Capstone Project: Short Stories Android App

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Course:

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Exclusive summary:

According to the Washington Post, the Americans Time Use Survey conducted by the Bureau of Labor Statistics indicated that since 2004, Americans that read for pleasure have declined by 30 percent based on about 26,000 individuals. In 2004, many Americans read an average of 23 minutes a day per person. In 2017, many Americans read an average of 17 minutes per day (Ingraham, 2018). Therefore. reading has become underrated and people lack time to read. Instead of reading books, people can listen to audiobooks. Fatma Deniz of the Gallant lab at UC Berkeley led researchers to study the neuroscience of semantic information processing. According to their study published in the Journal of Neuroscience, the researchers used functional magnetic resonance imaging ("fMRI") and scanned the brain of the individuals while reading or listening to words. The researchers determined that whether listening to audiobooks or reading a book, the brain processes the semantic information identically (Offord, 2019).

Audiobooks have been used for decades and audiobooks apps have been in the markets. For people who enjoy books, listening to audiobooks may be convenient and it is less time consuming due to busy lives. Audiobooks can be listened to while driving and listened to while doing different activities. Listening to audiobooks can assist in retaining information and improve critical listening skills. Audiobooks can help people that have problems with reading a foreign language to improve his/her understanding of the language. Audiobooks have been used in ELS classes to assist students learning English. Some of those audiobook apps are network applications that require the internet and it can be too complex for certain users to use. Those apps also require users to download the audiobooks from the internet. Moreover, those audiobooks are costly.

For this project, I was able to follow through with the plan to build a short stories audiobook app with Android Studio. The app is designed to be easy to use and simplistic. This Android app is an open source app and it is currently not a network app. This app would allow anyone with a basic understanding of technology to use the app. This has simple features such as a back to the story book activity button, a back to home button and also well as audio buttons such as play, pause and stop. This app does not require anyone to download audiobooks to the app. This app has a main activity page that displays all the short stories. When the user clicks on one of the short stories, the user will be able to go to that short story's activity page. Then the Android app would allow the user to listen to the short audio story, stop playing the short story and pause the short story. The short audio stories app uses copyright free audio stories from the Internet Archive non-profit digital library.

During the development and testing phase, the Android Studio software was used for the implementation for the open source Android app. In the early week of the development, during the design phase, the look of the app was redesigned two times. In the development phase, the app was implemented. In week 5 and 6, there was testing for the app by volunteers and feedback was collected for testing. The testers' feedback was to help find bugs for the app. In week 6 and 7, the app was polished and completely implemented.

Part I:

Project name and description:

According to the Washington Post, the U.S. Department of Labor did a Time Use Survey surveying 26,000 Americans. Their survey showed the facts which indicated that in 2004, Americans that read for pleasure have declined by using 30 percent. In 2004, many Americans read an average of 23 mins a day. However, in 2017, many Americans read an average of 17 minutes a day (Ingraham, 2018). Therefore, reading is underrated. Instead of reading books, people can listen to audiobooks. Fatma Deniz of the Gallant lab at UC Berkeley led researchers to examine the neuroscience of semantic statistics processing. According to the Journal of Neuroscience, the researchers used functional magnetic resonance imaging ("fMRI") to scan the brain of the participants of the research. The researchers found that whether or not listening to audiobooks or reading a book, the mind processes the semantic information identically (Offord, 2019).

Audiobooks were used for many years and it's been part of people's lives. Audiobooks have been used for decades in educational environments, and by consumers. Audiobooks have been used in ELS classes to assist students. For people who enjoy reading books, listening to audiobooks may be convenient and less time consuming for many people due to busy lives. Audiobooks can be listened to while driving, and listened to while doing different activities. People can listen to audiobooks while reading along a book. Listening to audiobooks can assist in retaining information and improving critical listening skills. Audiobooks can help people that have problems with reading English to improve his/her understanding of the language.

For this capstone project, I'm building an Android application named "Short Stories". This Android application would allow anyone with a basic understanding of technology to use the application. This application will benefit anyone who enjoys listening to audiobooks.

