



PCM with RUN (Game Design Document)

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PCM with DRIVE	Version v1.1	14/02/2016	<ul style="list-style-type: none">- Story Line Added- Game Mechanics added
PCM with RUN	Version V1.2	18/02/2016	<ul style="list-style-type: none">- Game Name Changed- Story Line Changed- Game Character Changed- Game Mechanics Changed

Youtube Video URL : <https://youtu.be/xfUqfKKPRbQ>

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1. Game Overview

This game will help the students of intermediate in their board exams and competitive exams like JEE Main, JEE Advance and in different state engineering entrance exams.

Also this game will be helpful for those students who are preparing for medical entrance exams.

Our main moto is “**Playing with Learning**”. The game is easy and interesting. In present scenario there is a race for grabbing a good and healthy knowledge. And we have tried to make a new way of learning, remembering and checking their correctness within certain time limits. This game will help in remembering the different formulas, constants and their values of :-

Physics

Chemistry

Mathematics

1.1. Game Name : PCM with RUN

This game enhances the student’s knowledge and sharpens their mind. It will also help in remembering and recalling important formulas and concepts of intermediate students by playing the game.

The genre of the game is Educational Games.

As the name implies, and attempt to teach the user using the game as a vehicle. Most of these types of games target specific age group. Our game targets on 15 to 21 age group student.

1.2.Business Field & Target Audience

The main business area of this game is intermediate students. This game will be helpful for their board exam as well as competitive exams. The students of intermediate and competitive exams always face a problem like remembering different formulas, unit conversion, constants and their values. They face problems during their exams and many times they make blunder mistakes of putting wrong values for constants and conversions.

This game has a large business area. Every year crores of students appear in different board exams and competitive exams. Students face a huge pressure in their exams. So there is always a need of learning with understanding by a ease way. So we have tried to provide a game in which not only we play and enjoy but also will learn our important subjects i.e. physics, chemistry and

mathematics.

Example: Someone ask that what is value **one mole** and value of **Planck's constant h**. It is always tough for students to remember such values and differentiate among the some similar constant values.

$$\begin{aligned}\text{One mole} &= 6.022 \times 10^{23} \text{ particles} \\ h &= 6.626 \times 10^{-34} \text{ Js}\end{aligned}$$

And now a-days trend online exam is increasing day by day. So this game will make the students, used too of technology. They will feel comfort in their different online entrance exams after playing this game.

1.3. Expected Game Impact

Beside all existing games based on education genre our game concept is totally unique, very fruitful. Our game cover a very large audience and it has ability to engage student till they pass all the levels of game. Our audience which is almost familiar of technical device and their usage. They use their phones, tablets and pc's in their day to day life and try to enhance their knowledge by using more technology. They are trying to find out a new and easiest way of learning their subjects. And we understand their problems so, we have tried to provide an easiest way of learning while playing.

The impact of game on audience will be healthy. This game will increase their knowledge as well as sharpen their mind. After playing this this game no doubt they will got more marks in their exams. Because the set of questions that are provided in the game are too much important for board exams as well as for competitive exams also.

2. Game Concept

The main concept of the game is “learning with playing”.

In the game Deepak is fond of learning PCM (physics, chemistry, mathematics). And he wants to check his knowledge before his exams. Deepak (Character of this game) is jogging on road. There is a 3D street where he can revise and memorise his knowledge. Where he can maintain his knowledge as well as his fitness too by jogging. There are two tracks on the road. Our character starts his journey from left track. The problems will be displayed on the street as a digital banner. The problems are one liner and short. He will have to solve these problems within time. The problem will be display on the screen and he have to read the problem and understand. After some time multiple answer will be displayed on the digital banner screen out of which only one answer is

correct. If he solve the problem and found correct answer he will get points, as well as his speed will increase and next time he will get more points and if he not able to solve he can skip at most 2 (two) problems and if he select incorrect answer his fitness will be reduced every time by 1 and maximum 3 (three) wrong answer are allowed after that game over.

