Strings

Getting started

- *//program will need to use class String to declare variables as strings. Include this at the very top of your class*
- import java.lang.String;

Syntax to create a string variable in Java

String {variable name};

An example

```
String name;

name = “Oh Boy!”;
System.out.print ( name);
```

Comparing Strings

- When using strings, we can not compare them using a ‘= =‘ sign.
- Instead we have to use a special function called String.equals(x);

For Example:

```
String s;
s = "Chen";

System.out.println(s.equals("Chens"));
//will output the boolean value false
System.out.println(!s.equals("Chen"));
//will output the boolean value _____
```

String.compareTo

- Method will return 0 if the object string and argument are equal
  - <0 if the object string precedes the argument =, and
  - >0 if the object string follows the argument.

Other String functions

//Given the declaration
String x = “ICs4U0 rules!4”

x.length()	Will return the length of the string (14)
x.charAt(0)	Will return ‘I’
x.indexOf(‘s’) x.indexOf(‘s’, 5) x.indexOf(‘x’)	Will return 2 Will return 11 Will return -1
x.substring(7) x.substring(2, 5)	Will return “rules!4” Will return “s4U”

Text conversions

- The first 32 characters in ASCII are set aside for communications and printer control.
- ASCII chart

33	!		49	1		65	A		81	Q		97	a		113	q	
34	“		50	2		66	B		82	R		98	b		114	r	
35	#		51	3		67	C		83	S		99	c		115	s	
36	$		52	4		68	D		84	T		100	d		116	t	
37	%		53	5		69	E		85	U		101	e		117	u	
38	&		54	6		70	F		86	V		102	f		118	v	
39	‘		55	7		71	G		87	W		103	g		119	w	
40	(		56	8		72	H		88	X		104	h		120	x	
41	)		57	9		73	I		89	Y		105	i		121	y	
42	*		58	:		74	J		90	Z		106	j		122	z	
43	+		59	;		75	K		91	[		107	k		123	{	
44	,		60	<		76	L		92	\		108	l		124	|	
45	-		61	=		77	M		93	]		109	m		125	}	
46	.		62	>		78	N		94	^		110	n		126	~	
47	/		63	?		79	O		95	_		111	o		127	DEL	
48	0		64	@		80	P		96	`		112	p				

Outputting the ASCII value

- To output the ASCII value of an integer, we cast the integer as a char.

- E.g.

  System.out.println((char)65);

  will output ‘A’

Character-to-integer

```
char c = '7';
int i = c - '0';
//the line above will assign 7 to i because the
   difference between ‘7’ and ‘0’ is 7
System.out.println(i);
```

Integer-to-Character

```
int x=5;
char y = (char)(x+'0');
//the line above will assign 5 to x because 5
   + ‘0’ is the character ‘5’
System.out.println(y);
```

String to Integer

```
String x="123";
int y = Integer.parseInt(x);
// parseInt will convert a string and return it
   as an integer

System.out.println(y+1);
```

Integer to String

```
int x=123;
String y = String.valueOf(x);
// valueOf will convert an integer and return
   it as a string

System.out.println(y);
```