Problem and/or issue in technology:

There are many audiobook apps on the market. The audiobook apps in the market are network applications that require the internet to download the audio books and sometimes to listen to the audiobooks. Those applications may be too complicated for certain users to use and costly.

Solution to the problem and/or issue in technology:

For this project, I intended to build an audiobook app with Android studios that would be easier to use and simplistic. This Android app will be an open source app and it will not be a network app. This app will allow everybody with a basic comprehension of technology to use the app. This app will not require users to download audiobooks to the app. This app will have a main activity page that will direct the users to choose the short stories that the user is interested in . When the user clicks on one of the stories, the user will be directed to the page. Then the user can play or pause or stop the story from playing in the app. This app will use copyright free audiobooks from the internet Archive digital library and copyright free images.

Evidence that the proposed project is needed:

There are many audiobooks applications on the market. However, they may be too complicated for the user to use and monthly subscription fees may apply those applications.

Project Goals and Objectives:

Goals for the long-term:

- Update the app with more short audio stories
- Add more features e.g. increment volume
- Improve the UI/UX interface
- Simplify the app
- Improve fonts used for the app

Objectives:

- UI/UX design ideas (week 1)
- Implement the main activity page and change of UI design (week 2)
- Implement the other activity pages with play button, pause button, and stop button (week 3)
- Implementation of app (week 4)
- Implementation of app (week 5)
- Finish implementing the app and test app (week 6)
- Polish and finalize the app, finalize the documentation and video presentation (week 7)
- Turn in rest of the assignments (week 8)

Environmental Scan/Literature Review:

This environmental scan depicts many audiobooks apps and its design. In the Tom's guide of "Best audiobook apps in 2020" (Corpuz, 2020), Audible is rated as the audiobook app. However, there are many other audiobook apps which include Serial Box, Google Play Books, and Kobo application. Audible is integrated with Amazon's Kindle tablet. This software is

designed for the consumer to store a playback list, bookmark the audiobooks , and set a sleep timer in the app. This application has a feature for syncing which allows the consumer to access the audiobook with their cell phone, tablet or computer. The users have to download the audiobook to listen offline.

The Serial box app has both the text for the audiobook and the audiobook displayed in the app. Serial Box application sends bite-sized chunks of audiobooks to the user. The Serial Box features drama, fantasy and sci-fi audiobooks. The first episode from Serial Box is free. Google Play Books also implemented audiobook features that allows the user to listen to the audiobooks the user purchased. The audiobook features allow the user to "to skip ahead or scroll along the timeline, jump to chapters, and configure playback speed and a snooze timer" (Corpuz, 2020). Kobo is another audiobook application. Kobo offers ebooks and audiobooks. Kobo has "a timeline scrubber bar, timeskip buttons, chapter navigation, playback speed configuration and a snooze timer" (Corpuz, 2020).

Stakeholders and Community:

The stakeholders include anyone who uses this application and the contributor to the project. The stakeholders will gain a short story audiobook application that is easy to use for anyone with a basic understanding of technology. The stakeholders will also gain access to this open source project. The stakeholder will gain an application that works offline and does not need to download audiobooks. The stakeholders will test the app and fill out a survey that may contribute to improving the app. The contributor would gain experience with developing an

Android application that would be included in the contributor's portfolio.

Approach/Methodology:

In the requirements gathering and analysis phase, the contributor will gather copyright free audio stories from the Internet Archive non-profit digital library. The contributor will also design a prototype UI/UX of the application such as Adobe XD. Once the look of the application is designed. The contributor will then start the implementation phase. The Android application will be implemented using the Java programming language with the Android Studios IDE. The front end of the project will use Java graphic features instead of Java Swing. Other programming languages that will be used for this project are CSS, and xml. This Android application will use the built in Java sound technology for implementation as well. The Android application will be debugged and tested. Once the Android application is built, the testing group for this Android application will involve anyone who can use an Android to test the app or an Android emulator to test the app with the app's Android application package file ("APK"). After the tester's feedback, the contributor may add the suggestions to improve the Android application by going through the development and testing phase to finalize the Android application.