2.1. Game Play & Game Mechanics

STORY LINE :

Deepak is an intermediate student and he has to appear in board exam as well as several competitive exams. He also cares a lot for his physical fitness so every morning he go out for jogging. But as his examination are approaching, so every single minute is very very important to him but he can't compromise with his fitness. So finally he came up with a solution that is, he will go for jogging but while jogging he will be revising small small things. Like values of plank's constant, charge on one electron, value of one mole, unit conversions and tricky formulas, etc.

GAMEPLAY :

In this game Deepak is a third person running character will be able to change his lanes on road to get correct answer or bonuses during game play.

BONUSES IN GAME :

Player will need to collect these bonuses during play if he wants to survive in this game. Each type of bonus have special characteristics. And some have negative characteristics also.

The Jump Bonus



The Negative Jump Bonus



The Fitness Bonus



MECHANICS :

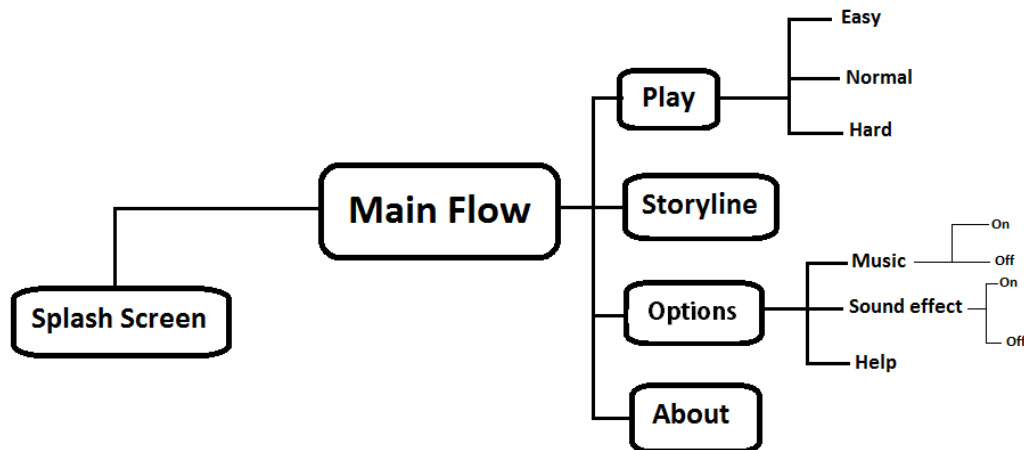
In PCM with RUN the camera is placed in such a way that we can see our character running and on window devices we will be able to control the character by left, right arrow key for changing tracks and up arrow key to jump.

These bonuses will not be visible in starting , they will be activated only when player is within 5 meter range. So this will make game more difficult and interesting.

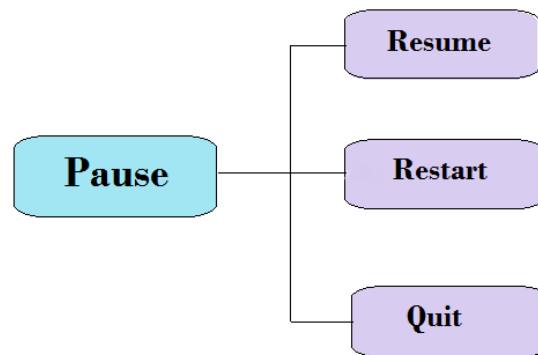
The main concern of running on track is to create more interaction between game and player. The movement of the player on track makes realistic and alive. The running on street shows that that there is a race of learning and Deepak (Player) have to learn and think and have to choose a correct answer within time.

In the next level questions will be more tricky and hard. There will be three level in first version of game .In the next version the number of questions as well as their hardness will be more. And few new level also will be entertained.

2.2 Screen Flow



Screen Flow Diagram of Game



User Control Flow Diagram

2.3 Game Art

Our Character : Our character name is Deepak and he will be going to appear in his board exam and other competitive exams.



Our Character (Made in MakeHuman Software)

Main Menu : This will be our first screen (ROOT Screen) and from this menu, player will be selecting various screen whatever he like.



