Project Report

Group Members:

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Title: Game Box

Abstract

This project is a game box with two famous games, allowing users to play anywhere at any time.
The games are Snakes & ladders, Hangman & Tic Tac Toe. Snakes and ladders is a two player board game in which each person's moves are determined by the random roll of a six faced dice. On the board, there are obstacles that can decrement your score as well as, ladders which can increment your score. The first person to score 48 points wins.
Hangman is a single person guessing game, testing the general knowledge of the player. The player is shown a hint on the screen and he must then choose a alphabet from the English lexicon that could help him guess this word. If the user enters a total of 5 incorrect alphabets which were not part of the word, the player looses the game.

Introduction:

We have made a “Game Box” which consist of three games ‘Hangman’, ‘Snakes and Ladder’ & ‘Tic Tac Toe’.

Background (Research & Project Selection):

While looking for project ideas we came through games like ‘2048’, ‘Tower of Hanoi’, etc. But since it is quite boring to play a single game all the time. Therefore, we looked for several popular games and came up with the idea of creating “Game box”, which has the best three entertaining games of all time.

Project Specification:

We have compiled three games into a single program (Game box). All three games logic is entirely implemented in x86Assembly language and covers following topics:

1) Arithmetic Instructions (Add, Sub, Mul, Div)
2) Data related operator & directives
3) JMP and LOOP
4) Stack operations and procedures
5) Boolean and Comparison instruction
6) Conditional jumps
7) Recursion
8) INVOKE, ADDR, PROC, & PROTO
9) String Primitives

Solution Design (Project Detail, Functionality and features):

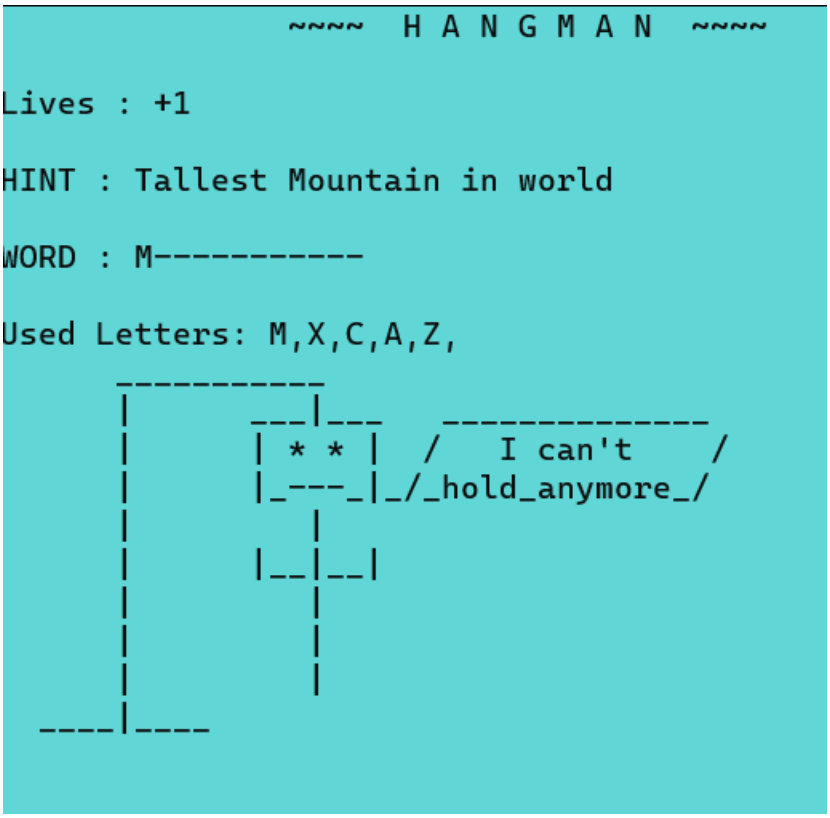
- **Snakes & Ladder:** Snake & ladder is implemented on recursive logic where the base case is a winning condition of either player. The game goes on until any player manages to score exact ‘48’ points, meanwhile, there are snakes which can significantly decrease player points but, there are ladders too, which helps gaining more points to a player.

- **Hangman:** Hangman consist of 15 different words and there hints respectively. Both words and hints are placed in such a manner that first array consist of all words and other consist of their hints. For every Game Stage Player has to guess the word within 5 lives and if he fails to guess the word in 5 lives, then the Total score of Player and that word displayed on the screen, also a dialogue box appears, which asks the player to if he want to play again or not.

OUTPUT SCREENS

Snakes & Ladders

HANGMAN


H A N G M A N ~~~~
Lives : +1
HINT : Tallest Mountain in world
WORD : M----------
Used Letters: M,X,C,A,Z,
| * * |
/ I can't /
|_---_|_/_hold_anymore_/


H A N G M A N ~~~~
Congrats You find the Correct Word, Good Job.
Points Earn In This Round : +1
Total Score : 1
~~~~ HANGMAN ~~~~
Do You Want To Play Again ?
Yes
No
~~~~

Implementation & Testing - Project Breakdown Structure (Workload distribution with timeline):

Workload was distributed among 2 group members assigning each game to each member:

1) (Bilal Hassan 21k-4669) Snakes & Ladder, Tic Tac Toe.
2) (Yaazir Mehdi 21k-3460) Hangman

Results: Game Box provide games for single & double player. A menu at start lets player play any game, anytime, anywhere.

Conclusion (Summary & Discussion): Two games are combined into a menu driven single “Game Box”, which is implemented entirely on x86assembly language.

References:

- Irvine library
- Assembly language for x68 Processors (seventh edition)