**PROPOSAL**

**FOR**

**DEVELOPMENT OF THE TANK GAME**



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**TABLE OF CONTENTS:**

ABSTRACT………………………………………………………………………………………………………..…3

1. INTRODUCTION………………………………………………………………………………………….…4
   1. Purpose………………………………………………………………………………………..….…4
   2. About the game………………………………………………………………………………….4
   3. Concept of the game……………………………………………………………………..….. 4
2. DISCUSSION……………………………………………………….…………………………………….…..5
   1. Game analysis and design…………………………………………………………..…..….5
   2. Graphics and sound programming……………………………………………………...6
   3. File handling…………………………………………………………………………..…………..….…6
   4. Event handling and player control………………………………………………….…..7
   5. Team work……………………………………………………………………………………..….7
   6. Project Timeline and work division……………………………………………….…...7
3. CONCLUSION…………………………………..…………………………………………………….…...9
4. GLOSSARY………………………………………………………………………………………………….10

**LIST OF ILLUSTRATION**

1. Teamwork Division…………………………………………………………………………….…..7
2. Grant chart……………………………………………………………………………………..………8

**ABSTRACT**

This proposal has been drafted in order to meet the requirements of the course ENGG102 offered by Department of Computer Science and Engineering, Kathmandu University.

The project work is intended to provide students with a real hand experience in designing, developing, programming, presenting and maintaining software. We expect to get the same from this project work.

With the consent of all the project members and guidance of the supervisor we have decided to develop a simple “TANK” game as ENGG 102 project. The game is based on the “Battle City” developed by Nintendo.

We strongly believe that by working on this project we will be able to gain all the necessary experience that will help us to work on other projects for other semesters. It will also help us in understanding the software development cycle and developing necessary programming skills.

1. **INTRODUCTION**
   1. **PURPOSE:**

This proposal is prepared in order to meet the requirement of the course ENGG 102 offered by Department of Computer Science and Engineering of School of Engineering, Kathmandu University.

**1.2 ABOUT THE PROJECT**

The objective of the course is to provide student with a real hand experience with the process involved in a software development cycle. As ENGG 102 project work we have decided to develop a “TANK” game. This game development will provide us with knowledge of the software development cycle.

**1.3 CONCEPT OF TANK GAME**

Computer is multi-purpose machine. Among many of its uses a major use is for Entertainment. Computer entertainment industry is expanding rapidly.

Out of all entertainment option available with computer, a major one is the Computer Game. Computer game has been fascinating everyone ever since the introduction of the first computer game to today’s very high end PC games.

In order to gain knowledge of this very popular field, we believe our simple Tank game will be very helpful. Our tank game is largely based on the game “BATTLE CITY” developed by Nintendo in 1980 as a console game. The game was an instant hit and is still very popular now. So we decided to implement the same game with few major and some minor modification to it so as to make it more interactive and exciting.

1. **DISCUSSION**

The whole process of developing the game has been divided in four aspects.

* Game Design and Analysis
* Graphics and sound programming
* File handling and Score management
* Event handling and player control

**2.1 Game Analysis and Design**

Tank game is mostly based on the “BATTLE CITY” and most of the concept of the game is derived from it. However some new concepts have been implemented in our game to make it more interesting and exciting.

Our game consists of four players in a single computer. Two players form a team. Each team has the objective to protect its seal from the enemy seal and to destroy the enemy seal with the missile.

The dimension of the screen is 1100 x 700 ( 32 bit ). The game screen consists of game play area and the score board.

The major components of the game are :

* Walls
* Bricks
* Players
* Seals
* Computer controlled enemy
* Points
* Bullets
* Missiles
* Bushes

Game consists of different levels each different from another adding fun to it.

**2.2 Graphics and Sound Programming**

Graphics provides better look and touch to the game. Graphics has been implemented by using a third party package “SDL Library”. SDL library includes a set of functionalities for adding graphics, sounds, fonts, video and effect to the game.

SDL package is totally written in C and can be downloaded for free from [www.devpaks.org](http://www.devpaks.org) for Dev Cpp. SDL package consists of structures, function and constants. Graphics and sound programming is carried out by manipulating these elements.

Graphics used by the game has been designed in MS Paint and sound required for the game has been downloaded from multiple sources from the web.

**2.3 File handling**

Our game requires file handling for two major purposes

* Level Initialization
* Score management
* Level Initialization

The various level provided by the game has been stored in level information file. Thus we make use of file handling to read these level information file to get the information about a particular level.

* Score management

Score management has been achieved by using simple file handling.

The score are stored in two ways

* Score to the team
* Score of the individual player

This has enabled us to provide a simple Hall of Fame for our players.

**2.4 Event handling and player control**

* Event handling

Event handling in the game is done using the SDL package event structure. This feature provide us with enough utilities to handle user events.

Events include:

Player movements

Game play control

* Player control

We have assigned specific keys to handle a particular player. Two players are assigned keys on the keyboard. Rest of them on joysticks.

**2.5 Teamwork**

**The** four aspect of our game development is been divided accordingly

|  |  |  |
| --- | --- | --- |
| **Game aspect** | **Name** | **Remarks** |
| Game analysis and design | Iksha Gurung |  |
| Graphics and sound programming | Sandip Sahani, Pranay Pradhanga, Iksha Gurung |  |
| File handling | Pranay Pradhanga, Brisuti Siku |  |
| Event handling and player control | Sandip Sahani, Nitish Dhaubadel |  |

Table. *Work division*

**2.5 Project Timeline and work division**

The whole game development process is divided into small tasks to be completed each week. Each aspect of the game development will be handled in the week specified.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Work** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** |
| Game Analysis and Design |  |  |  |  |  |  |  |  |  |  |
| Graphics and sound programming |  |  |  |  |  |  |  |  |  |  |
| File handling |  |  |  |  |  |  |  |  |  |  |
| Event handling and player control |  |  |  |  |  |  |  |  |  |  |
| Packaging and testing |  |  |  |  |  |  |  |  |  |  |

Fig. Grant chart

Week 1 starts from – March 14, 2010

Project deadline : June 14, 2010

1. **CONCLUSION**

Computer is the field of rapidly changing technology. Everyday with the introduction of new technologies life get more simplified. In this small but exciting cycle of game development we hope to collect all the important knowledge and useful skill in software development process of this industry. By a helpful guidance of the supervision and with the teamwork we are determined to make this project a success.

**GLOSSARY**

**Console game:** Game that is specifically designed to play on a console.

**Dev Cpp:** Free C and C++ compiler with User interface for windows.

**ENGG102:**  Engineering project ( 1st Year 2nd Semester) [ 2 credits ]

**MS Paint:** Microsoft paint.

**Nintendo:** One of the leading Japanese firm in the field of gaming and consoles.

**SDL:** Simple Direct Media Layer.

**Software Development Cycle:** It is the complete process involving clients and developers for the development of an application demanded by the clients.

**WORKS CITIED**

1. **Techinical writing – Gerson and Gerson. Peatson education**
2. **Principles of computer graphics – Shalini**
3. **Programming in ansi C – E Balaguruswami. Tata MG Hill**
4. **Mastering C – Venugopal. Tata MG Hill**
5. **Practical C programming – O’relli**
6. [**www.devpaks.org**](http://www.devpaks.org)
7. [**www.sdltutorials.com**](http://www.sdltutorials.com)
8. [**www.lazyfoo.com**](http://www.lazyfoo.com)