# PROJECT REPORT


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In

Computer Science

## COMPUTER ORGANIZATION ASSEMBLY LANGUAGE


## Submitted By:

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# ***ACKNOWLEDGMENT***

**First and the foremost I would like to thank to my Almighty for giving me courage to a word of thanks to my teacher, friends and other sources that gave an unending support and helped me in numerous ways from the first stage of my term assignment conceived.**

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# 1. Abstract :

Assembly language is the most powerful computer programming language available, and it gives programmers the insight required to write effective code in high-level languages. Learning assembly language is well worth the time and effort of every serious programmer.

Assembly level is a low level programming language; In this project we are using assembly language to perform basic Quiz system. The Quiz System based on simple and easy functions and make it error free and easy to read for processor. The project is based oin 10 simple questions where user can answer the questions if the user enters wrong answer user will loss 1 mark on each question. In the end user can see the results and user can re-attempt the quiz as per requirement.

# 2. Introduction:

This is a brief introduction to assembly language. Assembly language is the most basic programming language available for any processor. With assembly language, a programmer works only with operations implemented directly on the physical CPU. Assembly language lacks high-level conveniences such as variables and functions, and it is not portable between various families of processors. Nevertheless, assembly language is the most powerful computer programming language available, and it gives programmers the insight required to write effective code in high-level languages. Learning assembly language is well worth the time and effort of every serious programmer.

In Assembly language programming our project is to create a Quiz system by using Assembly language functionalities. We connected Assembly language code with real-world problems and create a project on Question based Quiz System. The project Quiz System very easy to use and helps in a user friendly way.

## 3.Software Requirement:

In this project we are using following software and System Requirements:

- Windows 7,8,10
- Notepad / Notepad++
- Tasm 1.4
- MS Word 2010

## 4. Project Description:

We made this project Quiz system on game concept. In this quiz, we have set 10 questions. For each right answer 1 mark will be increased and for each wrong answer 1 mark will be decreased from total points and at the end of the quiz total marks will be shown.
In this project We have basically used some technical terms .
JMP
JE /JNE
INC / DEC
ADD
Now we will discuss about the some important part of our project code.

```
.DATA

MSG1 DB '                .....WELCOME TO YOUR QUIZ.....$'
MSG2 DB 'Rules for Attempting Quiz : $'
MSG3 DB '*. For Every Correct answer you will get 1 point.$'
MSG4 DB '*. For Every Wrong answer 1 Point will cut from your total point.$'
MSG5 DB 'Press Enter to start the quiz : $'
MSG6 DB 'Right Answer....$'
MSG7 DB 'Wrong Answer....$'
MSG8 DB 'You have successfully completed your quiz.$'
MSG9 DB 'Your Total obtained point is : $'
MSG10 DB '0 to Exit.$'
MSG11 DB '                    ***Thank you.! ***$'
Q1 DB '1. The last statement of the source program should be _______ $'
QA1 DB '   a) END   b) Stop   c) Return$'
Q2 DB '2. . The data size of a word is _________$'
QA2 DB '   a) 8-byte    b) 2-byte    c) 10-byte$'
Q3 DB '3. A Borland Turbo Assembler.?$'
QA3 DB '   a) Asm    b) Nasm    c) Tasm$'
Q4 DB '4. The instructions that tell the assembler what to do.$'
QA4 DB '   a) Logical instructions    b) Excetuable Instructions    c) Pseudo-ops$'
Q5 DB '5.  Each byte of character is stored as its ASCII value in _______$'
QA5 DB '   a) Hexadecimal    b) Octadecimal    c) Binary$'
Q6 DB '6. The instructions like MOV or ADD are called as ______$'
QA6 DB '   a) Command    b) Operators   c) Op-Code$'
Q7 DB '7. Assembly Language is ________level programming$'
QA7 DB '   a) High    b) Low   c) Mid$'
Q8 DB '8.  Assembly language may also be called _______ machine code$'
QA8 DB '   a) Character   b) Numeric    c) Symbolic$'
Q9 DB '9. The brain of any Computer is_____$'
QA9 DB '   a) CPU    b) 26    c) 19$'
Q10 DB '10. What is meant by dedicated computer?$'
QA10 DB '   a) Assigned One & only task  b) for One Person    c) A Software$'
.CODE
```

We have set 10 variables from msg 1 to msg9 for printing our desired strings and also we have used Q1-Q9 and QA1-QA9 for printing our desired questions and their options.

```
MAIN PROC
START:
  MOV AH,2
  MOV DL,0AH
  INT,21H
  MOV DL,0DH

CMP AL,'1'
JE START

CALL NL
CALL NL
```

Now we have taken a start level. At first we have printed a new line and then we have taken an input to compare carriage return. If it is press 1 then it will go to the QSn1 level and user will reattempts the Quiz.

