GAME DEVELOPMENT OF TIME MANAGEMENT SIMULATION FOR STUDENT COUNCIL HIGH SCHOOL DESKTOP-BASED (CASE STUDY SMAN 1 BANDUNG)

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ABSTRACT

Time management is a planning process in exerts supervision over the amount of time spent on a specific activity. High school students are ideally able to manage their time well, when they diligently follow the academic activities and tasks assigned by their teachers. However members of the student council at SMAN 1 BANGUNG routinely have problems with their time management. This is mostly due to the lack of training for time management outside of the school. The purpose of this research is to help students understand the concept of time management, to assist them in setting priorities in a fun and engaging way, which will follow them in every aspect of their lives helping them to become masters of time management

. Game development goes through several stages in accordance with the chosen development method. Time management is a huge asset, and often times a requirement to complete a game within a deadline. The method that will be used for this research is known as the waterfall system and getting things done for time management. David is the main character of this game, players are required to recruit at least 3 people to school David can pass the competition .Game testing is done using black boxes, questionnaires, and interviews.

Based on the results obtained from the research, it can be concluded that this game can help students practice the concept of time management in an interactive way. This game can facilitate learning time management and help students prioritize activities. So that in turn the student council member will be able to balance their council and academic duties. It will serve to go above and beyond the time management they would have already been taught at the school.

1. INTRODUCTION

1.1 BACKGROUND

Time management is an act or process of planning to conduct supervision over the amount of time spent on specific activities, particularly to improve the effectiveness, efficiency or productivity. Management where time itself includes planning, allocating, setting goals, analysis of time spent, monitoring, organizing, scheduling, and priority [1]. Based on interviews with Mr Wida, as chairman of the student at SMA Negeri 1 Bandung. It is known, that every student can participate in more than one extracurricular and every 3 months for time management training. Students who are active in the Student Organization (OSIS) often find it difficult to split his time either for student council activities and learning activities in schools. Based on the results of a survey conducted to students who follow OSIS, 13 of 35 respondents to make a list of good planning it through a notebook or mobile phone, and 22 respondents did not make a list of planning to manage its activities. In addition, the majority of council members have difficulty in determining the order of priority activities and concepts in conducting learning activities. Based on the survey conducted, 20 of 35 respondents had difficulties in setting priorities and activities in implementing the concept of sequence learning activities, student council and their daily activities. This may affect the final value can be students, high school students should ideally able to play an active and diligent in following the academic activities to accomplish the tasks assigned by the teacher with a good [3].

Based on interviews and questionnaires there are some other statements, that students have difficulty in dividing watu in learning activities and the activities of the council. Therefore, students need to learn about time management outside the training provided by the school, but if there is no guidance from a coach or help from the media, students will have difficulty understanding the concept of prioritization and time management and will quickly saturated.

In conducting the study time management takes considerable practice time, while at school only training once every 3 months, thus requiring additional time. In addition, students will feel bored when used training using learning concepts such as school activities. The learning method can be used in several forms, one of which is a simulation game that can make learning more interesting. This may make it easier for students to understand time management. Based on pemasalahan has been described, the

materials on concepts that are abstract, in particular the concept of time management and priorities in decision making, requires a media interactive and fun, because students still have difficulty in understanding the concept of time management, how to determine a priority activities and draft order. Thus the researcher intends utilizing technology to build, entitled "Game Development of Time Management Simulation For Student Council High School Dekstop-Based" which is where the game is expected to help students manage his time well is certainly capable of determining the priority activities well.

1.2 Purpose and Objectives

Based on the existing problems, the purpose of this research is to develop a management simulation game development time for high school students in the Students' Union-based desktop. While objectives to be achieved in this study are:

1. Train students in managing his time between school learning activities with the activities of the council with a more interactive way.
2. Train students in determining the order of priority activities and concepts, both learning activities, student council activities and daily activities in a way that is more enjoyable.
3. Let students learn time management out training at the school.

