Homework #4

Due date: 21:30, October 27th, Tuesday, 2015

Wonderful, Common or Ugly name

Given a not null string, determine if it is wonderful, common, or ugly.
Every character has its ascii code number. Plus the *sum* of adjacent two characters from prefix(字首) to suffix(字尾), and we get F. Plus the *difference* of adjacent two characters from suffix(字尾) to prefix(字首) , and we get E. Subtract the two numbers (F-E), and get its absolute value. The name is Wonderful if |F-E| contains only 0, 1, 8, and called Ugly if |F-E| contains only 2, 3, 4, 5, 6,7,9.
If |F-E| contains both of them, it is called Common name.

For example:

Google = {71,111,111,103,108,101}

F = (71+111)+(111+111)+(111+103)+(103+108)+(108+101) = 1038

E = (101-108)+(108-103)+(103-111)+(111-111)+(111-71) = 30

|F-E| = 1008

1008 contains only {0, 1, 8},called Wonderful.

Requirements

1. Write a C program that you can input a string and output “Wonderful”, “Common”, or “Ugly” and its |F-E| value, followed by a comma.
2. Must use array.
3. Must use function(Not just put all the code in a function)
4. You can use the function code at hint.
5. The Max Input Length is 64

Submission

Be sure to upload your source code to E3 by the due date and name your file as “**HW4_xxxxxxx.c**”, where **xxxxxxx** is your student ID.

Sample run

```
Input a name : Google

Wonderful,1008

Input a name : Facebook

Common,1374

Input a name : Apple

Ugly,794
```

Hint

1. You can use the function below to change integer to string

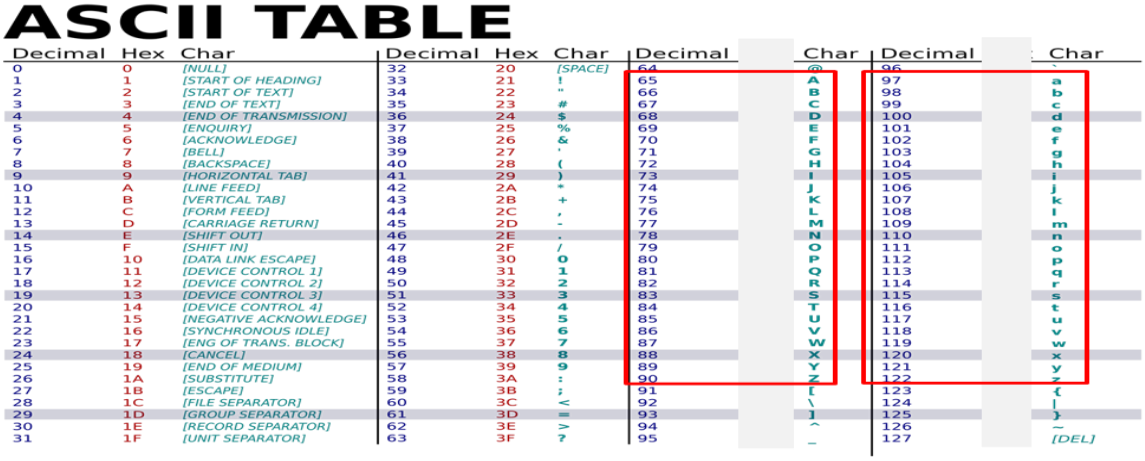
```
void int2str(int i, char *s) {
  sprintf(s,"%d",i);
}
```

EX:

```
int main (){
    int digit = 313;
    char s[64];
    int2str(313,s);
    printf(“%s\n”,s);//s is a string contains “313”
}
```

2. strlen()

3. ASCII TABLE



ASCII TABLE

Decimal	Hex	Char	Decimal	Hex	Char	Decimal		Char	Decimal		Char
0	0	[NULL]	32	20	[SPACE]	64		@	96		`
1	1	[START OF HEADING]	33	21	!	65		A	97		a
2	2	[START OF TEXT]	34	22	"	66		B	98		b
3	3	[END OF TEXT]	35	23	#	67		C	99		c
4	4	[END OF TRANSMISSION]	36	24	$	68		D	100		d
5	5	[ENQUIRY]	37	25	%	69		E	101		e
6	6	[ACKNOWLEDGE]	38	26	&	70		F	102		f
7	7	[BELL]	39	27	'	71		G	103		g
8	8	[BACKSPACE]	40	28	(	72		H	104		h
9	9	[HORIZONTAL TAB]	41	29	)	73		I	105		i
10	A	[LINE FEED]	42	2A	*	74		J	106		j
11	B	[VERTICAL TAB]	43	2B	+	75		K	107		k
12	C	[FORM FEED]	44	2C	,	76		L	108		l
13	D	[CARRIAGE RETURN]	45	2D	-	77		M	109		m
14	E	[SHIFT OUT]	46	2E	.	78		N	110		n
15	F	[SHIFT IN]	47	2F	/	79		O	111		o
16	10	[DATA LINK ESCAPE]	48	30	0	80		P	112		p
17	11	[DEVICE CONTROL 1]	49	31	1	81		Q	113		q
18	12	[DEVICE CONTROL 2]	50	32	2	82		R	114		r
19	13	[DEVICE CONTROL 3]	51	33	3	83		S	115		s
20	14	[DEVICE CONTROL 4]	52	34	4	84		T	116		t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85		U	117		u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86		V	118		v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87		W	119		w
24	18	[CANCEL]	56	38	8	88		X	120		x
25	19	[END OF MEDIUM]	57	39	9	89		Y	121		y
26	1A	[SUBSTITUTE]	58	3A	:	90		Z	122		z
27	1B	[ESCAPE]	59	3B	;	91		[	123		{
28	1C	[FILE SEPARATOR]	60	3C	<	92		\	124		|
29	1D	[GROUP SEPARATOR]	61	3D	=	93		]	125		}
30	1E	[RECORD SEPARATOR]	62	3E	>	94		^	126		~
31	1F	[UNIT SEPARATOR]	63	3F	?	95		_	127		[DEL]