German University in Cairo
Media Engineering and Technology
DMET 502 Computer Graphics, Winter 2024

## Project proposal template

## Project Title (Game name): Maze Explorer Game

1. Game description:

The game is a 3D exploration-based puzzle adventure where the player navigates through a maze filled with obstacles, traps, and hidden collectibles. The main objective is to find the exit of each level while collecting keys and coins for additional points. The game consists of two distinct levels, each with unique challenges and environments. The player can switch between first-person and third-person camera views, adding to the immersive experience.

2. Main character model(s):

Player character (adventurer model with animations for walking, running, and jumping)

### First Environment Models (Level 1):

All models are textured.

1. Maze walls (stone texture)
2. Static obstacles (barriers, spikes)
3. Collectibles (coins, keys)
4. Exit door (opens when the player finds a key)
5. Floor tiles (textured with stone patterns)

### Second Environment Models (Level 2):

All models are textured.

1. Maze walls (brick texture)
2. Moving traps (spinning blades, falling spikes)
3. Collectibles (gems, keys <mark>with different shape than level 1 keys</mark>)
4. Hidden passages (activated by switches)
5. Exit door (requires a key)

3. **First-Person View:** The camera represents the player's eye, providing an immersive experience as the player navigates through the maze.

4. **Third-Person View:** The camera is positioned behind and slightly above the player, showing the upper part of the character and the surroundings.

5. Navigation through the game is done using the keyboard and the mouse:

   The keyboard is used for player movement:
   - **W/A/S/D** keys for moving forward, left, backward, and right.
   - **Spacebar** for jumping.
   - **Shift** key for sprinting.

   The mouse buttons are used for additional actions:
   - **Left mouse button** to interact with objects (e.g., pick up keys).
   - **Right mouse button** to toggle between first-person and third-person views.

6. The player's score is displayed on the screen, updating with each collectible item picked up (coins, keys, or gems).

7. Generation of animations with every user interaction will be implemented:

   **Doors Opening:** When the player collects a key, the corresponding door opens with a sliding animation.

   **Trap Activation:** Spikes and blades move or appear/disappear when triggered by player movement.

   **Collectible Pick-Up:** Coins and keys animate with a spin or glow effect when collected by the player.

8. There is a light source that changes its color intensity and a light source moving in the scene:

   - **Ambient Light (Level 1 & 2):** Provides general visibility throughout the maze. (It will be rotated through the game)

- **Torch Lights (Level 1):** Placed at intervals in the maze.

- **Flickering Light Source (Level 2):** Represents a broken torch or candle, adding atmosphere in darker areas.

- **Day-Night Cycle (Level 2):** The lighting changes from bright to dim, simulating a transition from day to night as the player progresses through the level.