Feasibility Discussion:

According to the Environmental Scan, the only similarity my project has with the other application is that it allows the user to play, pause and stop the audiobook that the user was listening to. This Android application I am building will not have as many features as the other audiobook applications. The audiobook application is simpler and it allows anyone with a basic understanding of technology to use it.

This application will be open source cause this project is financially feasible. The “Short Stories” audiobook application will not charge the users for compensation. The audiobooks applications in the market are proprietary software. Those apps cost a monthly subscription fee and fees to download the audiobooks. Those applications are network applications that require the internet to download audiobooks which the user purchased from the app.

The main technologies associated with the application for my project are HTML, CSS, Java, and XML. This application will not use any MySQL databases to host the audio files. The design of the application for the capstone project is different from the other audiobooks applications in the market as shown in Fig. 1.

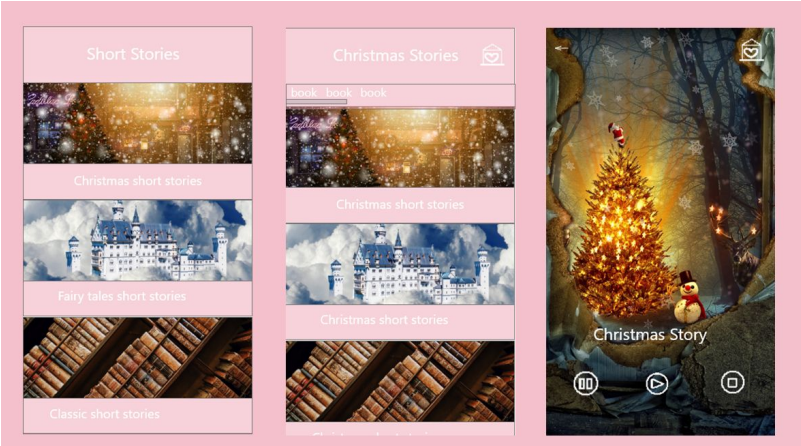

Figure 1. The user experience mockup.

Being an Android mobile application, the only foreseeable fee for the app may have an association cost with hosting it on Github. There won’t be a charge for the users of this application. The software used for these has been free to the contributor. The images from this app will be from Pixabay and Pixabay images are royalty free. According to their licence, “All content on Pixabay can be used for free for commercial and noncommercial”(Pixabay, n.d.).

The audiobooks used for this application are copyright free and have the Public Domain Mark 1.0. According to the Creative Commons licensing, the Public Domain Mark 1.0., "this work has been identified as being free of known restrictions under copyright law, including all related and neighboring rights. You can copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission" (Creative Commons, n.d.). Thus, this application does have a limitation on the audiobooks due to the available audiobooks in the Internet Archive website unlike the other audiobook applications in the market.

Part II:

Functional decomposition:

This project uses Android Studio which is free of cost. This project requires Java, and XML for the programming. This design for the Short Stories app is designed to be a very simple to use app that anyone with a basic understanding of technology should be able to use intuitively. The app consists of many classes, but the classes are similar. This app only has five audiobooks in it due to time limitation for the capstone project. This app uses copyright free audio books from the Internet Archive website and it also uses images from the copyright free Pixabay website. The basic functions of the app are that it is able to play, pause, and stop when a user is using an audiobook.

Selection of design criterion:

The main design of the app is to be very easy to use. The goals for the app are to implement a functional app and a user friendly app. The app features a back button which leads the user back the homepage of the book's homepage. In the audiobook activities pages, when the

back button is pressed, the audiobook does stop playing. Also, in the audiobook activities pages, when the home button is pressed, the audiobook does stop playing. It also leads the user back to the homepage. The app has three audio buttons: play, pause and stop for the user to utilize while using the app. The budget for this app is free. This app uses Android Studio which is free to download from the Android Studio website. This app uses the LibriVox copyright free audiobooks and it also uses the royalty free photos from Pixabay and Unsplash. The total size of the is app is space consuming due to the raw data and the imagine files.

