Generalitat de Catalunya
Departament d'Educació

MASTER'S DEGREE
CLIL & FLE
CONTENT AND LANGUAGE INTEGRATED LEARNING - FOREIGN LANGUAGE EDUCATION

UAB
Universitat Autònoma de Barcelona
Facultat de Ciències de l'Educació

Sockets & Communication

INS CAPARRELLA
Ferran Eloi Gutiérrez Martos

Generació Plurilingüe (GEP)
Year 2
2019-2020

Identification of the GEP project

Title	Sockets and communication
Authorship	Ferran Eloi Gutiérrez Martos
School	INS Caparrella
Students' CEFR Level (A1, A2...)	
Grade	1st year in vocational training in high degree of web applications development
Content area(s)	Object Oriented Programming. Use of socket streams and graphics.
Number of sessions (4, 6 or 9)	4
Teacher(s) involved	Ferran Eloi Gutiérrez Martos
Keywords	Java, developer, game, graphics, communication, sockets, multicomputer

1. OUR PROJECT

Introduction:

The aim of this project is to engage my students to have a different feel and approach for the programming language and its possibilities when developing their own games.

Driving question:
How can you develop your own network game?

Final product:
Think and come up with a game that can communicate more than one user through a computer network

2. GOALS	2. HOW DO YOU KNOW STUDENTS ARE MAKING PROGRESS? (assessment criteria)
1. (C/L) Describe and understand the communication process between two programs on different computers (C/L)	1.1. They terminology and some concepts used in the classroom will be presented with different assessment tools: kahoot, moodle questionnaires.
2. (L) Allow students work in small groups in projects and develop the necessary skills in order to develop computer games and remove the misconception of work-alone and not having to deal with other people	2.1 Students can suggest ideas of others and evaluate (pros/cons) and join to the group they will feel more comfortable for their game proposal. 2.2 Students need to create the instructions of the game and write in English. The instructions need to be clearly understood.

3. (C) Train with a minimal skeleton of a game provided by the teacher to understand and test how to establish communication between two computer programs	3.1 Students code and test their own games until those programs work without errors. The source code should be only commented in English
4. (L) Describe the networking process using the correct terminology and language	4.1 Developing assessment rubrics. 4.2 Students will play all the games created and score all of them in an evaluation rubric or a matrix.

3. CURRICULUM CONNECTIONS
SPECIFIC COMPETENCES AND KEY CONTENTS

Subject-matter curriculum		**Foreign language curriculum**	
Specific Competences	**Key Contents**	**Specific Competences**	**Key Contents**
Competències específiques del currículum de DAW: **r) Resoldre situacions, problemes o contingències amb iniciativa i autonomia en l'àmbit de la seva competència amb creativitat, innovació i esperit de millora en el treball personal i en el dels membres de l'equip.**	**Els continguts del mòdul de programació son propis de les unitats formatives:** • **UF4 (Programació orientada a objectes).** • **UF5 (Programació orientada a objecte. Llibreries de classes fonamentals).**	**Participar en grups.** **Interpreta informació professional en llengua anglesa (manuals tècnics, instruccions, catàlegs de productes i/o serveis, articles tècnics, informes, normativa, entre altres), aplicant-la a les activitats professionals més habituals**	**Comprensió de missatges orals:** - **Terminologia específica del sector de la informàtica i les comunicacions** **Interpretació de missatges escrits:** - **Terminologia específica del sector de la informàtica i les**

s) Organitzar i coordinar equips de treball, supervisar-ne el desenvolupament, amb responsabilitat, mantenint relacions fluïdes i assumint-ne el lideratge, així com aportant solucions als conflictes grupals que es presentin. t) Comunicar-se amb els seus iguals, superiors, clients i persones sota la seva responsabilitat utilitzant vies eficaces de comunicació, transmetent la informació o coneixements adequats i respectant l'autonomia i la competència de les persones que intervenen en l'àmbit del seu treball. n) Mantenir un esperit constant d'innovació i actualització en l'àmbit del sector informàtic. y) Interpretar en llengua anglesa	Del currículum de DAW (Desenvolupament d'aplicacions web)		comunicacions. Idea principal i idees secundaries. Producció de missatges orals: - Registres emprats en l'emissió de missatges orals. - Manteniment i seguiment del discurs oral: suport, demostració de la comprensió, petició d'aclariments i altres Emissió de textos escrits: - Elaboració de textos senzills professionals del sector i quotidians. - Adequació del text al context comunicatiu. - Registre Coneixement de l'entorn sociocultural i professional: - Reconeixement de la

