Assignment 6: Standard library functions

You should read following topics before starting this exercise

- 1. Use of switch statement to create menus as in exercise3
- 2. Use of while and do while loops as in exercise4

A function is a named sub-module of a program, which performs a specific, well-defined task. It can accept information from the calling function in the form of arguments and return only 1 value, C provides a rich library of standard functions. We will explore some such function libraries and use these functions in our programs.

ctype.h: contains function prototypes for performing various operations on characters. Some commonly used functions are listed below.

Function Name	Purpose	
isalpha		Example
isalnum	Check whether a character is a alphabet	if (isalpha(ch))
isdigit	Check whether a character is alphanumeric	if (isalnum(ch))
100000	Check whether a character is a digit	if (isdigit(ch))
isspace	Check whether a character is a space	if (isspace(ch))
ispunct	Check whether a character is a punctuation symbol	
isupper		if (ispunct(ch))
574.7	Check whether a character is uppercase alphabet	if (isupper(ch))
islower	Check whether a character is lowercase alphabet	if (isupper(ch))
toupper	Converts a character to uppercase	ch = toupper(ch)
tolower	Converts a character to lowercase	ch = tolower(ch)

math.h: This contains function prototypes for performing various mathematical operations on numeric data. Some commonly used functions are listed below.

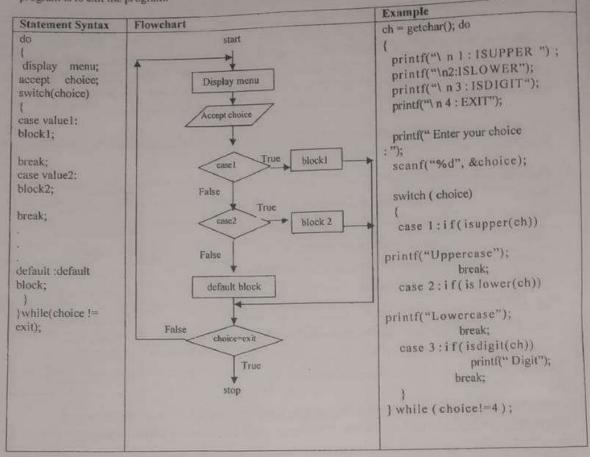
Function Name	Purpose	Example
cos	cosine	a*a+b*b - 2*a*b*cos(abangle)
exp(double x)	exponential function, computes e*	exp(x)
log	natural logarithm	c= log(x)
log10	base-10 logarithm	y=log10(x)
pow(x,y)	compute a value taken to an exponent, xy	y = 3*pow(x, 10)
sin	sine	z= sin(x) / x
sgrt	square root	delta=sqrt(b*b - 4*a*c)

Note: If you want to use any of the above functions you must include the library for example #include <ctype.h>

#include<math.h>

In case of math library, it needs to be linked to your program. You have to compile the program as follows \$ cc filename-lm

A program that does multiple tasks, provides a menu from which user can choose the appropriate task to be performed. The menu should appear again when the task is completed so that the user can choose another performed. This process continues till the user decides to quit. A menu driven program can be written using a task. This process continues till the user decides to quit. A menu driven program can be decided in a menu driven combination of do-while loop containing a switch statement. One of the options provided in a menu driven program is to exit the program.



Set A. Write C programs for the following problems

 Write a program, which accepts a character from the user and checks if it is an alphabet, digit or punctuation symbol. If it is an alphabet, check if it is uppercase or lower case and then change the case.

Set B. Write C programs for the following problems

1. Accept x and y coordinates of two points and write a menu driven program to perform the following operations till the user selects Exit.

i. Slope of line between the points.

ii. Check whether they lie in the same quadrant.

iii EXIT

(Hint: Use formula m = (y2-y1)/(x2-x1) to calculate slope of line.)

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0: Not done	2: Late Complete	4: Complete
: Incomplete	3: Needs improvement	5: Well Done