1.3 Scope of Problem

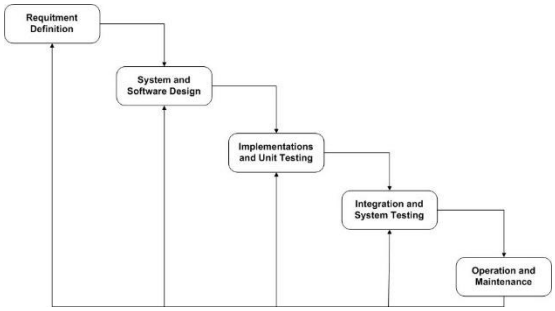
In this study, several limitations problems that discussion is not too extensive and more focused in accordance with the objectives to be achieved. The limit existing problems are as follows:

1. The main target in a simulated game of this organization is SMA Negeri 1 Bandung who participated in the student council.
2. Model simulation game supplied take the viewpoint character to three.
3. Time management contained in this game is more focused to prioritize the implementation of activities with each other.
4. This simulation game requires to resolve the issue within 30 days (the time in the game).
5. This simulation game using 2D animation.
6. The simulation game is only available for the Windows operating system.
7. This simulation game created using Rpg Maker VX Ace with the programming language Ruby Scripts Gaming Systems 3 (RGSS3).
8. The storage medium in the form RPGVXAce saved game data.
9. The method of management in this simulation method Getting Things Done (GTD).

2. RESEARCH CONTENT

2.1 Software Development Methods

Stages of development of system analysis application program used is a modified waterfall. On the development of a software with the Waterfall method, the stages of development being done is a systems engineering, analysis, design, implementation, testing, and maintenance [2]. The stages are contained in the waterfall method can be seen in Figure 1 as follows:



Gambar 1.1 Waterfall Model[2]

2.1 Game Theory

Definition gaming is an activity that is done for fun or fun that has rules so that there are no winners and losers [3]. Additionally, the game brings the sense of a contest, physically or mentally, according to certain rules, for entertainment, recreation, or to win a bet.

2.1.1 Definition Game Engine

The game engine is the core software component of a video game game.nEngine typically handles graphics rendering and other important technology, but also enables to handle additional functions such as artificial intelligence, collision between game objects with other objects [3]. Based on the Purpose of use, the classification of the game is divided into three parts, namely:

1. Game as Game
   Game in question is a game for pleasure or fun.
2. Game as Media
   The main goal of the game as the media is to convey a specific message, a message from the maker of the game. Common examples of games as media is a game that is included in the serious games, like advergame, edutainment or edugame, exergame, simulation, and more.
3. Game Beyond the Game
   Could also called gamification. Gamification is the application of a concept or way of thinking game design into the realm of non-game. Forms of gamification itself was usually not in the form of games, such as the reward system of points accumulated by shopping, or other.

2.1.2 The Types of Games

Based on the type, the game consists of several categories [3], namely:

a. Side Scrolling
   Games of this type can be said to be the types of classic games, games that only have a two-way movement between right and left.
b. Racing
   Games with the type of race simulation in the form of either a motor vehicle or a vehicle in a fantasy world.
c. Fighting
   This type of fighting game is one type of game that is loved among adolescents, in this game the player will play one or more characters that then these characters have to fight with the characters.
d. shooting
   Game shooting is the type of game that is actually quite simple, because the players just simply shoot the enemies that block during the player progresses.
e. RTS (Real Time Strategy)
   In this RTS type game, as players take control of one or more characters to perform certain actions in order to resolve the problem (mission) in the game, most of the RTS game is a war strategy game.
f. RPG (Role Playing Game)
   This is one type of game created with intricate storyline is so thick, the character development of the characters in depth.
g. Simulation
   Just as significant means of simulation, in this game given the depiction of the concept of a game with all the things in real life.
h. Puzzles
   Games of this type are usually about solving a puzzle, like a puzzle, construct words, to create colors, through a maze, solving mathematical calculations and more. Examples of this type of game is Tetris, Minesweeper, Memory, and so on.
i. Education – Edugames
   Video Games of this type are made with a specific purpose as an educational tool, either for the study is to recognize colors for toddlers, recognize letters and numbers, math, to learn a foreign language. Developers who make it, must take into account various things that this game can really educate, increase knowledge and improve the skills of the play. Target segmentation players must also be adjusted to the level of difficulty and visual design or animation. Edugames Example: Bob Ball, Dora the explorer, Adventures of Billy and Tracy.