documents tècnics senzills i les comunicacions bàsiques en els circuits d'una empresa del sector informàtic.			**llengua anglesa per aprofundir en coneixements que resultin d'interès al llarg de la vida personal i professional**

4. 21st CENTURY COMPETENCES			
Collaboration	✔	Information, media and technology	✔
Communication	✔	Leadership & Responsibility	✔
Critical Thinking and Problem Solving	✔	Initiative & Self-direction	✔
Creativity & Innovation	✔	Social & Cross-cultural	✔
Others:			

5. KEY COMPETENCES			
Communicative, linguistic and audiovisual competence	✔	Digital competence	✔
Mathematical competence	✔	Social and civic competence	✔

Interaction with the physical world competence	✔	Learning to learn competence	✔
Cultural & artistic competence	✔	Personal initiative and entrepreneurship competence	✔

6. CONTENT (Knowledge and Skills)

CONTENT-RELATED KNOWLEDGE	CONTENT-RELATED SKILLS
UF5-RA3: **Desenvolupar interfícies gràfiques d'usuari simples, utilitzant les llibreries de classes adequades** **Utilitzar les eines de l'entorn de desenvolupament per crear interfícies gràfiques d'usuari simples.** **Programar controladors d'esdeveniments** **Desenvolupament de classes, i creació d'atributs, mètodes, constructors, i utilització de classes heretades.** **Aplicació de les estructures d'emmagatzemament (arrays, estructures, llistes, etc).** **Escriu programes que utilitzin interfícies gràfiques per a l'entrada i sortida d'informació.**	**Technical skills:** - **Project management** - **Java ™** **Soft Skills:** - **Communication and collaboration.** - **Writing and presenting** - **Self-awareness** - **Professionalism** - **Code navigation** - **Deployment strategy**

7. REFERENCES

DECRET 199/2015, de 15 de setembre, pel qual s'estableix el currículum del cicle formatiu de grau superior de desenvolupament d'aplicacions web. https://portaldogc.gencat.cat/utilsEADOP/PDF/6958/1444503.pdf

Article: The crucial computer science skills employers are craving: https://www.rasmussen.edu/degrees/technology/blog/computer-science-skills/

Council of the European Union (2018). Council recommendation of 22 May 2018 on key competences for lifelong learning. Official Journal of the European Union, C 189/01, 4.6.2018, pp. 1-6. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&from=EN [ac¬cessed 28.11.2018].

"Core competencies in the digital field. Identification and implementation in compulsory secondary education." Generalitat de Catalunya. Ministry of Education.

8. COMMENTS (optional)

A cross curricular project involves language teachers and subject teachers creating a plan together. For high degree of vocational training the subject teacher has not usually the support of a language teacher because English is not a subject in their curriculum.

On the other hand, I needed to conceptualize again the curriculum areas, because CLIL mainly consists in an approach from different perspectives and the curriculum is not intended to be explained in English. The content seems to be the starting point for the

planning process but at the same time the use of language in every moment needs a great effort from myself to re-adapt that content. Maybe that happens because the curriculum has too much teaching load.

In general, the problem is that doing projects is OK, but at the same time they ask us to write notes to formative units that are parts of the subjects. And sometimes projects can involve not only formative units of a subject, but even different subjects.

9. ACKNOWLEDGEMENTS (optional)

I would like to thank the teachers who I have had in the GEP1 and GEP2 courses for all the patience and also for the support they have given us in their classes.