Final Deliverables:

This project is a Short Stories audiobook open source app built with Android Studios that will be easy to use. This app should allow anyone with a basic understanding of technology to use it. This app will be a non-network app which will not require the internet to use once it is installed on the Android device. This app has an easy to navigate main activity page that displays all the short story books that the user can select and listen to. When the user clicks on one of the short story books, the app will bring the user to the short story book's activity page. Then the user can tap on one of the stories, and then the app would present the user to that audiobook page. Then the user is able to listen to the short sound story, stop playing the short story, and pause the short story, as well as return to the short story home page and the main home page.

Approach/Methodology:

In the requirements gathering and analysis phase, the contributor gathered copyright free audiobooks from the Internet Archive non-profit digital library. The contributor also gathered royalty free photos from Pixabay and Unsplash to use for the app. The contributor designed an

model UI/UX of the app and has changed the design twice. In the implementation stage, the contributor used an updated version of Android Studios and Java. The Java programming language and XML with the Android Studios IDE are mainly used for the app. The front end of the project uses Java graphic features instead of Java Swing and XML. It also uses the MediaPlayer API from Android Studios. This app has been tested by volunteers and myself for functionality. The feedback was positive.

Legal Considerations:

The Android app uses royalty free images from Pixabay and Unsplesh which is fully legal. The audiobooks used are from the LibriVox audiobooks library. These audiobooks use the public domain license from the Creative Commons which states that they do not have a copyright and one can “copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission”(Creative Commons, n.d.). The royalty free photos used for this project are from the Pixabay and Unsplash website. This project also used Github and it uses Android devices for testing the app. I did the play, pause, home, and the stop buttons depictions with Illustrator. This Android computer program will not need any permission to download and use because it is an open source computer program.

Ethical Considerations:

According to the article "Americans Read an Average of 16.8 Minutes Per Day; Spend 166.2 Minutes Watching TV", in 2017, Americans read on average 16.8 minutes a day (Jeffrey, 2018). Americans spend 166.2 minutes watching TV (Jeffrey, 2018). So, reading has become really underrated due to other activities in people’s lives. People do not feel obligated to read.

Some people may find reading to be inconvenient due to lack of time. Some people may be illiterate and may feel discouraged to read. Some people may have a very hard time reading a book that is in their nonnative language. However, according to UCB neuroscience researchers, when people listen to audiobooks, the brain would process semantic information identically as reading (Offord, 2019). Underprivileged groups, such as the lower-class families who do not have access to the Internet and people who are challenged by technology, may be negatively impacted. This open source app doesn't use the Internet to download audiobooks. Therefore, this may benefit the lower-class families that may not have access to the Internet. Also, people who are challenged may not understand how to install this Android app on an Android device or run it on an online emulator. The contributor will add information on how to install this open source app on the contributor's Github for people with technology challenges. During the testing phases, the contributor installed the app on different Android devices and had volunteers test the app. In the future, the contributor would need to update and maintain the app.

Part III:

Timeline/Budget:

2020 MAY MONDAY

CALENDAR YEAR CALENDAR MONTH FIRST DAY OF WEEK

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
27	28	29 Week 1: Start class work	30 Researched Adobe XD	01 Start designing the look for the app	02 Design the look for the app	03 Design the look for the app
04 Finish class work	05	06 Week 2: Start class work	07 Implementation of the activity pages and start collection royaty free photos to use for the app	08 Implementation of the activity page	09 Implementation of the activity page	10 Implementation of the activity page
11 Implementation of the activity page	12 Implementation of the activity page	13 Week 3: Start class work	14 Implementation of each of the audiobooks and gather copyright free audiobooks	15 Implementation of each of the audiobooks and gather copyright free audiobooks	16 Implementation of each of the audiobooks and gather copyright free audiobooks	17 Implementation of each of the audiobooks and gather copyright free audiobooks
18 Implementation of each of the audiobooks and gather copyright free audiobooks	19 Implementation of each of the audiobooks and gather copyright free audiobooks	20 Week 4: start class work	21 Implementation of each of the audiobooks and gather copyright free audiobooks	22 Implementation of each of the audiobooks and gather copyright free audiobooks	23 Implementation of each of the audiobooks and gather copyright free audiobooks	24 Implementation of each of the audiobooks and gather copyright free audiobooks
25 Implementation of each of the audiobooks and gather copyright free audiobooks	26 Implementation of each of the audiobooks and gather copyright free	27 week 5: start class work	28 testing apps and get feedback	29 testing apps and get feedback	30 testing apps and get feedback	31 testing apps and get feedback
01 testing apps and get feedback	02 testing apps and get feedback	03 Week 6: start class	04 documentation and improve app if needed based on feedback	05 documentation and improve app if needed based on feedback	06 documentation and improve app if needed based on feedback	07 documentation and improve app if needed based on feedback

