PROBLEM 4.1

Using conditional operators determine: 1. Whether the character entered through the keyboard is a lowercase alphabet or not. 2. Whether the character entered through the keyboard is a special symbol or not.

ASCII Values: LOWERCASE alphabets - 97 to 122 SPECIAL Symbols - 0 to 64 UPPERCASE alphabets - 65 to 96

ASCII TABLE

Decimal	Hexadecimal	Binary	Octal	Char	Decimal	Hexadecimal	Binary	Octal	Char	Decimal	Hexadecimal	Binary	Octal	Char
0	0	0	0	*[NULL]*	48	30	110000	60	**0**	96	60	1100000	140	`
1	1	1	1	*[START OF HEADING]*	49	31	110001	61	**1**	97	61	1100001	141	**a**
2	2	10	2	*[START OF TEXT]*	50	32	110010	62	**2**	98	62	1100010	142	**b**
3	3	11	3	*[END OF TEXT]*	51	33	110011	63	**3**	99	63	1100011	143	**c**
4	4	100	4	*[END OF TRANSMISSION]*	52	34	110100	64	**4**	100	64	1100100	144	**d**
5	5	101	5	*[ENQUIRY]*	53	35	110101	65	**5**	101	65	1100101	145	**e**
6	6	110	6	*[ACKNOWLEDGE]*	54	36	110110	66	**6**	102	66	1100110	146	**f**
7	7	111	7	*[BELL]*	55	37	110111	67	**7**	103	67	1100111	147	**g**
8	8	1000	10	*[BACKSPACE]*	56	38	111000	70	**8**	104	68	1101000	150	**h**
9	9	1001	11	*[HORIZONTAL TAB]*	57	39	111001	71	**9**	105	69	1101001	151	**i**
10	A	1010	12	*[LINE FEED]*	58	3A	111010	72	**:**	106	6A	1101010	152	**j**
11	B	1011	13	*[VERTICAL TAB]*	59	3B	111011	73	**;**	107	6B	1101011	153	**k**
12	C	1100	14	*[FORM FEED]*	60	3C	111100	74	**<**	108	6C	1101100	154	**l**
13	D	1101	15	*[CARRIAGE RETURN]*	61	3D	111101	75	**=**	109	6D	1101101	155	**m**
14	E	1110	16	*[SHIFT OUT]*	62	3E	111110	76	**>**	110	6E	1101110	156	**n**
15	F	1111	17	*[SHIFT IN]*	63	3F	111111	77	**?**	111	6F	1101111	157	**o**
16	10	10000	20	*[DATA LINK ESCAPE]*	64	40	1000000	100	**@**	112	70	1110000	160	**p**
17	11	10001	21	*[DEVICE CONTROL 1]*	65	41	1000001	101	**A**	113	71	1110001	161	**q**
18	12	10010	22	*[DEVICE CONTROL 2]*	66	42	1000010	102	**B**	114	72	1110010	162	**r**
19	13	10011	23	*[DEVICE CONTROL 3]*	67	43	1000011	103	**C**	115	73	1110011	163	**s**
20	14	10100	24	*[DEVICE CONTROL 4]*	68	44	1000100	104	**D**	116	74	1110100	164	**t**
21	15	10101	25	*[NEGATIVE ACKNOWLEDGE]*	69	45	1000101	105	**E**	117	75	1110101	165	**u**
22	16	10110	26	*[SYNCHRONOUS IDLE]*	70	46	1000110	106	**F**	118	76	1110110	166	**v**
23	17	10111	27	*[END OF TRANS. BLOCK]*	71	47	1000111	107	**G**	119	77	1110111	167	**w**
24	18	11000	30	*[CANCEL]*	72	48	1001000	110	**H**	120	78	1111000	170	**x**
25	19	11001	31	*[END OF MEDIUM]*	73	49	1001001	111	**I**	121	79	1111001	171	**y**
26	1A	11010	32	*[SUBSTITUTE]*	74	4A	1001010	112	**J**	122	7A	1111010	172	**z**
27	1B	11011	33	*[ESCAPE]*	75	4B	1001011	113	**K**	123	7B	1111011	173	**{**
28	1C	11100	34	*[FILE SEPARATOR]*	76	4C	1001100	114	**L**	124	7C	1111100	174	**|**
29	1D	11101	35	*[GROUP SEPARATOR]*	77	4D	1001101	115	**M**	125	7D	1111101	175	**}**
30	1E	11110	36	*[RECORD SEPARATOR]*	78	4E	1001110	116	**N**	126	7E	1111110	176	**~**
31	1F	11111	37	*[UNIT SEPARATOR]*	79	4F	1001111	117	**O**	127	7F	1111111	177	*[DEL]*
32	20	100000	40	*[SPACE]*	80	50	1010000	120	**P**					
33	21	100001	41	**!**	81	51	1010001	121	**Q**					
34	22	100010	42	**"**	82	52	1010010	122	**R**					
35	23	100011	43	**#**	83	53	1010011	123	**S**					
36	24	100100	44	**$**	84	54	1010100	124	**T**					
37	25	100101	45	**%**	85	55	1010101	125	**U**					
38	26	100110	46	**&**	86	56	1010110	126	**V**					
39	27	100111	47	**'**	87	57	1010111	127	**W**					
40	28	101000	50	**(**	88	58	1011000	130	**X**					
41	29	101001	51	**)**	89	59	1011001	131	**Y**					
42	2A	101010	52	*****	90	5A	1011010	132	**Z**					
43	2B	101011	53	**+**	91	5B	1011011	133	**[**					
44	2C	101100	54	**,**	92	5C	1011100	134	****					
45	2D	101101	55	**-**	93	5D	1011101	135	**]**					
46	2E	101110	56	**.**	94	5E	1011110	136	**^**					
47	2F	101111	57	**/**	95	5F	1011111	137	**_**					

Figure 1: ASCII TABLE

ALGORITHM

1. Start
2. Declare a character variable word, and integer variable a
3. Input word
4. Calculate the ASCII Value of the word variable and store it into a
5. If a >= 97 or a <= 122, Display “Lowercase alphabet”
6. If a >= 0 or a <= 64, Display “Special Symbol”
7. Stop

PSEUDOCODE

```
DECLARE CHARACTER word, INTEGER a
INPUT word
ASSIGN ASCII_VALUE of word to a
IF a >= 97 AND a <= 122
    DISPLAY "Lowercase Alphabet"
ENDIF
IF a >= 0 or a <= 64
    DISPLAY "Special Symbol"
ENDIF
```

FLOWCHART

```
flowchart TD
A([Start]) --> B[[Declare CHARACTER variable word, INTEGER variable a]]
B --> C[/Input word/]
C --> D[[Assign the ASCII Value of word to a]]
D --> E{If a >= 97 and a < 122}
E --> |True| F[/DISPLAY "Lowercase Alphabet"/]
E --> |False| G{IF a >= 0 or a <= 64}
G --> |True| H[/DISPLAY "Special Symbol"/]
G --> |False| I([Stop])
F --> I
```