Skills: R: reading , S:speaking, L: listening, W: writing, I: Interaction
Interaction: T-S: teacher-student, S-S: student-student, SG: small groups, WG: whole group, S-Expert, S-World
Assessment: PA: Peer assessment, SA: Self-assessment, TA: Teacher assessment, AT: Assessment tools

10. UNIT OVERVIEW

Session	Activities	Timing	Skills	Interaction	ICT	Assessment
1	***1.1** Introduction & brainstorming:* Present the driving question: **How can you develop your own network game?** (5') **Task 1:** Brainstorming of ideas with sticky notes. (15')	5' + 15'	R, W, S, L	T-S, WG T-S S-S	Instructions on Google Documents	SA TA

	1.2 *Get ready for the good jobs!* **Task 2:** Read an article, perform a wordcloud and write a personal opinion and answer a kahoot.	15'	R,W	T-S, WG	Instructions in Google Docs	TA
	1.3 Exploring the course	10'	R	T-S, S-S	Moodle resources	
	1.4 Generate project ideas and manage groups	10'	W,R	T-S S-S SG	Moodle forum	TA SA
2	***2.1*** Concepts on java networking	15 '	L, R	S-G		PA TA
	2.2 SocketServer & Socket	40'	S,L,W	S-S		
3	***3.1*** Using windows and graphics.	30'	R, S	S-S, SG	Instructions in Google Docs	PA
	3.2 Controlling the user interaction and other features.	25'	R, S	S-S, SG	-	-
4	***4.1*** Adding the instructions of the game in the game.	20'	S, W	SG		TA

	4.2 Code the rest of the game		Content Skills			SA, PA
5	***5.1*** Present the game to the classroom	40'	S-S			TA SA
	5.2 Evaluate all the games and final reflection.	15'	S-S		Rubric	TA , AT

11. SESSION PLANNING

SESSION 1: HOW CAN YOU DEVELOP YOUR OWN NETWORK GAME?

Objectives of the session:

Think on how to develop game projects and improve our skills.

Analyze skills employers are craving

This is mainly a language session.

Content-obligatory language for the session:

TECHNICAL SKILLS, SOFT SKILLS, TRENDING, HIRING, JOB ROLE, FOUNDER, CEO, COMMUNICATION, COLLABORATION, KNOW-HOW, INTERVIEWS, EYE CONTACT, FACE-TO-FACE, TEAM, APTITUDES, CRAVE APPLICANTS, PRESENTATION, BOARD MEMBERS, STAKEHOLDERS, CHALLENGING YOURSELF, AUDIENCES, ABILITIES, RECRUITERS, ASSESSMENT, SELF-AWARENESS, JOB REQUIREMENTS, INTERVIEWERS, EXPERTS, PORTFOLIO, DEPLOYMENT, EXTRACURRICULAR, INTERNSHIPS, PROJECT.

	Activities *include : Name and description; Assessment tool (if any); Material (including language support)*					
1.1	***Introduction and brainstorming*** The teacher asks to the students: **How can you develop your own network game?** The teacher shows the instructions of a ***note and vote*** task to the students (Task1). The instructions are projected on the whiteboard.	5' + 15'	R, W, S, L	T-S, WG T-S		SA

	Assessment: students will participate in the task actively and they will vote their own ideas. The most voted ideas win. **Material:** A shared and uncompleted document that needs to be completed by students. **Task1 link** (document with the instructions for the brainstorming with sticky notes)			S-S	Instructions on Google Documents	TA
1.2	***Get ready for the good jobs!*** The teacher presents the instructions of the **task 2** to the students. In this case students will work with an article about best valued skills in computer science jobs and related. The content of the article aims to show the usefulness of having skills that only could be acquired if students are ready to work in groups. The work consists in creating a word cloud image based on the text using a particular word generator to produce a visual approach of the article. The students need to read the full article and can use a term glossary provided by teacher that can help with some vocabulary. **Material:** Article of Brianna Flavin (01/14/2019) The crucial computer science skills employers are craving: **https://www.rasmussen.edu/degrees/technology/blog/computer-science-skills/** **Task 2** link. Word cloud generator: **https://www.jasondavies.com/wordcloud**	15'	R,W	T-S, WG	Word Cloud + Kahoot	TA SA

