

- ❖ **Introduction :** In the fast growing field of software engineering and development and even more rapidly growing sector of game development the future is hard to predict. We are working with this game as our software project lab-II.SPL-II is a 3 credit course and as part of our degree we choose this type of work for doing better with development cycle, development period, graphics, scripting, adopting new technology, animation. In general software project is a project focusing on the creation of software. Consequently, Success can be measured by taking a look at the resulting software. In a game project, the product is a game. But and here comes the point: A game is much more than just its software. It has to provide content to become enjoyable. Just like a web server: without content the server is useless, and the quality cannot be measured. This has an important effect on the game project as a whole. The software part of the project is not the only one, and it must be considered in connection to all other parts: The environment of the game, the story, characters, game plays, the artwork, and so on.

❖ **Software Project Description :**

- **Story :** It is very interesting to play our own developed game . Beside these It is more interesting to watch anyone else playing our own developed game . with these inspiration we are starting our project Airplane sky-force game . This project was developed during the 3rd semester of BSSE 1st Batch, IIT,NSTU, from January 2019 to end of the semester . Playing games on PC or Desktop is a very excellent way of passing leisure. Various games are available today . airplane sky-force is a popular game in Bangladesh . Nokia 1210 model mobile gives scope to play this game which was not available at any other mobile phone.as new new android mobile came in our market ,the previous version of Nokia will be vanished . we think that People will get themselves entertained playing this game with in pc or desktop version.

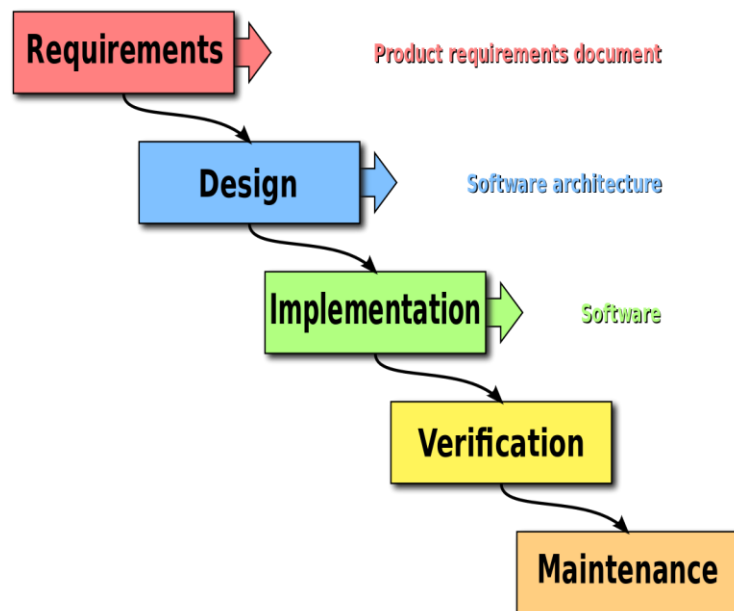
- **Requirements:**

1. There will be a air fighter who continuously throw bullet and destroy enemy who are coming from opposite direction.
2. Opposite direction enemy will be 4 or 5 type different colour airplane.
3. Air fighter must have a life strength.
4. There must be some level.
5. Fighter Airplane can through 2 or 3 times its special bullet package.
6. Background scenery will change dynamically.
7. Game will continue a time period which user define type.
8. There will also some air fighter model.one can buy these model with his or her obtain coin..

- **Proposed Process Model :** In our project AirPlane Sky-force we maintain waterfall model . As we know that It is very simple to understand and use. In a *Waterfall* model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. *Waterfall* model is the earliest *SDLC* approach that was used for software development.

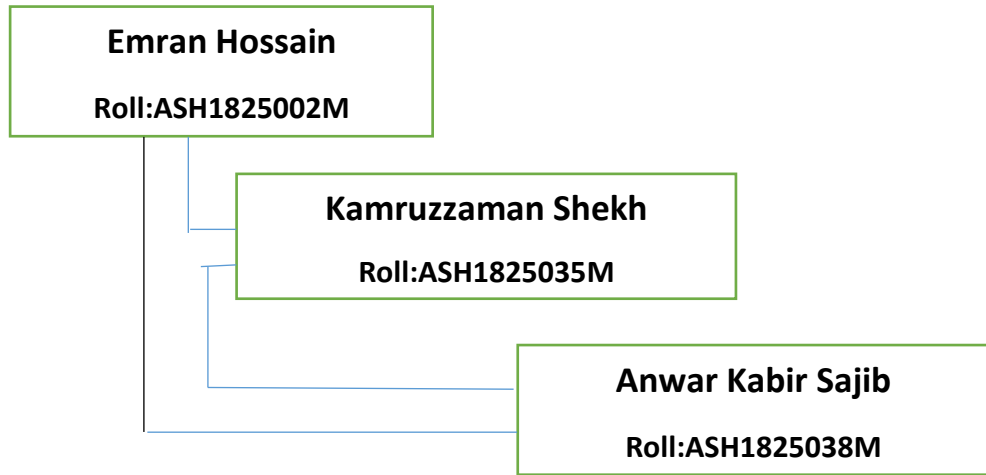
In “*The Waterfall*” approach, the whole process of *software development* is divided into separate phases. The outcome of one phase acts as the input for the next phase sequentially. This means that any phase in the development process begins only if the previous phase is complete. The waterfall model is a sequential design process in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of **Conception, Initiation, Analysis, Design, Construction, Testing, Production/Implementation and Maintenance.**