2020 JUNE MONDAY

CALENDAR YEAR CALENDAR MONTH FIRST DAY OF WEEK

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
01 documentation and improve app if needed based on feedback	02 documentation and improve app if needed based on feedback	03 Week 7: Start class work	04 finalize app and finish documentation and video	05 finalize app and finish documentation and video	06 finalize app and finish documentation and video	07 finalize app and finish documentation and video
finalize app and finish documentation and video	finalize app and finish documentation and video.	week 8: Capstone presentation				

The project requirements were met for the project. However, the schedule for the project did change due to change of plans. For example, the look for the project was changed twice and this lead being off schedule. The schedule for the project was also a little off because I thought the video for the project was due by the end of week 8. As for the budget, there were no changes for the budget, and it is still zero dollars to do the project.

Usability Testing/Evaluation :

The contributor installed the app on different Android devices for the testers to test it. The testers tested the app on different Android devices. The testers felt the app is easy to use. The testers did not suggest any other features needed for implementation. The testers used the app and tested out different functions. The testers all liked the UI design. All the testers suggested that the bugs on the app needed to be changed. One of the testers made a suggestion that the font of the app can be changed because she has a difficulty reading cursive font for the titles and the font size can be changed too. The testers were asked questions on the survey that can be found in Appendix A.

Final Implementation:

This project was implemented with Java and XML using the Android Studio IDE. The layouts used for this app are the scrolling layout, linear layout, cardView and relative layout, and for some of the activities, it also uses a horizontal scroll bar. The design for the project had to be changed twice. However, the design for the project was intended to be user friendly. There were many problems I've encountered during implementation of the project using Android Studio. I had to reinstall Android Studio a few times because it couldn't find the Java environment due to the set up. I had to clear cache a lot using Android Studio and change the settings so it would install the updated version of the app to the Android devices. I had to delete the app every time I reinstalled it on the Android devices. I did not use the Android Studio built in emulator to test the project because sometimes the Android emulator device is offline and it is very slow. I used two Android tablets and two cellphones to test the project. Predominantly, the project was tested

using an older version of a Samsung cellphone. I had problems with testing the app on the newer Samsung phone due to an environmental setting problem. I debugged the code while using a newer Samsung mobile phone and the debugger showed that the buttons that use the MediaPlayer API were functioning. However, on that Samsung device, the audio did not produce any sound. However, on other devices, this app is functional using the MediaPlayer API. I also run into another problem using the MediaPlayer API implementing the play function using the media player. I had it implemented and it would play the audio everytime time the play button was pressed simultaneously using the MediaPlayer API. I did not have any problems implementing the pause and stop button.

One of the major problems I had implementing this app was a memory leak problem. I stored all the audiobook mps files in the app and the images in the app as well. Therefore, I had to allocate more space for Android Studio on my computer. I also had to reduce the size of the images used which solved the out of memory problem. I did the home button depiction, the play, stop and pause button depiction with Illustrator for the app, however, these images file size did not need to be reduced. The app is a little over 1 gigabyte because the audiobook mps files and the images files are stored in the app. The XML coding was not as complicated due to the Android Studio IDE. However, the other problem I ran into with Android Studio is sometimes I had to reinstall the same XML functions each time I restarted using Android Studio.