	Assessment: The performing of the task, and the generation of the word cloud and a answer a ***kahoot*** (https://kahoot.it/) questionnaire with some of the ideas expressed in the article.					
1.3	***Exploring the course*** Each student has to review all the materials given in this project. They need see where are all the linked resources related to this project. **Material:** The *moodle* course	10'	R	T-S	moodle course	-
1.4	***Generate project ideas and manage groups:*** The teacher presents the instructions of **task 3** to the students. Students will need to think about how their game works and write it in the forum so that other students can evaluate if they want to join. The creator of the game idea must give consent for another student to join their team. Otherwise he will have to join another student's team. **Material:** The moodle course of the project. **Task 3 link** **Assessment:** It is produced by making teams and also reading the project ideas. Each team decide the roles of each member of the group.	10'	W,R	T-S S-S SG	Moodle forum	TA SA

	SESSION 2: JAVA NETWORKING Objectives of the session: Learn how establish a communication through sockets in Java language. It's mainly a content session.					
	Content-obligatory language for the session: Vocabulary about networking terminology**: IP address**, **protocol**, **port number**, **MAC address**, **connection-oriented protocol**, **connection-less protocol**, **socket**.					
	Activities *include : Name and description; Assessment tool (if any); Material (including language support)*					
2.1	***Concepts on java networking*** from https://www.javatpoint.com/java-networking The teacher presents this link with the material that students need to test. This site has a presentation of this material to the students. Each team has time to test the source codes in their Java Integrated Development Environment (IDE) named Eclipse to understand try to understand how it works. Members can work together.	20'	R	WG	-	-
2.2	***SocketServer & Socket*** The teacher presents the task4 that links to an adapted youtube video with the Edpuzzle tool. The video will stop from time to time and ask questions intereractively to the students.					

	The content of this video is an example of how to code a simple client-server program in Java. **Material:** Networking concepts from the URL https://www.javatpoint.com/java-networking **Task4:** An **EdPuzzle video** with questions and answers adapted from **https://www.youtube.com/watch?v=EPChaMj4te0** **Assessment:** It's defined through questions inside the edpuzzle video, and every student can use it as a self-assessment.	35'	L, I	T-S	EdPuzzle	SA TA

	SESSION 3: GRAPHICS, INTERACTION, ACTION!!! Objectives of the session: Learn fundamentals of graphics in Java language to design a minimal graphical user interface (GUI) for the game and learn how to program the user interaction of the game. This is by far a content session. I readapted it to enhance the use of spoken language.
	Content-obligatory language for the session: Due to the java platform has a great amount of classes only for graphics programming in this session it will be used terms related to the understanding of components, event handling, painting, etc. Vocabulary of commonly GUI controls for JavaFX: Label, Button, ColorPicker, CheckBox, RadioButton, ListView, TextField, PasswordField, Scrollbar, FileChooser, AdressBar, Slider

	Activities *include : Name and description; Assessment tool (if any); Material (including language support)*					
3.1	***Using windows and graphics*** The teacher provides a link to a java package with examples of how graphical programs work. The teacher gives to each group a sheet that will be used to distribute the different examples among members of the group. Each member is responsible of run at least the assigned examples. After examine the code he/she will try to explain how it works to another team member. **Material:** And a zip with a package of java examples provided by the teacher to their students. **Task5 link** - *Video Lectures support:* Some history *AWT* vs *Swing* vs *JavaFX*: https://www.youtube.com/watch?v=uxmhqv0in34	30'	R, S	S-S, SG	Instructions in Google Docs	PA