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- **Project Team (Including Team Hierarchy) :**

Team Name : The Still Variable



- **Proposed Timeline and Actual Timeline:**

<i>Task</i>	<i>Deadline</i>
Project Proposal	Within first week of February
Requirement Analysis, Specification	Within third week of February
Designing, Study	From 2nd week of February to 3rd week of March
Coding	From 1st week of March to third week of March
Testing	From third week of March to 2nd week of April

<i>Task</i>	<i>Deadline</i>
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Coding	From 1st week of March to third week of April
Testing	From third week of April to 1st week of May

Table for Actual Timeline

○ **Requirements Traceability Matrix:**

- **Final_Project_SkyForce/src/SkyForce_MainFrame/Bullet.java** :It's used to maintain bullet throw duration,number of bullet.
- **Final_Project_SkyForce/src/SkyForce_MainFrame/Enemy.java** :its maintain the enemy who are coming from the opposite direction
- **Final_Project_SkyForce/src/SkyForce_MainFrame/Game_Maintaining.java** :It's the main class who maintaining the all class
- **Final_Project_SkyForce/src/SkyForce_MainFrame/GameManager.java**
- **Final_Project_SkyForce/src/SkyForce_MainFrame/Home.java**
- **Final_Project_SkyForce/src/SkyForce_MainFrame/ImageClass.java** :we are using some image in our project
- **Final_Project_SkyForce/src/SkyForce_MainFrame/Main_Class.java** :It maintain the running of the code
- **Final_Project_SkyForce/src/Player.java**:In this game Player class rule an important work in game

- **Final_Project_SkyForce/src/SkyForce_MainFrame/SkyForceFrame.java**
:Its created the main frame of the game

○ **Tools:**

- **Languages :** In our project we using object oriented programming language JAVA
- **IDEs :** Eclipse

- **Future Directions :** As we know that today android mobile are more available and popular in ourselves that's why we want to upgrade our project and the Later versions may be developed for **Android**.

❖ **Software Project Metrics :**

● **Code Level :**

- **LOC :** Source lines of code (SLOC), also known as lines of code (LOC), is a software metric used to measure the size of a computer program by counting the number of lines in the text of the program's source code.
- **NCLOC :** Non-Comment Lines of Code is used to determine the amount of non-commented source lines of code. It counts all lines that are not regular comments, Javadoc comments or blank.
- **COLC:** Count lines of code" that allows you to count all number of your code and exclude comments and blank lines at the same time.

Number of LOC	871
Number of NCLOC	388

Number of CLOC	483
Density of Comments[CLOC/LOC]	0.5545
Average LOC in a class	97

○ **Design Level:**

No Package	1
No Sub-packages,	0
No Classes,	9
No Interfaces,	2
No Abstract classes	0
Public attributes[static variable percentage]	21
No Methods	42
No Methods per class	5

● **Collaborations :**

Project collaboration is a method by which teams and team leaders plan, coordinate, control and monitor the project they are working on. This collaborative process works across departmental, corporate and national boundaries and helps especially with projects as they grow in complexity.

Simply, to collaborate means to work together towards a common goal. Sounds just like project work,

Here are a few things we can do to give collaboration a healthy start in our organization.

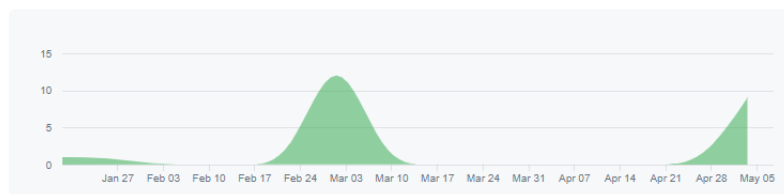
- **Communicate.** As a project manager you know that good communication is the foundation of everything, so it goes with installing a collaborative environment. Not only must you properly communicate, but get your team to do so, too.

- **Train.** Like learning anything new, we need guidance and direction. Set up a training session for our team to teach them how to use and why they need online project management tools that make project collaboration possible.
- **Change.** Old habits die hard, but you need to get your team to move away from old methods of communications, like emails, and get comfortable with more interactive and collaborative communications.
- **Share.** That's what collaboration is all about, and it won't work unless you break down the virtual walls that have separated team members in the past. For example, share your calendars, that way everyone is on the same page with deadlines, meetings, etc.
- **Check-in.** When you lead a project you don't set the path and let it run its course. The same goes with implementing collaboration. That's why you must monitor and have regular meetings with them to field questions and track their progress.

- **LOC addition, deletion by each project member:**
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NAME	Addition	Deletion
Anwar Kabir Sajib	556	0
Kamruzzaman Shekh	1018	379
Emran Hossain	238	0

Contributions to master, excluding merge commits



❖ **Software Project Deliverables :** we deliver the source code of our project

❖ **Summary :** It is very interesting to play your own developed game. It is more interesting to watch anyone else playing your own game. This project will deliver the homemade childhood version of cricket online. Beside these ,this project also build up

a collaboration with team member and also get an experience to work with various person.

❖ **References :**

- www.google.com
- www.wikipedia.com
- www.youtube.com
- www.javatpoint.com
- www.geeksforgeeks.org/java
- Tutorials of Anisul Islam