**Islamic University of Technology**



**Department of Computer Science and Engineering**

**CSE 4203 Project**

**Subject Name:**Structured Programming II Lab

**Subject Code:**CSE-4202

**Team Name:**Team Untitled.

**Student ID of Team Members:**170041038  
170041034  
170041021

**Project:**A 2d puzzle, shooting game.

**Project Title:**   
Labyrinthine Rush.

**Language:** C++

**External Libraries:**SDL 2.0   
SDL Image 2.0  
SDL TTF 2.0  
SDL Mixer 2.0

**Description:**   
There will be multiple levels. The first level will serve as a demo, and will have instructions to teach the player how the mechanics work.

To complete a level the player has to navigate through a maze/labyrinth, face enemies, and find a key to finally navigate to a treasure chest and open it.

The player has to take portals to navigate the maze. There are two kinds of portals. One that is permanent and another one that gets destroyed few seconds after the portal is used.

The player has to shoot enemies to kill them. The enemies can also shoot. There is a special short ranged attack for both the player and enemy.

The score obtained will depend on various factors that include health remaining, time taken to complete level, enemies killed, etc.  
  
At the very core, this is a puzzle solving game. Thus the player will have to think before his actions, or else he might find himself trap in a dead-end.

More features might be added, depending on whether it fits the theme of our game.

**Background Studies:**In order to make out ideas into reality we needed a graphical library that would allow us to create windows and render textures on it. SDL allows us to do just that. Sadly SDL can only load BMP images. We use SDL Image in order to load other formats. SDL ttf is used in order to create text surfaces, and SDL mixer is used for loading audio.

We learned functions that allow us create window; load textures from images; render texture on the surface of the window at specific coordinates; clear previously rendered textures to draw the next frame; load sound and play them at specific points of our program; delete loaded textures, audio, surfaces, etc to free up memory; handle various events (eg. What happens when the cross button is pressed); detect mouse and keyboard inputs; and detect mouse curser position.

In order to learn SDL and all other SDL related libraries we studied tutorials from the website [http://lazyfoo.net/tutorials/SDL/](http://lazyfoo.net/tutorials/SDL/%20)

**Example:**