	Anatomy of a Basic JavaFX Program: https://www.youtube.com/watch?v=OfWdAgXdcZY **Assessment: Task 5** have an assessment between pair of students in the same group.					
3.2	***Controlling the user interaction and other features.*** The user interaction in programs provided by key events and mouse events are explained in: https://www.tutorialspoint.com/javafx/javafx_event_handling.htm https://www.developer.com/java/data/multithreading-in-javafx.html The groups of students need to learn how to build a small JavaFX program and how to handle the events of the user. To perform these students can copy the code and test in their IDEs. **Material:** - *Video Lectures support:* Building my First JavaFX Program: **https://www.youtube.com/watch?v=vXiOO3JceH8** Creating MouseEvents for JavaFX: **https://www.youtube.com/watch?v=91w5Ts64io8** **Assessment:** The teacher will see if the groups are able to create first JavaFX programs.	25'	R	SG	-	-

	SESSION 4: TIME TO CODE Objectives of the session: This session introduce an important tool for building interfaces in JavaFX GUI. The rest of the time is given to the groups for beginning to code their games.					
	Content-obligatory language for the session: Vocabulary related with GUIs: Libraries, UI elements, properties, layout, padding, spacing, width, height, transforms, anchor pane, border pane, flow pane, grid pane, containers, hierarchy, text area, preview, event handlers, controllers.					
	Activities *include : Name and description; Assessment tool (if any); Material (including language support)*					
4.1	***Adding the instructions of the game to an scene.*** *The teacher presents the students a tool named JavaFX Scene Builder and how SceneBuilder works and how it can be integrated in the Eclipse IDE (Integrated Development Environment).* *Then the teacher shows how* ***SceneBuilder*** *can be used to create simple forms based on XML language (.FXML files). Finally, the teacher shows how to load those forms dynamically in an example of Eclipse Java Project.* *The students can download this tool from this link: https://gluonhq.com/products/scene-builder/* *After that, each group has to write the instructions of the game in an FXML file.*	30'	S, W	SG	-	TA

	Material: *A tutorial for students support of SceneBuilder:* *https://examples.javacodegeeks.com/desktop-java/javafx/scene/javafx-scene-builder-tutorial/* **Assessment:** The teacher will see if the groups are able to use correctly SceneBuilder.					
4.2	***Code the rest of the game*** This time is only used for each group for coding the game. They will have time until show the games in session 5. **Material:** (no more materials here) **Assessment:** (no assessment here)	25'	Content Skills	SG	-	-

	SESSION 5: THE GAME AWARDS DAY Objectives of the session: This is the day of truth. Each group will have to show if they have been able to play their game and if it works in a network environment. Also, the game need to be presented and groups can choose from record the presentation or make a live presentation.
	Content-obligatory language for the session: Vocabulary and phrases for making presentations in English.

	Activities *include : Name and description; Assessment tool (if any); Material (including language support)*					
5.1	***Present the game to the classroom*** *This is the time for the groups to present their project to the rest of the class. It could be a collaborative talk but it also needs to be prepared. Each group can use 10 minutes to present their project and make a little demo and talk about the game. Only one presentation per group is allowed.* *Students can choose to make a video presentation or make a live presentation.* ***Material:*** *This webpage is linked from the moodle course to help students to create their presentation.* *https://www.english-at-home.com/business/vocabulary-and-phrases-for-making-presentations/* ***Assessment:*** *The teacher will determine the student's group current level of knowledge and skills programming and talking in english after the presentations.*	30'	S, W	SG	-	TA
5.2	***Evaluate all the games and final reflection.*** After all the presentations a rubric for the students' participation will be shared for co-evaluate its own project. This could be just sent as a task	25'	Content Skills	SG	-	-

MATERIALS for Session 1

Task1 link

How can you develop your own network game?

Task 1: BrainStorming with sticky notes

	**1st) Note ideas:** Each student is paired with whoever sits next to them. The teacher provides the students different colour papers or a little pad of sticky notes (six or seven). Using a thick marker pen, they write one idea on each note. Teacher will set up a countdown timer of 10 minutes and project on the whiteboard with https://pomofocus.io/
	**2nd) Time to speak up:** When time is finished, a student of each group announces their ideas to the whole group and posts their notes on the wall.
	**3rd) Clustering the notes** Notes are clustered or grouped by students and clusters are named.
	**4th) Is that everything?** Students can suggest more ideas or categories if they want.
	**5th) Voting the ideas** Each team votes the concepts they want. Each group has a number of votes and they can vote they care most about. The concepts that get the most voted win.

