LP104 Object-Oriented Programming
In-Class-Exercise 09 – strings

In this lab, you must complete all the following tasks. Your programs must pass the compilation and testing.

Tasks

Q1. Please write a function that converts a **string** representing a hexadecimal number into an integer (decimal number).
For example, a string is "35B7D". After conversion, the integer is 220029.
Sample Output:

```
Task1: hexadecimal number conversion
Please input your hexadecimal number (in a string):
35B7D
The decimal number of "35B7D" is 220029
```

Hint:

- You may need to use ASCII Chart to complete the conversion.
- Don't write a hard code.

Testing cases:

1. 1101

4353

2. FFFFFF

16777215

3. 489EAF

4759215

4. 35B7D

220029

5. ABCD

43981

Marking scheme:

Each counts for 10 points

Q2. Please write a program to extract sub-strings separated by a token from a string.
For example, a string is "**ABC,XYZ,FOOO,YUT,RRR,LLLAU**" and the token is "**,**".
After tokenizing operation, your program can successfully output 6 sub-strings.
Sample Output:

```
Task2: Tokenizing strings
Please input your string going to be tokenized:
ABC,XYZ,FOOO,YUT,RRR,LLLAU
Please input your token (a string)
,
The original string: "ABC,XYZ,FOOO,YUT,RRR,LLLAU"
After tokenizing
No. 1 : ABC
No. 2 : XYZ
No. 3 : FOOO
No. 4 : YUT
No. 5 : RRR
No. 6 : LLLAU
```

Hint:

- You may use **`length()`**, **`find()`**, **`erase()`**, **`substr()`** functions.
- You should write a loop to achieve the goal.
- Don't write a hard code.

Testing cases:

1. `ABC,XYZ,FOOO,YUT,RRR,LLLAU`

```
,
No. 1 : ABC
No. 2 : XYZ
No. 3 : FOOO
No. 4 : YUT
No. 5 : RRR
No. 6 : LLLAU
```

2. `ABB,,YYY,,CCC,,DDD`

```
,,
No. 1: ABB
No. 2: YYY
No. 3: CCC
No. 4: DDD
```

3. `991;2312;abc;213412;`

```
;
No. 1: 991
No. 2: 2312
No. 3: abc
No. 4: 213412
No. 5:
```

```
4. ABC1DEF1RRT1weriwpri1fs
No. 1: ABC
No. 2: DEF
No. 3: RRT
No. 4: weriwpri
No. 5: fs
```

Marking scheme:

Each counts for 10 points and output style counts for another 10 points

Appendix:

ASCII Table

0	NUL	1	SOH	2	STX	3	ETX	4	EOT	5	ENQ	6	ACK	7	BEL
8	BS	9	HT	10	NL	11	VT	12	NP	13	CR	14	SO	15	SI
16	DLE	17	DC1	18	DC2	19	DC3	20	DC4	21	NAK	22	SYN	23	ETB
24	CAN	25	EM	26	SUB	27	ESC	28	FS	29	GS	30	RS	31	US
32	SP	33	!	34	"	35	#	36	$	37	%	38	&	39	'
40	(	41	)	42	*	43	+	44	,	45	-	46	.	47	/
48	0	49	1	50	2	51	3	52	4	53	5	54	6	55	7
56	8	57	9	58	:	59	;	60	<	61	=	62	>	63	?
64	@	65	A	66	B	67	C	68	D	69	E	70	F	71	G
72	H	73	I	74	J	75	K	76	L	77	M	78	N	79	O
80	P	81	Q	82	R	83	S	84	T	85	U	86	V	87	W
88	X	89	Y	90	Z	91	[	92	\	93	]	94	^	95	_
96	`	97	a	98	b	99	c	100	d	101	e	102	f	103	g
104	h	105	i	106	j	107	k	108	l	109	m	110	n	111	o
112	p	113	q	114	r	115	s	116	t	117	u	118	v	119	w
120	x	121	y	122	z	123	{	124	|	125	}	126	~	127	DEL