All the audiobook activities have similar implementations. One of these audiobooks has 62 stories. So, I made copies of XML and Java files to use to implement this book. I had to use

PowerShell script using the built in PowerShell to automatically rename these files instead of renaming these files individuals.

```
package com.example.shortstories;
import Android.content.Intent;
import Android.support.v7.app.AppCompatActivity;
import Android.os.Bundle;
import Android.view.View;
import Android.widget.ImageButton;
public class MainActivity extends AppCompatActivity{
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      ImageButton imageView1a = (ImageButton) findViewById(R.id.imageButton1);
      imageView1a.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this, xmasStories.class);
            startActivity(intent);
         }
      });
      ImageButton imageView2a = (ImageButton) findViewById(R.id.imageButton2);
      imageView2a.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this, edmunddulacfairytales.class);
            startActivity(intent);
         }
      });
      ImageButton imageView3a = (ImageButton) findViewById(R.id.imageButton3b);
      imageView3a.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this, poe.class);
            startActivity(intent);
         }
      });

      ImageButton imageView4a = (ImageButton) findViewById(R.id.imageButton5);
      imageView4a.setOnClickListener(new View.OnClickListener(){
         @Override
         public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this, grimmsfairytales.class);
            startActivity(intent);
```

```
        }
    });
    ImageButton imageView5a = (ImageButton) findViewById(R.id.imageButton6);
    imageView5a.setOnClickListener(new View.OnClickListener(){
        @Override
        public void onClick(View v) {
            Intent intent = new Intent(MainActivity.this, chekhov.class);
            startActivity(intent);
        }
    });
  }
}
```

Figure 2: MainActivity code.

Figure 2 depicts the MainActivity page or homepage of the app. In the home page of the app, the user is able to select from five different audiobooks. Then the user can tap on the imagine, and it would bring the user to the audiobook activity page.

Each ImageButton is initialized and it correlates to the ImageButton stored in the app and the image also corresponds to the image declared in the MainActivity XML layout file. In the function fellowing the inintalization of each ImageButton. The ImageButton uses an instance of the setOnClickListener which allows for an action after the user presses on an ImageButton. Inside of this function, there is the onClick function that does not return anything. This function passes the ImageButton object in the XML file. Inside of this function, it initializes an instance of the Intent built in function. The Intent built in function allows it to launch the activity in the second parameter inside of the new intent instance call. Then calling the startActivity built function, it would bring the user to the activity if the ImageButton is pressed. There are two audiobooks main page also use similar implementation as this. The project screen shots can be found in Appendix B in figure 1.1, figure 1.2 and figure 1.3.

```
package com.example.shortstories;
```

```
import Android.content.Intent;
import Android.os.Bundle;
import Android.support.v7.app.AppCompatActivity;
import Android.view.View;
import Android.widget.ImageButton;
import Android.widget.TextView;


public class chekhov extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_checkhov);

     ImageButton story1 = (ImageButton) findViewById(R.id.imageButton1);
     story1.setOnClickListener(new View.OnClickListener(){
        @Override
        public void onClick(View v) {
           Intent intent = new Intent(chekhov.this, chekhov1.class);
           startActivity(intent);
        }

     });

     ImageButton story2 = (ImageButton) findViewById(R.id.imageButton2);
     story2.setOnClickListener(new View.OnClickListener(){
        @Override
        public void onClick(View v) {
           Intent intent = new Intent(chekhov.this, chekhov2.class);
           startActivity(intent);
        }

     });

     ImageButton story3 = (ImageButton) findViewById(R.id.imageButton3b);
     story3.setOnClickListener(new View.OnClickListener(){
        @Override
        public void onClick(View v) {
           Intent intent = new Intent(chekhov.this, chekhov3.class);
           startActivity(intent);
        }

     });
```

```
ImageButton story4 = (ImageButton) findViewById(R.id.imageButton4);
story4.setOnClickListener(new View.OnClickListener(){
   @Override
   public void onClick(View v) {
      Intent intent = new Intent(chekhov.this, chekhov5.class);
      startActivity(intent);
   }

});
ImageButton story5 = (ImageButton) findViewById(R.id.imageButton5);
story5.setOnClickListener(new View.OnClickListener(){
   @Override
   public void onClick(View v) {
      Intent intent = new Intent(chekhov.this, chekhov6.class);
      startActivity(intent);
   }

});
ImageButton story6 = (ImageButton) findViewById(R.id.imageButton6);
story6.setOnClickListener(new View.OnClickListener(){
   @Override
   public void onClick(View v) {
      Intent intent = new Intent(chekhov.this, chekhov7.class);
      startActivity(intent);
   }

});
ImageButton story7 = (ImageButton) findViewById(R.id.imageButton7);
story7.setOnClickListener(new View.OnClickListener(){
   @Override
   public void onClick(View v) {
      Intent intent = new Intent(chekhov.this, chekhov8.class);
      startActivity(intent);
   }

});
ImageButton story8 = (ImageButton) findViewById(R.id.imageButton8);
story8.setOnClickListener(new View.OnClickListener(){
   @Override
   public void onClick(View v) {
      Intent intent = new Intent(chekhov.this, chekhov9.class);
      startActivity(intent);
   }
```

```
    });
    ImageButton backToHome = (ImageButton) findViewById(R.id.imageButton3);
    backToHome.setOnClickListener(new View.OnClickListener(){
       @Override
       public void onClick(View v) {
          Intent intent = new Intent(chekhov.this, MainActivity.class);
          startActivity(intent);
       }

    });

    ImageButton homeButton = (ImageButton) findViewById(R.id.homeButton);
    homeButton.setOnClickListener(new View.OnClickListener(){
       @Override
       public void onClick(View v) {
          Intent intent = new Intent(chekhov.this, MainActivity.class);
          startActivity(intent);
       }

    });
    TextView part1Button = (TextView) findViewById(R.id.part1);
    part1Button.setOnClickListener(new View.OnClickListener(){
       @Override
       public void onClick(View v) {
          Intent intent = new Intent(chekhov.this, chekhov.class);
          startActivity(intent);
       }
    });

    TextView part2Button = (TextView) findViewById(R.id.part2);
    part2Button.setOnClickListener(new View.OnClickListener(){
       @Override
       public void onClick(View v) {
          Intent intent = new Intent(chekhov.this, chekhovmain2.class);
          startActivity(intent);
       }
    });
  }
}
```