Task 2 link.

Crucial computer science skills for getting a job

Task 2: Learning what employers are searching

Instructions: Perform this task individually.

	**1st) Open and read the article** Open https://www.rasmussen.edu/degrees/technology/blog/computer-science-skills/ in a web browser. This is an article about which skills are best valued for computer science employers. In a different tab of your web browser open this word cloud generator at https://www.jasondavies.com/wordcloud/
	**2nd) Modify the text and adapt it to visualize the main concepts** Copy and paste the article to your text editor (libreoffice, etc). Read the article and try to find and remove all the personal names in order to they dont appear in the wordcloud
	**3rd) Generate the word cloud** Copy and paste the text modified to the word cloud generator and generate a word cloud. The world cloud present qualitative data in a single image. Change the parameters as much as you can (max words, orientation, etc) to obtain different types of clouds.
	**4th) Upload** Write a single paragraph (2 or 3 lines) in terms of personal opinion of what you would consider most important if you were an employer. Upload your paragraph and image of wordcloud to the shared place of the moodle of the classroom.

Image of roles and responsibilities defined in the article:

Task3 link

Think on what game you want create.

Task 3: Creating the idea of your own game

Something easy like hangman in a network could be fine!

Knowing the game requirements.

1st) Your game will use some communication between two computers. (we will learn this so don't worry too much about it)

2nd) It could use some graphics (but not in a professional way). Remember we are just learning.

3rd) The instructions and the source comments of the game need to be written in english.

4th) The number of players, scores and ranking depends of the game.

5th) Everything else is your decision!

Answer how you can play your game

In order to find other students can vote your game you must answer this questions and write them in the moodle forum area.

a) Try to think and write how your game works in a document.
b) What is the purpose of the game?
c) Is your game multiplayer? or is it turn-based?
d) Do you have a scoring system and a hall of fame for top rated players?

Everything else you can write will be fine.

After read the other students ideas, you can try to enrol in their teams. Just ask them for that in the forum. There groups will be of 4 students per team.

ROLES of GROUP CARD

Establish roles of group according to https://blog.tcea.org/grouping-tools/

Role	Description	Says
Seeker	Serves as leader and provides directions to the group Helps keep communications open and respectful of all Keeps everyone focused on the group's goal Assists group in seeking out solutions to group problems	"let's hear from ___ next" "That's interesting, but let's get back to our task." "Since this is a problem we are facing together, how can we solve it together?"
Recorder	Keeps a public record of team's ideas and progress Uses charts, colors, to highlight and summarize ideas	"I think I heard you say___; is that right?" "How would you like me to write this?"
Sense-Maker	Restates conclusions and responses Prepares a summary of group's efforts	"Does this make sense and reflect what we've done today?" "Have I left anything important out?"
Speaker	Active participant Responsible for sharing group's work, in progress or finished, to the whole class	"How would you like this to sound?" "How much of what we discussed should be shared with the class?"

Every group must define the role of each member of the group and write down here.

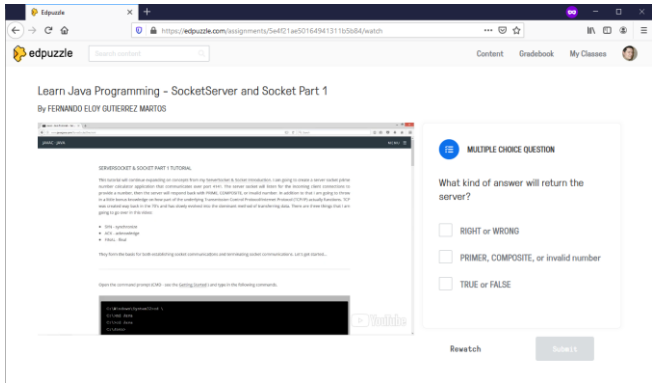
- Seeker:
- Recorder:
- Sense-Maker:
- Speaker:

MATERIALS for Session 2

Links to access to original video and EdPuzzle adaptation:

Original video at https://www.youtube.com/watch?v=C0HzCaEr_uI

EdPuzzle https://edpuzzle.com/media/5e4f213f8233f841378dbe7c in action: Stopping a video and asking questions to the students and assessing instantly.



