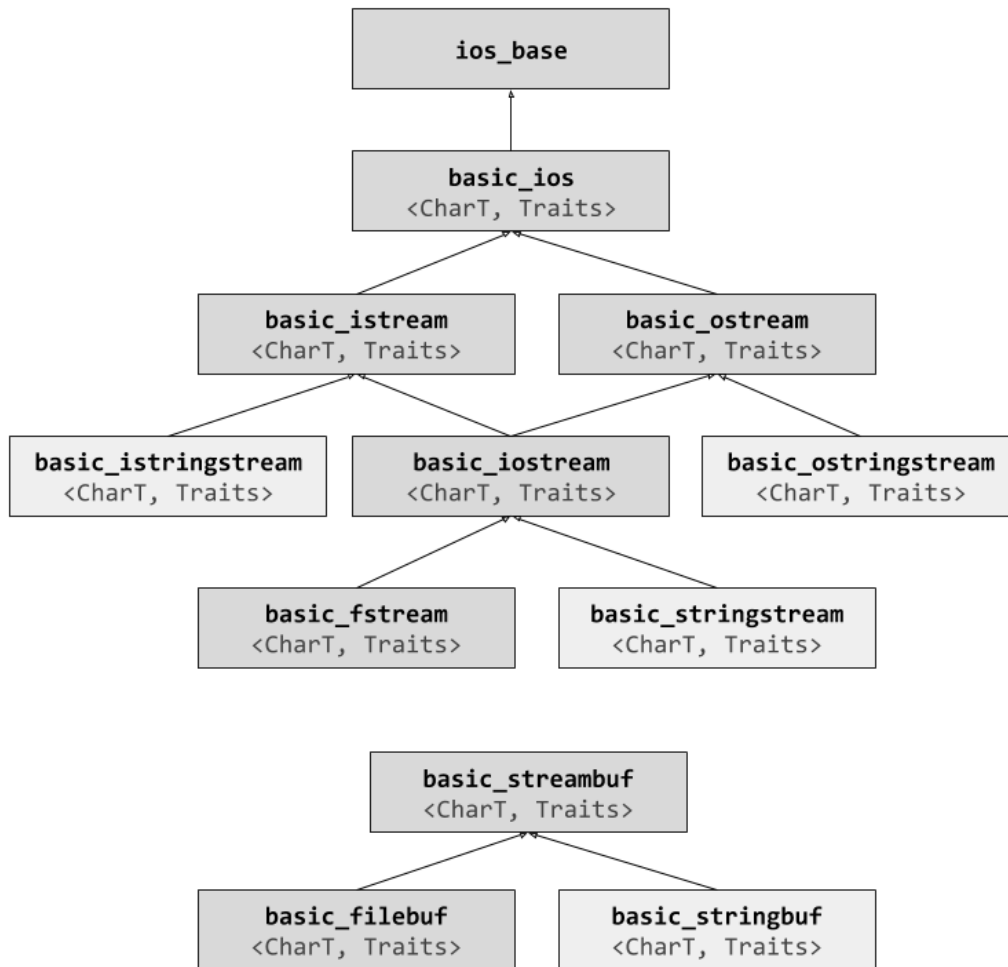
```
timeout  
server
```

 Microsoft Visual Studio Debug Console

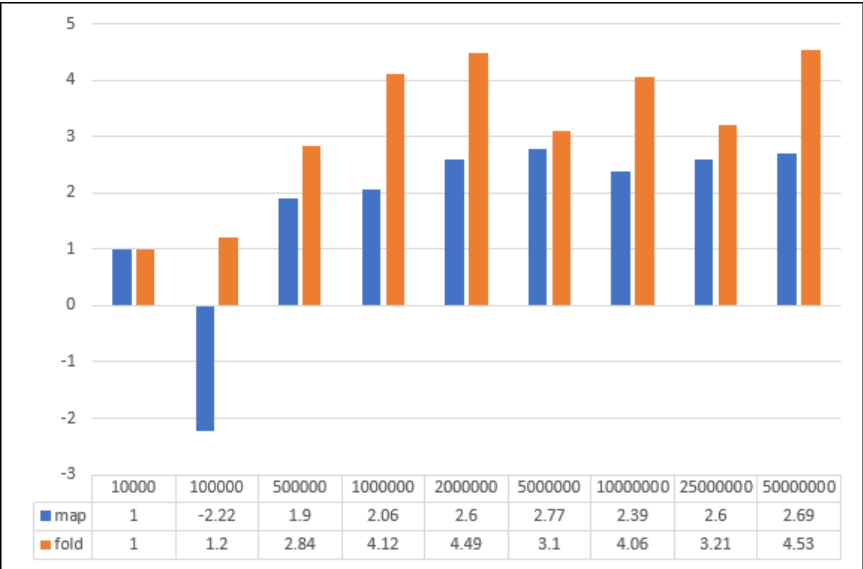
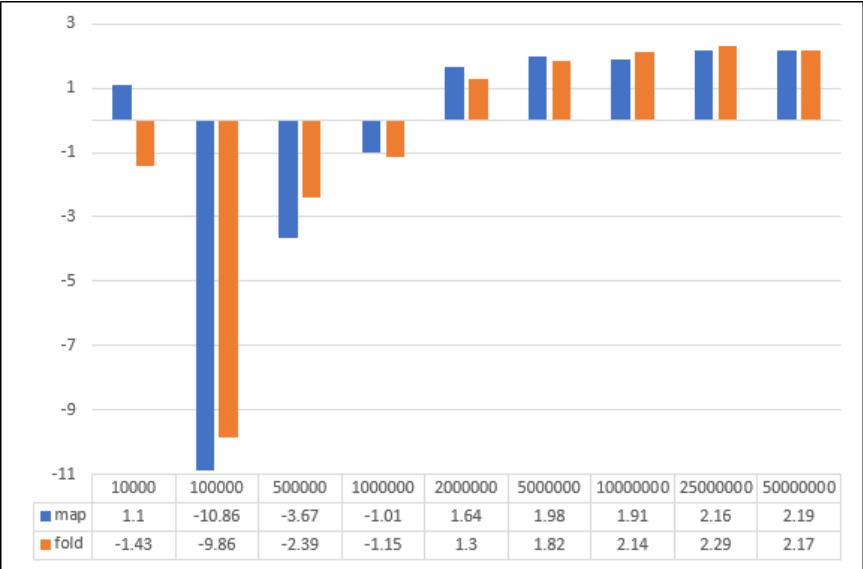
```
#remove # to uncomment a line
```