Figure 3: Chekhov main activity code.

In figure 3, it shows one of the Chekhov's main activity pages. Three of the audiobooks

use templement for their main activity page. The user is able to navigate to the audiobook, the home page and to this page from the audiobook page.

Each ImageButton is initialized and it correlates to the ImageButton that is declared in the XML. The ImageButton would navigate the user to the story, the home page, as well as back to the current page. These audiobooks have many files and it has to be divided between more than one activities pages. So, the textButtons will redirect the user to the different chapters of the book when it is pressed. The project screen shots can be found in Appendix B in figure 1.4, figure 1.5 and figure 1.6.

```
package com.example.shortstories;
import Android.content.Intent;
import Android.media.MediaPlayer;
import Android.net.Uri;
import Android.provider.MediaStore;
import Android.support.v7.app.AppCompatActivity;
import Android.os.Bundle;
import Android.view.View;
import Android.widget.ImageButton;

import java.io.IOException;
public class chekhov1 extends AppCompatActivity {
   MediaPlayer mediaPlayer;
   ImageButton StopButton, PauseButton, PlayButton;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_chekhov1);
        mediaPlayer = MediaPlayer.create(chekhov1.this,
R.raw.schoolmasterandotherstories_01_chekhov_64kb);

       ImageButton backToHome = (ImageButton) findViewById(R.id.imageButton3);
       backToHome.setOnClickListener(new View.OnClickListener(){
           @Override
           public void onClick(View v) {
               Intent intent = new Intent(chekhov1.this, chekhov.class);
               startActivity(intent);
               mediaPlayer.stop();
```

```
            }
        });
        ImageButton homeButton = (ImageButton) findViewById(R.id.homeButton);
        homeButton.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(chekhov1.this, MainActivity.class);
                startActivity(intent);
                mediaPlayer.stop();
            }
        });
    }
    public void clickPlay(View V){
        mediaPlayer.start();
    }
    public void clickPause(View V){
        mediaPlayer.pause();
    }
    public void clickStop(View V){
        mediaPlayer.stop();
        mediaPlayer = MediaPlayer.create(chekhov1.this,
R.raw.schoolmasterandotherstories_01_chekhov_64kb);
    }}
```

Figure 3: Chekhov audiobook activity code.