MATERIALS for Session 3

Task5 link

Can you explain how this example works?

Task 5: I hear and I forget. I see and I remember. I do and I understand.

1st) Create a copy of this document in your google drive account and share this with the other members of the group. Distribute some code examples among the group members.

2nd) In the column of the table write down the names of the examples. Try to no repeat.

3rd) Each member will review at least two programs. Write down his/her name in Source member name colum. When he/she has clear how the program works will tick with ✓ the column "ready to explain it?".

4th) When a program is ready to be explained, then a destination member can ask him/her to explain how that program works. And then the source member will try to explain.

5th) If the destination member has understood how the program works, then he/she will tick with a ✓ in the column "understood or not", or if he didn't understand will tick a X .

Example program name	Source member name	Ready to explain it ? (✓ or X)	Destination member name	Understood or not ? (✓ or X)

Glossary from https://www.tutorialspoint.com/javafx/javafx_ui_controls.htm

S.No	Control & Description
1	**Label** A Label object is a component for placing text.
2	**Button** This class creates a labeled button.
3	**ColorPicker** A ColorPicker provides a pane of controls designed to allow a user to manipulate and select a color.
4	**CheckBox** A CheckBox is a graphical component that can be in either an on(true) or off (false) state.
5	**RadioButton** The RadioButton class is a graphical component, which can either be in a ON (true) or OFF (false) state in a group.
6	**ListView** A ListView component presents the user with a scrolling list of text items.
7	**TextField** A TextField object is a text component that allows for the editing of a single line of text.
8	**PasswordField** A PasswordField object is a text component specialized for password entry.
9	**Scrollbar** A Scrollbar control represents a scroll bar component in order to enable user to select from range of values.
10	**FileChooser** A FileChooser control represents a dialog window from which the user can select a file.
11	**ProgressBar** As the task progresses towards completion, the progress bar displays the task's percentage of completion.
12	**Slider** A Slider lets the user graphically select a value by sliding a knob within a bounded interval.

MATERIALS for Session 5

Rubric link for the teammates reflection.

Team Name: _____

Members of the project Participation Rubric

Time for co-avaluation.
In this final task evaluate and rate using this rubric your teammates filling points column from 1 to 4 points per category.

Teammate 1: _____

Category	Criteria				Points
	1	2	3	4	
Helping	The teammate never offered help to other teammates.	The teammate sometimes offered help to others.	The most of the time the teammate offered help to the group.	The teammate always offered help to other members.	
Listening	The teammate never listen others ideas.	The teammate sometimes listen others ideas.	The teammate used to be interested on the others ideas most of the time.	The teammate always listen other ideas.	
Participating	The teammate never partipate in the project.	The teammate sometimes Participate in the project.	The teammate partipate most of the time in the project.	The teammate always participated in the project.	
Coding	The teammate never coded anything	The teammate tried to code sometimes but he/she didn't know how to code.	The teammate usually solve coding problems.	The teammate used to code everything	
Questioning	The teammate ask nothing to other team members.	The teammate sometimes ask questions and discussed to other team members.	The teammate ask questions and discussed to other team members most of the time.	The teammate always ask questions and discussed to other team members.	
Respecting	The teammate was disrespectful to rest of the team.	The teammate tried to be respectful with other ideas and efforts.	The teammate most of the time was a respectful person with others.	The teammate always is plenty respectful with other ideas and efforts.	

Poll to vote the rest of the teams and get a winner!