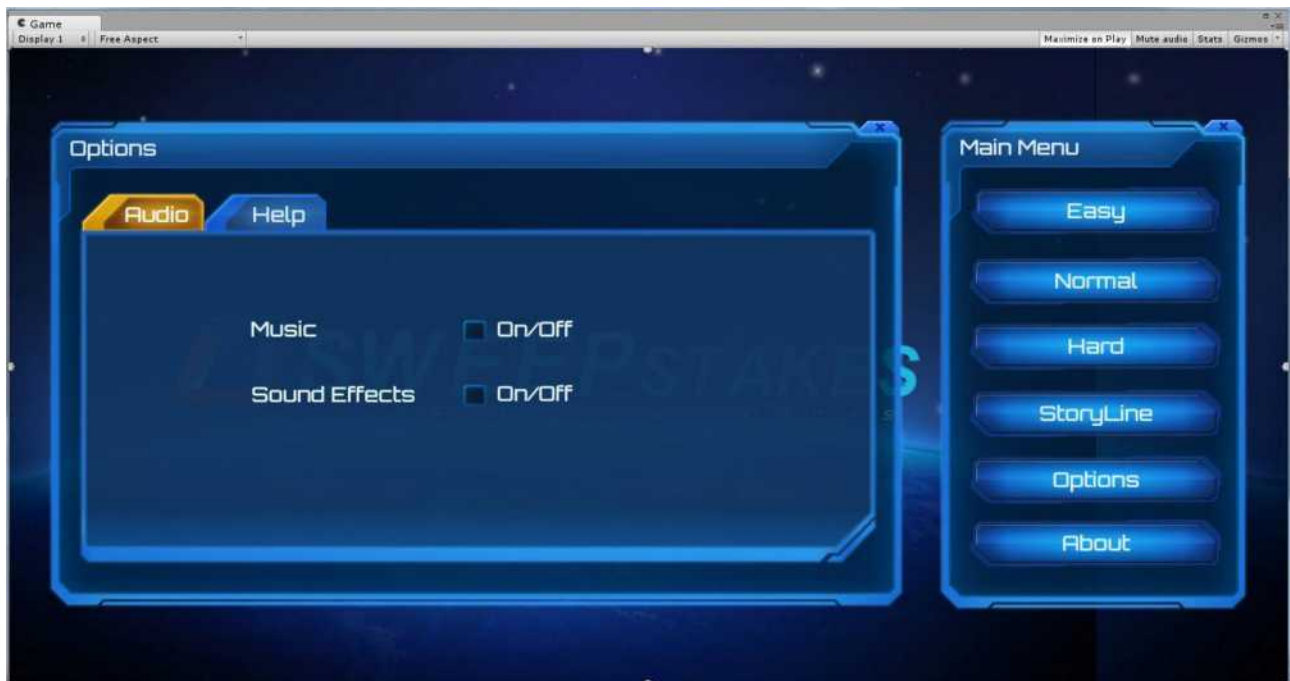
Main Menu Screen

Easy , Normal , Hard Levels : This screen will lead the players to respective levels. All levels have same game environment but difficulty level of questions vary in each level.



Our game environment

Options : Here are some usefull option for player i.e. turning off sound effect .Help can also be founded under option where any new player will get information about game play and its elements.

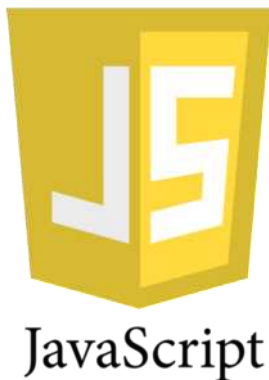


Screen when Options button is pressed in Main Menu

3. Technology Involved

Following software and technology are involved in designing and developing the game.





Appendix – A

Background Music : We're the Resistors (Part of this song will be used in our game)

It has open source licence (creative common licence)

<https://soundcloud.com/eric-skiff/were-the-resistors>

InstantGui Asset : Free asset

<https://www.assetstore.unity3d.com/en/#!/content/13645>