In figure 3, it shows one of Chekhov's audiobook pages. All the audiobook pages use this design but with different photos and different audiobook.. In this activity page, the user can be able to navigate to the home page and as well back to this page from the audiobook page. The user is also able to play, pause, and stop the audiobook.

An instance of the MediaPlayer is created to store the audiobook file. The clickPlay Method is called in onClick declaration in the corresponding activity XML page in the playButton. This allows the user to play the audio file once the user presses the play imagine on

the app. The clickPause Method is called in onClick declaration in the corresponding activity XML page in the pauseButton. This allows the user to pause the audio file once the user presses the pause imagine on the app. The clickStop Method is called in onClick declaration in the corresponding activity XML page in the stopButton. This allows the user to stop the audio file once the user presses the stop imagine on the app. This method calls for the stop of the instance of the audio file by setting it to null and it disables playback. Then it creates another instance of the audio file in the method to store the audio file. Therefore, when the user presses the play button, the user is able to replay the audio file. A screenshot of this can be found in Appendix B in figure 1.7.

Conclusion:

The technical problems I had was during the implementation of this Android app. I had many problems using the MediaPlayer API such as environmental problems where the MediaPlayer API did not function on one of the Samsung devices. However I was able to use other devices for testing the app and the MediaPlayer API does function on other devices. The other problem I had was setting problems with using Android Studio. In addition another problem I had was a memory leakage problem in which I had to allocate more space for Android Studio and reduce the sizes of the images I used for the project. The app is designed to be simple to use for anyone that has a basic understanding of technology and I was able to design the app with the XML layouts.

Building this application has taught me more about programming with Android Studio. I've learned that MediaPlayer isn't the best choice for implementing this app because it has

environmental settings problems running on certain devices. I learned more different built in functions used in Android Studio. I also learned more about the different layouts for Android Studio. I learned that I need to reduce the size of the app due to out of memory problems using Android Studio. Currently, I only implemented five short stories books. In the future I plan to reduce the size of the app, add more short stories. I might consider adding more features to the app. I also plan to change the font of the app for the book titles in order to make it more readable.

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Appendix

Appendix A

Usability Evaluation Test Plan form for the testers

Name:

Feedback Due Date:

Product: Short Stories Android App.

Test Objectives: The test will identify programming runtime errors, usability problems, and feedback on the app.

Test Tasks: Go through the app's main activity and the short stories pages and check for functionality.

Feedback Survey

1. Was the interface intuitive and easy to use?

2. Was the interface a good visual experience?

3. Did you encounter any problems using the application?

4. How was your overall experience using these applications?

5. Are there any functions that you think this application needs to add?

6. Are there any design changes that you think are needed for this application?

Appendix B

Figure 1.1 MainActivity page or homepage of the app.

Figure 1.2 Fireside Christmas Short Stories main activity page.

Figure 1.3 Edmund Dulac's Fairy Tales main activity page.

Figure 1.4 Chekhov main activity page.

Figure 1.5 Poe's main activity page.

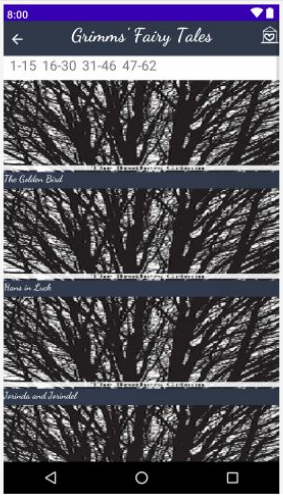

Figure 1.6 Grinmy's Fairy Tale main activity page.

Figure 1.7 An audiobook activity page.