Now we will go to the question 1 level and 1 input will be taken and it will be compared to the correct answer. If it is eqal then it will go to the Qsn2 level otherwise it will reach to the Qsnw2 level.

```
    QSN1:
    CALL NL

    LEA DX,Q1
    MOV AH,9
    INT 21H

    CALL NL

    LEA DX,QA1
    MOV AH,9
    INT 21H

    CALL NL

    MOV AH, 1
    INT 21H
    CMP AL, 'a'
    JE QSN2
    JNE QSNW2

    QSN2:
    CALL NL

    LEA DX,MSG6
    MOV AH,9
    INT 21H

    INC BL
    CALL NL

    CALL QN2

    CALL INPUT

    CMP AL, 'b'
    JE QSN3
```

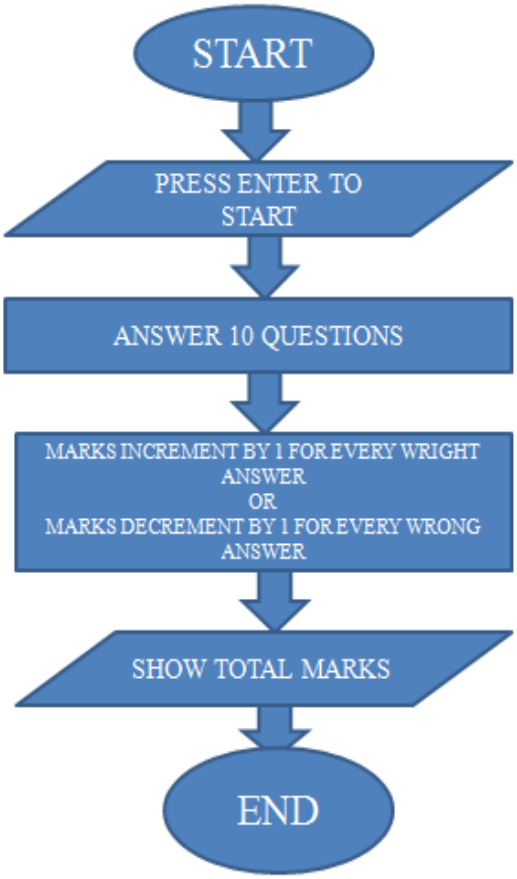
```
QSN2:
CALL NL

LEA DX,MSG6
MOV AH,9
INT 21H

INC BL
CALL NL

CALL QN2

CALL INPUT

CMP AL, 'b'
JE QSN3
JNE QSNW3

QSNW2:
CALL NL

LEA DX,MSG7
MOV AH,9
INT 21H

DEC BL
CALL NL

CALL QN2
CALL INPUT

CMP AL, 'b'
JE QSN3
JNE QSNW3
```

In QSnw2 level **BL** will be decremented for wrong answer then again the same procedure for input will take place.

```
1148
1149        ADD BL, 48
1150        MOV AH, 2
1151        MOV DL, BL
1152        INT 21H
1153        MOV AH, 4CH
1154        INT 21H
621         CMP AL,'1'
622         JE START
623
624         CALL NL
625         CALL NL
626
627         LEA DX,MSG11
628         MOV AH,9
629         INT 21H
630
631         MOV AH, 4CH
632         INT 21H
633
634         MAIN ENDP
635     END MAIN
636
```

In exit level we have added 48 with **BL** to convert our inner ASCII to decimal so that the user may easily understand the obtained marks, if user press 1 then he will re-attempts the quiz from Q#1.

## 5 . Flow Chart:


START
PRESS ENTER TO START
ANSWER 10 QUESTIONS
MARKS INCREMENT BY 1 FOR EVERY WRIGHT ANSWER
OR
MARKS DECREMENT BY 1 FOR EVERY WRONG ANSWER
SHOW TOTAL MARKS
END

## 6. Conclusion:

A very simple and basic Quiz system is created on Notepad++ and Tasm 1.4.This is really an interesting Quiz system using assembly language functions. Anyone can judge himself within a short time by this quiz system. We also gather a huge knowledge about Assembly Language by completing this project. We also hope that in future we can make more projects in Assembly Language.