2.3 Methods Getting Things Done (GTD)

Methods *Getting Things Done* (GTD) is a method which is designed with emphasis on aspects of working effectively and efficiently work, evidenced by the implementation of the work and determination of the groupings list that task execution is handed back to the people where full control is on the individual. In the end, individuals who apply GTD methodology will find himself able to complete a lot of work and be more productive with superior stress and pressure of his own work is much less [4]. GTD methodology confirms routines one can do in one time, and create adequate working conditions for the culprit. [4] The essence of this methodology are:

a. Collection: Collecting all data, employment records, and a list of jobs that exist in a single container and unsorted.
b. Process: Sorting data that has been collected, and determine the next action against any data sorted.If these data require further action, the perpetrators may:
   1. Directly to do it right then and there if it can be done in two minutes;
   2. Logged in Monitor List or record the work to be done; or
   3. Postpone the job with a record in the Action List or a list of jobs that could be done later.
      If the data does not require any further action, the offender shall determine what these data have value later. If such data have to go through further thought, then enter into Incubate List and noted Sometime / Maybe List, and if the data has a value of archives, archive in the Archive List
c. If the data does not require further action, does not need further thought and did not have the reference value, then enter the data to Junk List.
d. Organize: Taking the data that has been sorted out and put it into a form for allocating daily working time of each data.
e. Review: Conduct regular reviews to ensure that the system used to be believed, by examining the process Collect and Process if there are any missing assess the project does have the further action that may be acceptable, trim the list of actions that are not needed, and looking back Sometime / maybe List for the data to be executed next.
f. Do: Make employment already sorted on the form that has been made.
   This process depends on and motivated by other related concepts, also depending on the circumstances that are happening.

2.4 Analyst Game Development

In the construction of OSIS time management game requires some components of either the form of stories (storyline), graphics and gameplay rules.

2.4.1 Storyline

OSIS is a time management simulation game that focuses on the student council in high school activities. The story in this game focus on youth named David, a member of the student council in high school, one day at school received a letter of invitation to participate in the race of making games, but at that time the school David difficult to find people who will be included into the contest. David as a member of the student council at the school was given by the chairman of the council to look for at least three students within 30 days (the time in the game) so that schools can follow the race David. In addition, David also led to set the time, so that the activities and student council activities are not mutually overlapping.

2.4.2 Rules Gameplay

At game time management simulation on the council, there are some rules of the game are applied, in order permaian can run well. Some of these rules, including:

a. Rules Control Gameplay

This game has some buttons that are used to control the character and function of the game. Controls that can be used can be seen in Table 1.

Table 1 Rules Control Gameplay

No	Tombol *Keyboard*	Fungsi
1		The keys are used to move the character and pointer.
2		The keys are used to confirm the choice.
3		The keys are used to deselect or open the main menu.
4		The keys are used to open the catatan.
5		The keys are used to run.

b. Rules Basic

This game has several parameters that can affect the main characters. These parameters can be seen in the table Parameter Character.

Table 2 Characters Parameter

	Fungsi
Pengetahuan	Useful to answer the questions at random, during school hours. Useful as a condition to speak to some ka-character of matter.
Karisma	Useful for improving relations more quickly to important characters. Useful as a condition for the air-talk with some important characters.
Ketang-kasan	Useful for increased agility at the time of taking the job. Useful as a condition for talks with an important characters.

c. Aturan Sistem Pergantian Hari

In this game has three phases to each turn of the day, the phase will change if a player has been carrying out an activity. Several phases can be found in this game, including:

1. **Morning**: Players will be automatically placed in the current school early phase, except school vacations. Such as Saturday and Sunday.
2. **Day**: Players will be automatically placed in front of the house of David during the current phase.
3. **Night**: The player will automatically be placed in the home of David when the phase of the night. David was not able to leave the house at night, unless there is an event based on the scenario.

