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| **Date:16/05/2021** | **Week Number: 2** |

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| **1** | Write a program to calculate the grade of the student according to the specified marks. Grade A:Marks(>85 and <=100)  Grade B:Marks(>60 and <=85)  Grade C:Marks(>40 and <=60)  Grade D:Marks(>30 and <=40)  Fail: Marks(<30)  **Sample Input:**  Enter your marks:60  **Sample Output:**  You got grade C |
|  | Program:  #include <stdio.h>  int main()  {  printf("Enter the marks: ");  int marks;  scanf("%d", &marks);  if (marks>80 && marks<=100)  printf("Grade A\n");  else if (marks>60 && marks<=85)  printf("Grade B\n");  else if (marks>40 && marks<=60)  printf("Grade C\n");  else if (marks>30 && marks<=40)  printf("Grade D\n");  else  printf("FAIL\n");  } |
|  | **Output Screenshot:** |
| **2** | **Write a Program to convert all characters in a given line from lower case to upper case.**  **Sample Input:**  Enter characters to convert case  I am student of 2nd Semester!  **Sample Output**:  I AM STUDENT OF 2ND SEMESTER! |
|  | **Program:**  #include <stdio.h>  int main()  {  char ch;  while ((ch =getchar()) != '\n')  {  putchar(toupper(ch));  }  printf("\n");  } |
|  | **Output Screenshot:** |
| **3** | **Write a C program using bitwise operators for the following:**  i) check whether specified bit is set or not  ii) set the specified bit and print the result  iii) clear the specified bit and print the result  **Sample Input/Output:**  Enter the number which you want check  25  Input number is 25  Enter the bit position, starts from zero  2  bit is not set  Enter the bit position, which you want to set  4  set : 16  The number after set is 25  Enter the bit position, which bit you want to clear  3  set : 0  The number after clear is 17 |
|  | **Description:**   1. **To check whether the first bit is set or not**   **N&(1<<I) is zero then at I bit its not set**  **Is zero then at I bit its set 25: 1 1 0 0 1**  **2^1 2^0**  **I is the bit number**   1. **To set at particluar bit**   **N|(1<<I)**  **Program:**  **For Question 1:**  #include <stdio.h>  int main()  {  int num, n;  printf("Enter the number that you want to check\n");  scanf("%d", &num);  printf("Input number is %d\n", num);  printf("Enter the bit position, starts from zero\n");  scanf("%d", &n);  if (num & (1<<n))  printf("Bit is set\n");  else  printf("Bit is not set\n");  }  **For Part 2:**  #include<stdio.h>  int main()  {  int n, k, num;  printf("Enter the number\n");  scanf("%d", &num);  printf("Enter the bit position which you want to set\n");  scanf("%d", &k);  printf("set : ");  scanf("%d", &n);  num = (num | (1 << (k - n)));  printf("The number after set is %d\n", num);  }  **For Part 3:**  #include <stdio.h>  int main()  {  int n, k, num;  printf("Enter the number\n");  scanf("%d", &num);  printf("Enter the bit position which you want to clear\n");  scanf("%d", &k);  printf("set : ");  scanf("%d", &n);  num = (num & (~(1 << (k - n))));  printf("The number after clear is %d\n", num);  } |
|  | **Output Screenshot:** |
| **4** | **a)Write a program to generate a multiplication table using for loop**  **b)Write a program to print the following pattern**  \*  \* \*  \* \* \*  \* \* \* \*  \* \* \* \* \* |
|  | **Program:**  **A)**  #include <stdio.h>  int main()  {  int n;  printf("Enter the number that you want to get the multiplication table : ");  scanf("%d", &n);  for (int i=1;i<=10;i++)  printf("%d X %d = %d\n", n, i, n\*i);  }  **B)**  #include <stdio.h>  int main()  {  int n = 4;  for (int i = 0; i < n; i++)  {  for (int j = 0; j <= i; j++)  printf("\*");  printf("\n");  }  } |
|  | **Output Screenshot:** |
| **5** | **Write a program to implement a Simple Calculator using switch Statement**  **Sample input:**  Enter an operator (+, -, \*,): +  Enter two operands: 3 4  **Sample Output:**  3.0 + 4.0 = 7.0  **Sample input:**  Enter an operator (+, -, \*,): -  Enter two operands: 7 6  **Sample Output:**  7.0 - 6.0 = 1.0 |
|  | **Program:**  #include <stdio.h>  int  main()  {  double a, b;  char oper;  printf("Choose the operator(+, -, \*, /) : ");  scanf("%c", &oper);  printf("Enter the two operands\n");  scanf("%lf%lf", &a, &b);  switch (oper)  {  case '+':  printf("%lf + %lf = %lf\n", a, b, a + b);  break;  case '-':  printf("%lf - %lf = %lf\n", a, b, a - b);  break;  case '\*':  printf("%lf \* %lf = %lf\n", a, b, a \* b);  break;  case '/':  printf("%lf / %lf = %lf\n", a, b, a / b);  break;  default:  printf("Error! Invalid operator");  }  } |
|  | **Output Screenshot:** |
| **6** | **Write a program to validate a given date and find the next date**  **Sample input:**  Enter the date 12  Enter the month 12  Enter the year 2000  **Sample Output:**  Date is valid & next date is: 13/12/2000  **Sample input:**  Enter the date 1  Enter the month 13  Enter the year 2000  **Sample Output:**  Month is invalid |
|  | **Program:**  #include <stdio.h>  int main()  {  int dd;  int mm;  int yy;  int max1;  printf("Enter the date\n");  scanf("%d", &dd);  printf("Enter the month\n");  scanf("%d", &mm);  printf("Enter the year\n");  scanf("%d", &yy);  if (mm == 1 || mm == 3 || mm == 5 || mm == 7 || mm == 8 || mm == 10 || mm == 12)  max1 = 31;  else if (mm == 4 || mm == 6 || mm == 9 || mm == 11)  max1 = 30;  else if (yy % 4 == 0 && yy % 100 != 0 || yy % 400 == 0)  max1 = 29;  else  max1 = 28;  if (mm < 1 || mm > 12)  printf("The month is invalid\n");  else if (dd < 1 || dd > max1)  printf("The date is invalid\n");  else if (dd == max1 && mm != 12)  {  dd = 1;  mm = mm + 1;  printf("Date is valid and next date is :%d/%d/%d\n", dd, mm, yy);  }  else if (dd == max1 && mm == 12)  {  dd = 1;  mm = 1;  yy = yy + 1;  printf("Date is valid and next date is :%d/%d/%d\n", dd, mm, yy);  }  else  {  dd = dd + 1;  printf("Date is valid and next date is :%d/%d/%d\n", dd, mm, yy);  }  } |
|  | **Output Screenshot:** |