

DS – Lab Test – 001

Total Marks: 100

Duration: 180 Min

Instructions:

- Follow coding guidelines.
- Check for error conditions.
- Do not use functions like scanf, exit, perror etc.
- Use printf only in non-computing functions

1. The Indian Railways runs a train CHENNAI MAIL(#12658) between KSR BENGALURU and CHENNAI CENTRAL with the following details:

Code	Name	Arrives	Dept.	Halt	Dist.	Day
SBC	KSR BENGALURU	Starts	22:40	0m	0	1
BNC	BENGALURU CANT	22:50	22:52	2m	4	1
BWT	BANGARAPET	23:43	23:45	2m	70	1
JTJ	JOLARPETTAI	0:58	1:00	2m	148	2
KPD	KATPADI JN	2:08	2:10	2m	231	2
AJJ	ARAKKONAM	2:58	3:00	2m	292	2
PER	PERAMBUR	3:48	3:50	2m	361	2
MAS	CHENNAI CENTRAL	4:35	Stops	0m	367	2

Build appropriate data structures to effectively implement the following functions for computing:

- a. Distance between two stations.
- b. Total distance travelled from origin, for a given current station name/code.
- c. Slowest travel time between stations.
- d. Fastest travel time between stations.
- e. Get next station name/code, given current station name/code.
- f. Get previous station name/code, given current station name/code.
- g. Travel time between two stations.
- h. Total time travelled from origin for a given station name/code.
- i. The remaining travel time to reach final destination from a given station name/code.