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d. Aturan Sistem Energi

This game the player must also consider the Energy David, because every activity that will run will require energy. David has 5 points Energy in prime condition and when the energy reaches 0 points, the player can not perform any activity except rest. Mapping of Energy system can be seen in Table 3 Energy Character.

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Table 3 Characters Energy

Activity	Energy Cost	Efect	Time
Study	1 Poin	Energi -1 Poin, Pengetahuan +1 Poin	1 Fase
Study then sleep	1 Poin	Pengetahuan + 1 Poin, Energi +1 Poin.	1 Fase
Do homework	1 Poin	Energi -1 Poin Tugas -1 Poin	1 Fase
Do homework then sleep	1 Poin	Tugas -1 Poin, Energi +1 Poin.	1 Fase
Work	1 Poin	Energi -1 Poin,	1 Fase

		Uang bertambah	
Work then sleep	1 Poin	Energi +1 Poin, Uang bertambah	1 Fase
Help people	1 Poin	Energi -1 Poin, Karisma +1 Poin	1 Fase
Watching TV	1 Poin	Energi -1 Poin, Karisma +1 Poin	1 Fase
Hang out with friends	1 Poin	Energi -1 Poin, Relasi akan semakin bertambah	1 Fase
Chating then sleep	1 Poin	Energi +1 Poin, Relasi akan semakin bertambah	1 Fase
Sleep	-	Energi +3 Poin	1 Fase
Drink	-	Energi +1 Poin	-
Eat	-	Energi +1 Poin	-

e. Rules Item

There are several kinds of goods that can be found in this game, the goods have some good functions used for yourself or give to others. In addition, there are two kinds of stuff in this game, including:

1. Consumable : Items that can be used by David.
2. Key Items: Items that can not be used, but can be used as a gift to some of the characters or diguanak as a condition for an activity.

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f. Stage Design

At a time management simulation game on OSIS, there are 7 steps that need to be achieved within 30 days. Here is a detailed description of each stage, in table 4 table design stage.

Table 4 *Stage Design*

Stages	Activity	*Deadline*	Feedback
1	Do homework weekly	8, 17, 25	1. If successful, the entire parameter of players is growing +2 points and will be a great value. 2. If it fails, the value of David will be ugly, and will perform remedial takes 2-3 days.
2	Karisma Level up to 10	6	1. If Successful, could control the council meeting. 2. If Fail, is difficult to control the council meeting.
3	Pengetahuan Level up to 7	13	1. If successful, David can complete the quiz. 2. If it fails, it is not able to finish bears a quiz, then David no interest in doing any kegi-atan, takes 2 phases.
4	Have money up to 10.000	17	1. If successful, David can buy discounted goods for the purposes of the competition. +20 agility 2. If it fails, can not afford to buy discounted goods for the purposes of the competition.
5	Karisma Level up to 30	20	1. If successful, David can go together with the Vitara. 2. If it fails, David could not go along

			with the Vitara.
6	Pengetahuan Level up to 25	24	1. If successful, the entire parameter of players is growing +2 points and will be a great value. 2. If it fails, the value of David will be ugly, and will perform remedial takes 2-3 days.
7	Recruiting candidates competition three or more.	30	1. If successful, the school can follow the race David made a game and finished with happiness. 2. If it fails, the school is not able to follow the race David made a game and game over.

g. Rules GTD

GTD methodology stated activities one can do in one time, and create adequate working conditions for the culprit. In this game there are three features to implement GTD methods, including:

1. **Diary:** Record the main activities of David.
2. **Task:** Used to sort the types of activities that will resolved, otherwise it as a reminder.
3. **Archive**: Saving the activity that has passed both the activities of both successful and failed, so it can be used as reference material for evaluation.

