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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Problem Solving Through Programming In C (course)

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Course outline

- How does an NPTEL online course work? ()
- Week 0 : ()
- Week 1 ()
- Week 2 ()
- Week 3 ()
- Week 4 ()
- Week 5 ()

Week 11 : Programming Assignment 1

Due on 2023-10-12, 23:59 IST

The velocity of a car at different time instant is given as

Time (t)	10	15	18	22	30
Velocity $v(t)$	22	26	35	48	68

A linear Lagrange interpolant is found using these data points. Write a C program to find the velocity of the car at different time instants. (Taken from test cases)

Your last recorded submission was on 2023-10-06, 01:21 IST

Select the Language for this assignment. C

```c
#include<stdio.h>
int main()
{
  float t[100]={10,15,18,22,30}, v[100]={22,26,35,48,68};
  float a; //Value of the t to find the respective value of v(t)
  scanf("%f", &a);  // This will be taken from test cases
int i,j;
float b,c,k=0;
for(i=0;i<5;i++)
{
  b=1;c=1;
  for(j=0;j<5;j++)
  {
    if(j!=i)
    {
      b=b*(a-t[j]);
      c=c*(t[i]-t[j]);
    }
  }
  k=k+((b/c)*v[i]);
}
```

```
0 printf("The respective value of the variable v is: %.2f", k);
1   return 0;
2 }
```

You may submit any number of times before the due date. The final submission will be considered for grading.

This assignment has Public Test cases. Please click on "Compile & Run" button to see the status of Public test cases. Assignment will be evaluated only after submitting using Submit button below. If you only save as or compile and run the Program , your assignment will not be graded and you will not see your score after the deadline.

Save as Draft | Compile & Run | Submit | Reset

Sample Test Cases

	Input	Output
Test Case 1	25	The respective value of the variable v is: 56.42
Test Case 2	16	The respective value of the variable v is: 28.74