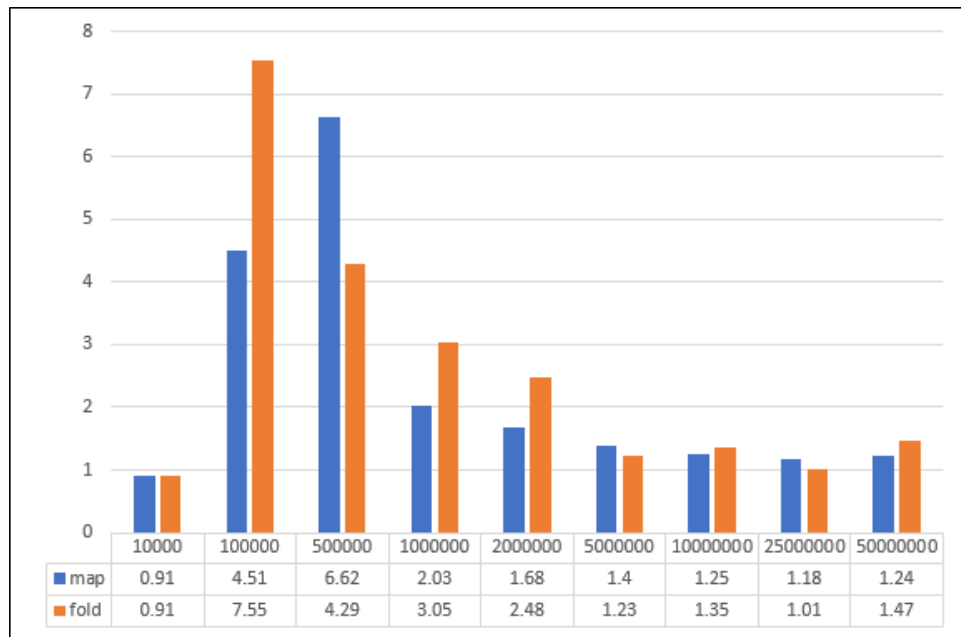
```
#retrycount=3
```

## Chapter 07: Working with Files and Streams



# Chapter 08: Leveraging Threading and Concurrency





Size	Sequential		Parallel algorithms		Parallel threads		Parallel tasks	
	map	reduce	map	reduce	map	reduce	map	reduce
1000000	0.505	0.246	0.386	0.121	1.59	0.124	0.211	0.139
2000000	1.931	0.873	0.495	0.298	0.674	0.172	0.344	0.167
3000000	1.729	1.116	0.625	0.433	1.599	0.916	0.829	0.536
4000000	2.601	1.629	1.501	0.833	1.164	0.679	0.872	0.725
5000000	3.425	2.074	1.098	0.933	1.548	1.105	1.18	0.968
10000000	5.844	3.883	2.34	1.844	2.624	2.272	2.778	1.699
20000000	11.382	7.089	4.178	2.737	5.38	2.662	4.868	2.686
50000000	27.613	18.092	10.897	6.656	11.395	7.233	10.683	7.266
100000000	58.794	34.605	22.974	14.23	33.055	15.568	22.039	13.606
200000000	112.375	69.136	45.359	27.793	52.637	26.452	49.786	32.857
500000000	288.385	173.327	115.188	64.106	144.339	73.713	144.517	79.945

					sequential	parallel
Size	Sequential	Parallel	Threads	Tasks	transform_reduce	
1000000	0.751	0.507	1.838	0.489	0.413	0.267
2000000	2.804	0.793	1.018	0.678	0.825	0.582
3000000	2.845	1.058	3.431	1.901	1.325	0.571
4000000	4.23	2.334	2.522	2.322	1.95	0.773
5000000	5.499	2.031	3.758	3.116	2.244	0.926
10000000	9.727	4.184	7.168	6.176	4.418	2.592
20000000	18.471	6.915	10.704	10.24	8.572	3.28
50000000	45.705	17.553	25.861	25.215	21.11	10.963
100000000	93.399	37.204	64.191	49.251	41.824	16.409
200000000	181.511	73.152	105.541	115.5	84.688	35.357
500000000	461.712	179.294	291.765	304.407	312.672	686.231

## Chapter 12: C++20 Core Features

<code>module;</code>	<code>module;</code>
<code>#define X</code> <code>#include "code.h"</code>	global module fragment (preprocessor directives only)
<code>export module demo;</code>	<code>export module <i>name</i>;</code>
<code>import std.core;</code> <code>import :part;</code>	module preamble (import declarations only)
<code>export int get_answer()</code> <code>{ return 42; }</code>	module purview (export declarations, internals)