3. PENGUJIAN DAN HASIL PENELITIAN

3.1 Observation Against Students SMAN 1 Bandung

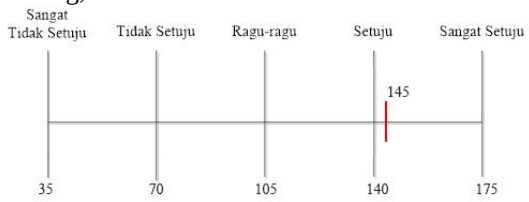
Observation of these observations consists of several aspects of observation. Here are the results of calculations each observation results of observations of 35 students of class Students Council SMAN 1 Bandung, with indicated for assessment of observational aspects can be seen in Table 1. Comments and observations on user ratings to determine the outcome of this study, has been disseminated observation format the respondent based on the target user and then do the calculations, and the latter sought the percentage of each answer by using Likert scale.

Tabel 5 Value

Answer	Value
Sangat Setuju	5
Setuju	4
Ragu-ragu	3
Tidak Setuju	2
Sangat Tidak Setuju	1

3.1.1 Aspect Observation No 1

In the first aspect of this observation, researchers gave an illustration of questions about the game that is built through a questionnaire to students of SMA Negeri 1 Bandung, and the results can be seen in Pictures 2

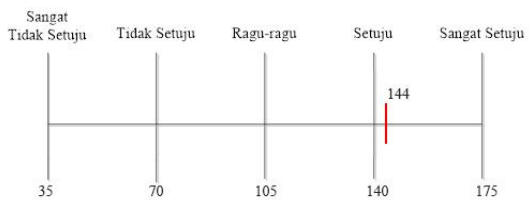


Picture 2

The results of the questionnaire given to the students of SMA Negeri 1 Bandung, on average answered agree that the game is presented in interactive.

3.1.2 Aspect Observation No 2

In a second aspect of this observation, the researchers gave the question of whether the application of chemistry learning helps students to learn outside of school jampelatihan. The results of the observations can be seen in picture 3.



Picture 3

Grafik yang ditampilkan pada gambar 3, menunjukan bahwa *game* simulasi manajemen waktu ini cukup membantu siswa belajar diluar pelatihan di sekolah.

3.2 Interview with Teacher

Interviews were conducted on time management simulation game on the student council, which is the teacher who takes care of the student as well as a builder OSIS SMA Negeri 1 Bandung father Widayana, S.Pd .. Here is the interview:

1. Is this time-management simulation game has been able to describe about time management?
   Answer: According to the father Widayana, S.Pd., indirectly game can describe about how to manage your time or activity, it looks like the students who play this game can be entertained while learning.
2. Is the material presented in accordance with what is taught in school?
   Answer: According to the father Widayana, S.Pd., in general the material is appropriate, especially on the concept of determining the priority kegiatnnya, this will help students to make a decision.
3. Is this game can help the school as a reference for time management training?
   Answer: According to the father Widayana, S.Pd., if as a reference I think you can not, because students need direct practice to do so. Therefore from the school authorities always training annually. But if it is used to describe the training and time management, students can use this game outside of the training provided by the school.
4. Do you have any suggestions if the game is developed further?
   Answer: According to the father Widayana, S.Pd., if it can be added the educational content of some of the material in schools or emphasized on the material importance of ethics and morality.

4. Conclusion

The results obtained from studies conducted in the preparation of this paper as well as referring to the purpose of research, it can be concluded.

1. The time management simulation game based on the student council this desktop can facilitate students in the training set the timing with a more interactive way.
2. The time-management simulation game based on the student council this desktop can facilitate students understand the priorities and activities of the council in order to implement the concept of learning activities.
3. Game time management simulation on a desktop-based council can facilitate students in learning time management training beyond that provided by the school.

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